We welcome you to the 50th Golden Anniversary World Congress of the International College of Angiology at Jikei University School of Medicine, Tokyo, Japan.

Evaluation and CME Information

The abstracts have been prepared as an adjunct to the oral presentations. Program evaluation forms are provided with your registration packet. We value your input, which allows us to continually improve the program to meet your educational needs. Additional forms are available at our Registration Desk.

At the conclusion of the program please be prepared to hand in your completed evaluation form when you pick up your CME Certificate.

Those attendees who attend the entire program will be given their CME Certificate on-site at the conclusion of the program. Those who arrive late or depart early will have their certificates mailed to them within 3 weeks of the conclusion of the program. Any questions regarding your CME Certificate should be directed to the Executive Office of the ICA at 631.366.1429.

Accreditation Statement
This activity has been planned and implemented in accordance with the Essential Areas and Policies of the Medical Society of the State of New York (MSSNY) through the joint sponsorship of MSSNY and the International College of Angiology, Inc. MSSNY is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to sponsor continuing medical education for physicians.

The Medical Society of the State of New York (MSSNY) designates this educational activity for a maximum of 25 AMA/PRA (Physician's Recognition Award) Category 1 Credits™. Physicians should claim commensurate with the extent of their participation in the activity.

Faculty Disclosure Policy
As a sponsor accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians, the Medical Society of the State of New York, must ensure balance, independence, objectivity, and scientific rigor in all it's directly sponsored or jointly sponsored educational activities. We are required to identify all relevant financial relationships with any commercial interest; determine whether these relationships create a conflict of interest with the individual's control or content and resolve all conflicts before the educational activity occurs.

The Medical Society of the State of New York relies upon Course Directors, planners, moderators and invited faculty participants in its CME programs to provide educational information that is objective and free from bias. In this spirit, and in accordance with the ACCME Standards for Commercial Support, Course Directors, planners, moderators and faculty participants are expected to disclose the existence of any significant financial interest or other relationship the faculty member (spouse or partner) or provider has with the manufacturer of any commercial product discussed in an educational presentation.

All are expected to disclose:

- Any relevant financial relationship with the provider of commercial products or services discussed in their educational presentation or that have directly supported the CME activity through an educational grant to the sponsoring organization(s).

And

- If the product he/she will be discussing is not labeled for the use under discussion and the product is still investigational.

Table of Contents

Sunday, July 20, 2008

Sunday, July 20, 2008
Endovascular Repair of Aortic Aneurysms (Continued)

Monday, July 21, 2008

Professor Hans J. Hachen Memorial Lecture

Peripheral Vascular Surgery—Arterial System

Monday, July 21, 2008
Peripheral Vascular Surgery—Arterial System (Continued)

Special Luncheon Lecture

Live Case Presentations from the OR

Special Lectures

Coronary Artery Disease and Hypertension

Monday, July 21, 2008
Peripheral Vascular Surgery—Venous System

Carotid Endarterectomy

Professor Kailash Prasad Oration Lecture

Tuesday, July 22, 2008
Special Interest Breakfast Session

Live Case Presentations from the OR

Tuesday, July 22, 2008
Carotid Interventions, Carotid Trial Implications, EVAR Complications, and Update on Thoracic Devices

Special Lecture

Peripheral Arterial Aneurysms

Special Interest Luncheon Session

Special Lecture

EVAR, TAA, AA Stent Grafts, and Carotid Stenting in 2008

Tuesday, July 22, 2008
EVAR, TAA, AA Stent Grafts, and Carotid Stenting in 2008 (Continued)

Special Lecture

Arterial Endografts

Special Lecture

Scientific Poster Presentations

Monday, July 21, 2008

Tuesday, July 22, 2008

50th Golden Anniversary World Congress
Tokyo, Japan
July 20-23, 2008

Scientific Program

Sunday, July 20, 2008

1:00 PM – 1:45 PM

Jikei University Building U1, 3rd Floor Main Auditorium

Opening Ceremony

Master of Ceremony and Introductions By:

Takao Ohki, MD, PhD, FICA

Professor of Surgery, Albert Einstein College of Medicine, New York, New York; Secretary General and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Editor, International Journal of Angiology; Chairman, Department of Surgery and Chief, Department of Vascular Surgery, Jikei University School of Medicine, Tokyo, Japan.

Introductions

Program Chairman

John B. Chang, MD, FICA, FACS

Professor of Clinical Surgery, Albert Einstein College of Medicine; Chairman, Board of Directors, International College of Angiology; Editor-in-Chief, International Journal of Angiology; Director, Long Island Vascular Center, Roslyn, New York; Attending Surgeon, North Shore-Long Island Jewish Healthcare System, New Hyde Park, New York.

President

John D. Corson, MB, ChB, FICA

Professor of Surgery; President and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Senior Editor, International Journal of Angiology; Chief, Surgical Service, NMVAHCS, Albuquerque, New Mexico.

President-Elect

Sibu P. Saha, MD, MBA, FICA

Professor of Clinical Surgery; Member, Board of Directors and President-Elect, International College of Angiology; Chairman, Membership Committee, International College of Angiology; Editor, International Journal of Angiology; Department of Surgery, University of Kentucky, Lexington, Kentucky.

Local Organizing Committee

Takao Ohki, MD, PhD, FICA, *Chairman*

Professor of Surgery, Albert Einstein College of Medicine, New York, New York; Secretary General and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Editor, International Journal of Angiology; Chairman, Department of Surgery and Chief, Department of Vascular Surgery, Jikei University School of Medicine, Tokyo, Japan.

Hiroki Ohta, MD

Secretary General, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Department of Surgery, Jikei University School of Medicine, Tokyo, Japan.

Miwa Kamiya, BS

Executive Secretary, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Department of Surgery, Jikei University School of Medicine, Tokyo, Japan.

Sunday, July 20, 2008

1:00 PM – 1:45 PM
Jikei University Building U1, 3rd Floor Main Auditorium

Presidential Address

John D. Corson, MB, ChB, FICA
Professor of Surgery; President and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Senior Editor, International Journal of Angiology; Chief, Surgical Service, NMVAHCS, Albuquerque, New Mexico.

Opening Remarks & Welcome Address

Introduction By:

John B. Chang, MD, FICA, FACS
Professor of Clinical Surgery, Albert Einstein College of Medicine; Chairman, Board of Directors, International College of Angiology; Editor-in-Chief, International Journal of Angiology; Director, Long Island Vascular Center, Roslyn, New York; Attending Vascular Surgeon, North Shore-Long Island Jewish Health System, New Hyde Park, New York.

Presentation By:

Takao Ohki, MD, PhD, FICA
Professor of Surgery, Albert Einstein College of Medicine, New York, New York; Secretary General and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Editor, International Journal of Angiology; Chairman, Department of Surgery and Chief, Department of Vascular Surgery, Jikei University School of Medicine, Tokyo, Japan.

•

1:45 PM - 2:15 PM
First Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Professor Yoshio Mishima Memorial Lecture
Advances in Angiology and Vascular Surgery in Japan

Keishu Yasuda, MD, FICA, *Professor Emeritus, Hokkaido University Postgraduate School of Medicine, Sapporo, Japan; Vice President, International College of Angiology; Editor, International Journal of Angiology; Director General, Bibai Rosai Hospital, Japan Labour Health and Welfare Organization, Sapporo, Japan.*

Purpose
In this paper, we think of Professor Yoshio Mishima, as not only a surgeon, but also great organizer of societies for general and vascular surgery in Asia, and talk about some topics of Takayasu's aortitis and Buerger's disease.

Dr. Yoshio Mishima passed away on September 17, 2007, at the age of 76. Dr. Mishima, who organized angiology and vascular surgery not only in Japan but also across Asia, contributed significantly to the development, globalization, and international exchange of the field. Dr. Mishima was one of the founding members of International Society of Budd-Chiari Syndrome (1988) and Asian Society for Vascular Diseases (1990). He headed the 94th Annual Congress of the Japan Surgical Society in 1994 with "Integration and Segmentation in Surgery" as the main theme, which he had been addressing over the years. In his speech at the conference, he said, "As a key society of surgery, it is important for us, from a broader perspective, to systematize surgery while totally adjusting its rapid segmentation into specialized areas and their unique development." In addition, he also contributed significantly to the development of the specified disease research team established by the Ministry of Health, Labor, and Welfare in 1972, which has handled intractable angiitis. The team established criteria in the epidemiology, pathogenesis, diagnosis, and treatment of intractable angiitis including Buerger's disease and Takayasu's arteritis. In addition to his academic contribution to the development of vascular surgery in Japan, Dr. Mishima worked for the clinical introduction of new drugs. About three decades ago when vascular surgery in Japan was in the early stages, the development of antiplatelet agents, vasodilator agents, and anti-thrombins were being actively pursued. Dr. Mishima, with his charismatic and strong leadership, brought rapid progress to clinical trials and the clinical introduction of these agents. Among the PAD related drugs he was involved with include ticlopidine, cilostazol, prostaglandin, tPA, and sarpogrelate hydrochloride. In the clinical trials and clinical introduction of almost all drugs currently used for PAD treatment, Dr. Mishima played an indispensable role.

Sunday, July 20, 2008
2:15 PM – 2:45 PM
Second Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Professor John B. Chang Oration Lecture
Thoracic Aortic Aneurysms: Reading the Enemy's Playbook

John A. Elefteriades, MD, FICA, *William W.L. Glenn Professor of Cardiothoracic Surgery; Vice Chairman and Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific Committee, International College of Angiology; Senior Editor, International Journal of Angiology; Chief, Section of Cardiothoracic Surgery, Yale University School of Medicine, New Haven, Connecticut.*

Background
The purpose of the present study was to use the clinical database at the Yale University Center for Thoracic Aortic Disease to shed light on the pathophysiology of thoracic aortic aneurysm (TAA), the clinical behavior of thoracic aortic aneurysm, and the optimal clinical management.

Materials and Methods
The Yale database contains information on 3,000 patients with thoracic aortic aneurysm, with 9,000 patient-years of follow-up and 9,000 imaging studies. Advanced statistical techniques were applied to this information.

Results
Analysis provided the following observations: (1) TAA is a genetic disease with a predominantly autosomal dominant mode of inheritance, (2) matric metalloproteinase (MMP) enzymes are activated in the pathogenesis of TAA, (3) wall tension in TAA approaches the tensile limits of aortic tissue at a diameter of 6 cm, (4) by the time a TAA reaches a clinical diameter of 6 cm, 34% of affected patients have suffered dissection or rupture, (5) extreme physical exertion or severe emotion often precipitate acute dissection, and (6) single nucleotide polymorphisms (SNPs) are being identified which predispose a patient to TAA.

Conclusions
The "playbook" of TAA is gradually being read, with the help of scientific investigations, positioning practitioners to combat this lethal disease more effectively than ever before.

Reproduced in part
World J Surg (2008) 32:366-374
Published online: 14 February 2008

Sunday, July 20, 2008

3:00 PM – 4:45 PM
Third Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Peripheral Vascular Interventional Techniques

3:00 PM **Emerging Technologies to Counter Restenosis after Peripheral Vascular Interventions**

Thomas Jahnke, MD, PhD, FICA, FCIRSE, *Associate Director, Department of Diagnostic Radiology; Chief, Vascular and Interventional Radiology, University Clinics Schlewswig-Holstein (UKSH), Kiel, Germany.*

Abstract
Despite recent advances in stent technology, neointimal hyperplasia still represents the main obstacle of peripheral recanalization procedures in the infrainguinal vascular territory. Each year an overwhelming number of experimental and clinical studies aim at finding new strategies for the prophylaxis of restenosis after balloon angioplasty and stent placement. The purpose of this lecture is to provide an overview on emerging treatment modalities that have the potential to revolutionize endovascular treatment of peripheral arterial disease.

Sunday, July 20, 2008

3:10 PM **Endovascular Management of Chronic Total Occlusions**

Thomas Jahnke, MD, PhD, FICA, FCIRSE, *Associate Director, Department of Diagnostic Radiology; Chief, Vascular and Interventional Radiology, University Clinics Schlewswig-Holstein (UKSH), Kiel, Germany.*

Abstract
Percutaneous techniques for the revascularization of symptomatic lower limb arterial chronic total occlusions (CTOs) remain suboptimal due to difficulty in safely and reliably crossing these heavily calcified lesions using standard guidewire and balloon technology. New recanalization tools that have recently become available include the Frontrunner catheter for controlled blunt micro dissection, and dedicated re-entry devices (e.g. Outback catheter) for the management of failed subintimal recanalization. This lecture reviews both, standard and newer state of the art techniques for endovascular recanalization of chronic total occlusions. The indications and limitations of these procedures are discussed and pros /cons demonstrated using of typical cases from daily practice.

Sunday, July 20, 2008

3:20 PM **Cryoplasty for Femoropopliteal Artery Disease—Will Freezing Solve the Problem of Cold Feet?**

Thomas Jahnke, MD, PhD, FICA, FCIRSE, *Associate Director, Department of Diagnostic Radiology; Chief, Vascular and Interventional Radiology, University Clinics Schlewswig-Holstein (UKSH), Kiel, Germany.*

Objective
Upon completion of this lecture the participant will be able to identify the three main effects of cryoplasty which theoretically contribute to a beneficial outcome of the procedure. A thorough literature review, including recent results from a randomized study comparing cryoplasty with conventional angioplasty, is given to determine the current role of this technique for peripheral arterial disease.

Abstract
Despite recent innovations in recanalization techniques, catheters, guide wires and stents with significant improvements in flexibility, profile and mechanical resistance, the advent of dissection, elastic recoil and neointimal hyperplasia continues to plague the results of femoropopliteal interventions. Cryoplasty is a new technique that describes a combination of conventional balloon dilatation with simultaneous cooling of the target lesion. Cold thermal energy is delivered to the vessel by inflating the balloon with nitrous oxide instead of saline and contrast. The liquid nitrous oxide changes its state to gas when entering the balloon, which dilates the vessel with a controlled pressure of eight atmospheres and - at the same time - causes an endothermal reaction with a heat sink of -10°C at the treatment site. Experimental and early clinical data have shown that the change of plaque microstructure can lead to a reduction in elastic recoil by freeze-induced alteration of the morphology of collagen and elastic fibers and thus enhance the acute procedural success of percutaneous transluminal angioplasty. The induction of apoptosis of vascular smooth muscle cells (VSMC) on the other hand has the potential to reduce neointimal hyperplasia and consecutive restenosis.

In a study by Laird *et al.* [J. Vasc. Interv. Radiol. 2005 16: 1067-1073], a cohort of 102 patients with lesions of the femoropopliteal artery were enrolled. Primary endpoints were acute technical success of cryoplasty as a stand alone procedure, overall procedural success (including adjunctive stenting), and clinical patency at 9 months (as defined by freedom from target lesion revascularization, TLR). Secondary endpoints were adverse events and 9-months primary patency, as determined by duplex ultrasound. Cryoplasty proved to be safe, and device-related adverse events were not reported. The initial technical success was 85.3%, with a low dissection rate of 6.9%. Overall procedural success - including bailout stenting - was 94.1%. For all lesion types (stenoses and occlusions) there were 9-months clinical patency of 82.2%, with a corresponding TLR- rate of 17.8 %, Primary patency assessed by duplex ultrasound at nine months was 70.1%. In the subgroup of patients initially presenting with total occlusions 9-months primary patency was 92.3%, and clinical patency was 100% (TLR- rate 0%). As a matter of fact the primary patency of ~70% at 9 months compares favourably to historical data of conventional balloon angioplasty as published in the literature.

We currently perform a prospective, randomized single-centre study to compare cryoplasty versus conventional balloon angioplasty in the popliteal artery, first results have been reported at this years SIR Meeting (SIR 2008, March, Washington DC, USA). Included in the study were patients with de-novo stenoses or occlusions of the popliteal artery. Randomization was to either cryoplasty or balloon angioplasty ("Plain old balloon angioplasty", POBA) as the initial treatment strategy. Of the fifty-six patients (mean-age, 72 years; range, 50-94) enrolled so far, twenty-four received cryoplasty, thirty-two angioplasty. Cryoplasty alone showed an initial treatment success of 29.2% (7/24) versus 56.3% (18/32) after POBA. Rate of relevant dissection after cryoplasty alone was 45%, versus 25% following POBA (p=0.06). In 70.8% (17/24) of the cryoplasty patients additional long-term angioplasty with a conventional balloon was performed. Rate of stent placement for persistent dissection and/or residual stenosis was 37.5% after Cryoplasty (including long-term dilation) and 40.6% after POBA (p=0.37). Target vessel patency at 6 months is 58.3% for POBA, versus 75% for cryoplasty, however, results were not significant (p=0.66). Thus, our first results indicate that cryoplasty of the popliteal artery alone shows a higher rate of dissection when compared to POBA, which is a contradiction to earlier non-randomized studies. When combined with additional long-term balloon angioplasty, however, stent placement is not needed more often. There was a trend towards higher target vessel patency after cryoplasty, but longer follow-up still remains.

Sunday, July 20, 2008

3:30 PM **Basic Research on the Mechanism of Action of Cryoplasty**

Bauer E. Sumpio, MD, PhD, FACS, FICA, *Professor of Surgery; Co-Chairperson, Scientific Committee, International College of Angiology; Senior Editor, International Journal of Angiology; Chief, Department of Vascular Surgery, Yale University School of Medicine;* Wai-Ki Yiu MBBS MRCS; Stephen WK Cheng MS FRCS FACS; *Department of Vascular Surgery, Yale University School of Medicine, New Haven, Connecticut; University of Hong Kong, Hong Kong.*

Background
Restenosis, in which the interactions of SMC and EC play a significant role, is a major complication in treating peripheral arterial disease. Recent studies have shown that cryoplasty may produce less restenosis but its underlying mechanism is still not well understood. This study investigates the survival responses of SMC and EC after different cycle treatments of supercooling and re-warming in an in vitro model simulating cryoplasty.

Material and Methods
Bovine aortic SMC and EC were cultured separately in six well plates with medium supplemented with 10% fetal bovine serum. In the 1 cycle treatment group, the cells were supercooled for 60 seconds to -10^{o} C and then re-warmed rapidly in a water bath at 37^{o} C for another 60 seconds. The samples were then put into an incubator at 37^{o}C for 0, 6, 12, and 24 hours. Two cycles of treatment were done by supercooling and re-warming the cells twice. TUNEL assay, immunohistochemistry (IHC) and western blot WB) were used to measure apoptosis and Akt activation.

Results
Both EC and SMC showed increasing apoptotic rates with increasing re-warming time and no. of cycle treatment, but significantly higher in SMC ($p<0.05$), corresponding to its decreasing Akt activation with prolonging re-warming time and cycles of treatment ($p<0.05$). On the other hand, EC showed significant higher Akt activation, as assessed by IHC and WB, at 6 and 12 hours re-warming time compared with SMC ($p<0.001$). It was significantly peaked at 6 hours by 3 fold ($p<0.05$) and then decreased with re-warming time.

Conclusion
The higher apoptotic rate and lower Akt activation with increasing re-warming times and treatment cycles in SMC, together with the relative lower apoptosis in EC may explain why cryoplasty can produce lower restenosis, where the integrity of EC and the lower SMC survival are the important factors in reducing restenosis. This information will also be useful in determining optimal cycle regimen for cryoplasty.

Sunday, July 20, 2008

3:40 PM **Outcome of Blood Pressure and Renal Function in Patients with Renal Artery Stenosis after Stenting**

Ashish Anil Sule, MD, MRCP(UK), FICA, *Registrar, General Medicine;* Dessmon YH Tai, FRCP(UK), FAMS, *Senior Consultant, Respiratory Medicine;* Pang Chan, *Statistician, Clinical Research Unit;* Pankaj Handa, MRCP(UK), FAMS, *Consultant, General Medicine;* Jam Chin Tay, MRCP(UK), FAMS, FRCP, *Deputy Head, Senior Consultant, General Medicine, Tan Tock Seng Hospital, Singapore.*

Purpose
To study the response of systolic and diastolic blood pressure (BP) and renal function after renal artery stenting at 3 months, 6 months, 1 year and last follow up.

Materials and Methods
Patients with significant renal artery stenosis (RAS) who underwent angioplasty with stenting from January 1999 to September 2006 were analyzed. The BP and serum creatinine were recorded at baseline 3 months, 6 months, 1 year and last follow up. Generalized estimating equations were applied to analyze the changes in BP and serum creatinine over time.

Results
There were thirty-two patients, 21 Chinese, 6 Malay, and 5 Indians. The male to female ratio was 1.3:1. The mean age was 69.4 ± 8.8 years. The mean follow up was 1.8 ± 1.6 years (range 0.5-6 years). When compared with the baseline BP, there was significant improvement at 3 months, 6 months, 1 year, and last follow up. In the diabetic mellitus (DM) group, there was deterioration in serum creatinine. In the non-DM group, there was stabilization of serum creatinine with improvement at 1 year.

Conclusion
Significant improvement in BP occurs in RAS patients' post-stenting. In patients without DM, the renal function remains stable or improves. However, in DM patients especially those with proteinuria, there is deterioration in renal function.

Sunday, July 20, 2008

3:50 PM **Thirty-Day Outcome of Direct Carotid Artery Stenting Using a Filter Wire Protection Device in High Risk Patients**

Josef Veselka, MD, PhD; D. Černá; P. Zimolová; M. Šramko; A. Tomek; M. Šrámek; *Cardiovascular Center and Department of Neurology, University Hospital Motol, Prague, Czech Republic.*

Background
Carotid artery stenting is an endovascular alternative to carotid endarterectomy for the treatment of obstructive carotid stenoses. From a technical perspective, carotid stenting is currently in an extremely rapid phase of development. Embolic protection devices, stents, and our technique are evolving to expedite the whole procedure.

Methods
The present prospective, single-center registry was designed to evaluate the feasibility and safety of direct carotid artery stenting (DCAS) without previous balloon dilation in patients at high risk for carotid endarterectomy. Inclusion criteria were a symptomatic carotid artery stenosis >50% or an asymptomatic stenosis >70%, and distal diameter of the internal carotid artery <5.5 mm. Clinical criteria for high-risk patients included: age >79 years, significant contra lateral carotid artery stenosis or occlusion, previous endarterectomy, ongoing cerebral ischemic event, need for open heart surgery, multivessel coronary artery disease, history of open heart surgery or myocardial infarction, severe pulmonary disease or renal insufficiency, all in accordance with NASCET trial registry exclusion criteria. In all selected cases a FilterWire protection device was used.

Results
A total of 130 consecutive patients (68 males, 68±9 years) underwent 155 procedures, and 162 stents were successfully deployed. Predilation of carotid artery stenosis was necessary in nine (5.8%) procedures among all. The primary technical success rate of stenting was 100%. The stenoses rate before and after stenting was 80% and 6%, respectively. The median of fluoroscopic time of the procedure was 6 min (3-10 min). The overall number of in-hospital major adverse cerebrovascular events (death, stroke, or myocardial infarction) was 3.2%. All procedures resulted in a minor stroke, and full recovery occurred within 48 hours. There was no myocardial infarction within 30 days follow-up, in this registry analysis. However, 2 (1.3%) pts. died from sudden cardiac death and 1 (0.65%) pt. suffered from a minor stroke within the short-term follow-up.

Conclusion
DCAS using a FilterWire protection device was feasible, safe, efficacious and a rapid procedure in this series of selected high-risk consecutive patients.

Sunday, July 20, 2008

4:00 PM **Management of Difficult, Severely Ill, or Recurrent Patients with Budd-Chiari Syndrome**

Zhong Gao Wang, MD, PhD, FICA, FSVS; *Vice President, International College of Angiology; Editor, International Journal of Angiology;* Chun-Min Li, MD; Zhen Li, MD; *Department of Vascular Surgery, XuanWu Hospital; Capital Medical University; Department of Thoracic and Cardiovascular Surgery, Second Artillery General Hospital, Beijing, China.*

Objective
The solution of patients with Budd-Chiari syndrome has been available. However, the management for difficulty, severely ill, and recurrent patients with this disorder still deserves exploration.

Methods
From February 2004 to August 2007, our institution treated 28 patients with aforementioned situation. The patients included 15 recurrences after PTA or stent deployment, 3 recurrences after previous surgery, and 10 under severely ill condition, including five with malignancy in the retrohepatic inferior vena cava extending into right atrium. The means for management included mesocavoatial shunt in 10, mesocavoatiral shunt in 6 (one with capital medusa – jugular shunt), cavoatrial shunt in 2, a cavojugular shunt in 1, a mesocavoal shunt in 2, and extended radical resection in 7 cases.

Results
Operative death in one (3.6%), excellent, good, poor, and death were 77.7%, 14.8%, 3.7% and 3.7%, respectively, with an overall effective rate of 92.5%. The patient with poor results was perhaps due to thrombosis of the graft. Graft infection occurred in one case, which was resolved by conservative therapy.

Conclusion
Active management tailored to individualized underlining pathologies, brings hope for saving or prolonging life expectancy. Venous graft occlusions and recurrence of malignancy are still the major problem to be overcome.

Sunday, July 20, 2008

4:10 PM **Treatment of the Nutcracker Syndrome—Surgery or Stents?**

Zhong Gao Wang, MD, PhD, FICA, FSVS; Li Zhen, MD; Bao-zhong Yang, MD; *Second Artillery General Hospital of PLA; Vascular Institute, Xuan Wu Hospital; Department of Vascular Surgery, Capital University of Medical Science, Beijing, China.*

Purpose
To explore the therapeutic strategy for nutcracker syndrome (NCS).

Materials and Methods
From October 2004 through November 2007, 10 patients with NCS were admitted, nine male and one female. The range in age was from 14-32 with a mean of 23.3 years. The duration of illness was from 7 months to 3 years with an average of 23 months. Hematuria occurred in all patients. Proteinuria was seen in 8. Seven patients were examined by cystoscopy, revealing that the blood was from the orifice of the left urethra. Duplex scan was performed either in a standing or supine position. Magnetic resonance angiography (MRA) was used for the angle between the superior mesenteric artery (SMA) and aorta, which ranged from 27-34 degrees. Among them, one patient had simultaneous malformations of the left–side of the inferior vena cava (IVC) and NCS. Re-implantation of the SMA from above the left renal vein (LRV) to below was carried out in 5 cases, transposition of LRV in 2, and stenting of the LRV in 3. In addition, excessive fibrosis around the mesenteric root was found in 7 patients. Excision or dividing is always necessary in order to have adequate decompression of the LRV.

Results
The average pressure difference between the LRV and IVC was (15±5) and (3.3±1.7) cmH_2O before and after treatment respectively. All patients had an uneventful recovery with good outcome. Follow-up was made from 2 to 36 months after treatment. Urine analysis was normal in all patients even after aggressive physical activities.

Conclusion
Ultrasonography, MRA, renal venography, and especially cytoscopy can establish the final diagnosis of nutcracker syndrome. Open surgical interventions although effective, may be associated with certain morbidity. Deploying a stent in the LRV is a good option. However, intimal hyperplasia or thrombosis formation might be of concern, particularly with those patients tightening compression, such as those with left-sided IVC. It is our opinion, when tightening compression exists a stent would not the intervention of choice. Those patients with NCS, and who are young, can expect favorable treatment.

Sunday, July 20, 2008

4:20 PM **Splenic Arterial Interventions—10-Years Experience**

Rajinder P. Sharma, MD, FICA, *Member, Board of Directors and Treasurer, International College of Angiology; Co-Chairperson, Membership Committee, International College of Angiology; Editor, International Journal of Angiology; Senior Staff Professional;* Paul Suiter, MD; *Department of Interventional Radiology, Henry Ford Hospital, Detroit, Michigan.*

Purpose
The purpose of this study is to evaluate our 10-year experience in various splenic arterial interventions.

Materials and Methods
Sixty-four transcatheter splenic artery embolizations (SAE) were performed in the last 10 years in our institution by the interventional radiologists. Most of the SAE were performed on hemodynamically stable patients with blunt splenic injury. The role of CT both pre- and post-SAE, distal versus proximal embolization, radiation considerations, technique, results and complications will be addressed. Endovascular coiling or stenting of splenic artery aneurysms will also be shown. SAE for various myeloproliferatives disorders to increase platelet count and SAE for splenic artery steal syndrome after liver transplantation will also be discussed.

Conclusion
In blunt injury to the spleen, SAE proved to be effective, avoiding splenectomy. The advantages of conservative therapy for splenic injury include the preservation of splenic immune function to prevent overwhelming post splenectomy sepsis.

Sunday, July 20, 2008

4:45 PM – 6:15 PM
Fourth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Endovascular Repair of Aortic Aneurysms

4:45 PM **Total Percutaneous Endovascular Aneurysm Repair (TPAR)—The Dual 6F Closer-AT™ Preclose Technique**

Thomas Jahnke, MD, PhD, FICA, FCIRSE, *Associate Director, Department of Diagnostic Radiology; Chief, Vascular and Interventional Radiology, University Clinics Schlewswig-Holstein (UKSH), Kiel, Germany.*

Objectives
After completion of this lecture the participant will be able to

1. Describe modern percutaneous closure techniques for management of large vascular access sites
2. Appreciate indications and limitations of Total Percutaneous Endovascular Aneurysm Repair (TPAR)
3. Explain the 6F Dual Closer Technique in a step-by-step fashion

Endovascular aneurysm repair (EVAR) is increasingly popular as a durable treatment option for aortic aneurysm given appropriate anatomy. Vascular access for EVAR is still typically performed with bilateral femoral artery exposure. However, complications of femoral artery cut-down in the setting of EVAR are not uncommon and include hematoma, infection, and seroma. Total percutaneous aneurysm repair (TPAR) is especially attractive for patients with hostile abdomens in which even femoral artery exposure can be quite difficult and associated with high complication rates. The aim of this lecture is to demonstrate current techniques and limitations of percutaneous closure for larger vascular access sites. With adequate assessment of femoral anatomy and precise positioning of point of access in the femoral artery, percutaneous closure of sheath sizes up to 24 F (outer diameter) has become clinical reality, resulting in excellent postoperative patient recovery.

Materials and Methods
Total percutaneous EVAR (TPAR) was first described by Haas and colleagues (J Endovasc Surg 1999; 6:168-170) who used 10F Prostar closure devices (Abbott, USA) to manage larger femoral access. A meta-analysis of subsequent publications (2001-2004) with the Prostar-technique has indicated a mean success of 85.9% for sheath sizes ranging from 12-24 French. At our institution we have adopted a modified percutaneous closure technique for EVAR patients with off-label use of two 6 F Perclose devices (Perclose Closer-AT; Abbott, USA) pre-applied at a 90° angle. So far 57 femoral access sites were treated with the technical success of the technique being 93% (53/57). The 12 French access was successfully closed in 100% (16/16), and 18-24 French access in 89.2% (33/37). Four technical failures occurred, but were all managed intra-operatively with a single surgical suture. There was no operative morbidity/mortality. Mean duration of the TPAR procedure was 105 min (±41), and access closure time was 10 min (±9min). In a previous cohort of patients with surgical groin management the mean procedure time was 153 min (±112), p=0.018), and access closure time was 12 min (±13; p=0.24). All patients were followed clinically and with CT/MRI for detection of groin complications. A groin hematoma/scar severity score (grades 1-3) was generated from the CT/MR data at 3 days, and at 3, 6 and 12 months and data was compared to a previous cohort of EVAR patients (n=38) with surgical femoral cut-down. Inguinal hematoma/scar severity score at 3 days, and 3, 6, 12 months was 1.8/1.1/1.0/1.0 for TPAR, and 2.1/2.4/2.4/2.3 for surgical access closure respectively.

Conclusion
In conclusion total percutaneous endovascular aneurysm repair with a Dual 6F-Closer preclosing technique is safe and effective. Compared to femoral cut-down, procedure time seems to be reduced. Groin scar tissue formation is less, thus patient discomfort very low.

Sunday, July 20, 2008

4:55 PM **Single Open Endovascular Treatment (OTA) vs. Combined Procedures (Hybrid) in Arterial Occlusive Disease (AOD) Therapy in a Pure Vascular Surgical Department—A 5-Year Evaluation**

Gernold Wozniak, MD, PhD, FICA, *Professor of Surgery, Vice President, International College of Angiology; Co-Chairperson, Membership Committee, International College of Angiology; Editor, International Journal of Angiology; Head, Department of Vascular Surgery, Knappschaftskrankenhaus Bottrop, Bottrop, Germany;* Gero Lorenz, MD; Hojat Pilehvar, MD; Oliver Peternely, MD; Jörg Forkel, MD; Heinrich Montag, MD; Werner Altmeyer, MD; Jose Alemany, MD, *Member, Board of Directors, International College of Angiology; Co-Chairperson, Membership Committee, International Journal of Angiology; Editor, International Journal of Angiology; Department of Vascular Surgery, Knappschaftskrankenhaus Bottrop, Bottrop, Germany.*

Purpose
To evaluate the results of a multi-step procedure with vascular intervention and arterial reconstruction (hybrid) in contrast to a single step procedure with an open endovascular intervention (OTA).

Materials and Methods
During a period of 60 months overall 2210 patients underwent surgical treatment for AOD. Three hundred eighty-one patients (5.8%) underwent open (skin cut) endovascular procedure (Group A: n=178, 67.1 $\pm$ 8.4 years) or hybrid procedures (Group B: n=203; 64.9 $\pm$ 8.9 years) in a pure vascular surgical department. Mean follow up time is 27.3 $\pm$ 6.2 months. Consecutive investigations were done all 3 to 6 months by determination of ABI and cc-duplex scanning. In case of detection of relevant stenosis angiography or CT was done to objectify and classify the vascular morphology.

Results
There was no perioperative death in any group. Cumulative patency was 80.4% (mean follow up: 24.6 mo) in group A and 87.5 % (mean follow up: 30.1 mo) in group B. In group A, we detected 14 patients with an occlusion and 21 patients with a re-stenosis. In group B, there were 20 patients with an occlusion and only 3 with a re-stenosis.

Conclusion
Despite the fact that hybrid procedures are not sufficiently covered by the German health care system, the results after complex hybrid operations are comparable with single step procedures. Those results may further encourage vascular surgeons to become experts also in complex endovascular techniques.

Sunday, July 20, 2008

5:05 PM **Endovascular Treatment of Aortic Arch Lesions**

Shenming Wang, MD, PhD[1]; Chang Guangqi, MD[1]; Li Xiaoxi, MD[1]; Yao Chen, MD[1]; Hu Zuojun, MD[1]; Yang Jianyong[2], MD; Chen Wei, MD[2]; Li Jiaping, MD[2]; *[1]Departments of Vascular Surgery and [2]Radiology, The First Affiliated Hospital of Sun Yat-sen University, Guanzhou, China.*

Purpose
To analyze a single center's experience of endovascular treatment for aortic arch lesions.

Materials and Methods
Thirty-four patients received endovascular stent grafting for aortic arch lesions. Twenty-eight patients had aortic dissections, including 20 Stanford type A, and 8 Stanford type B dissections; and 6 had aortic arch aneurysms. Supra-aortic transposition of the great vessels was performed in conjunction with endovascular stent grafting in 20 of these cases, including 14 aortic dissections and 6 aortic arch aneurysms. In 14 of the dissections, the tear entry was located in the distal aortic arch, enabling the left subclavian artery to be sealed without reconstruction.

Results
The procedures were successful in 33 patients (97.1%); one intra-operative death occurred. Type I endoleaks were found postoperatively in 9 cases. Of these, 8 decreased or disappeared after management such as balloon angioplasty, another stent implanting, etc. The mean follow-up time was 29.2 ± 5.0 months (range 1- 81 months). Complete thrombus formation in the false lumen of aortic dissection was found in 19 cases, and partial thrombus formation was found in 8 cases. Thrombus formation in the aortic aneurysm occurred in 6 cases with aortic arch aneurysms. One patient with Stanford type A dissection died from an unclear cause after 3 months. The general survival rate was 94.1% (32/34).

Conclusion
Endovascular stent grafting is a safe and effective method in the treatment of aortic arch lesions. In cases involving the aortic arch, the supra-aortic great vessel transposition can be effectively combined with endovascular stent grafting to ensure blood flow to the supra-aortic great vessels.

Sunday, July 20, 2008

5:15 PM **A Case of Inflammatory Abdominal Aortic Aneurysm Concurrent with IgG4 Related Autoimmune Pancreatitis**

Shigeshi Ono, MD; Kenji Matsumoto, MD; Hideaki Obara, MD, FICA; Toshiaki Hattori, MD; Naoki Fujimura, MD; Yuko Kitagawa, MD; *Department of Surgery, Keio University School of Medicine, Tokyo, Japan.*

Purpose
Inflammatory abdominal aortic aneurysm (IAAA) and is known to be a variant of abdominal aortic aneurysms (AAA) and is characterized by extensive peri-aneurysmal fibrosis, thickened walls, and dense adhesions. IAAA is considered to be associated with increased incidence of autoimmune disease. Previous works have reported that nonspecific AAA has a prominent infiltration of inflammatory cells, and soluble extracts of AAA tissue are rich in immunoglobins. On the other hand, a relationship to sclerosing diseases concurrent with autoimmune pancreatitis has been reported in some cases of IgG4. We, herein, report a successful operative case of an IAAA patient concurrent with IgG4 related autoimmune pancreatitis.

Materials and Methods
A 63-year-old man with dull abdominal pain was diagnosed with an infrarenal AAA (6cm in a diameter) by abdominal ultrasound in May 2007. Abdominal enhanced computed tomography (CT) revealed an infrarenal IAAA with thickened retroperitoneum and a space occupying lesion (4cm in a diameter) in a pancreatic body and tail. The pancreatic lesion was suspected as autoimmune pancreatitis due to the elevation of serum IgG. We planned a resection of the IAAA and pancreatic biopsy for diagnosis of the pancreatic lesion. However, a coronary arterial bypass graft (CABG) was performed in July 2007 prior to AAA repair, since the preoperative cardiac screening revealed coronary arterial disease. Abdominal CT scan, performed a month after the CABG, showed an IAAA without an interval change and a size reduction of the pancreatic mass, which suggests that the pancreatic mass was a benign lesion.

Results
The IAAA was removed and replaced with a bifurcated ePTFE graft by transperitoneal approach. Histological examinations of the resected specimen of the aneurysm showed a typical finding of IAAA with abundant inflammatory cell infiltration. Immunohistochemically, abundant infiltration of IgG4-positive plasma cells were detected in the aneurysm wall. The patient's postoperative course was uneventful and no complications were observed during a follow-up period of 4 months.

Conclusion
We reported a case of IAAA concurrent with autoimmune pancreatitis associated with IgG4, which implies the relationship between a serum IgG4 and an IAAA. It may lead us to understand the pathogenesis of IAAA.

Sunday, July 20, 2008

5:25 PM **Are the Components of Modular Hybrid Endografts for Aneurysm Repair Compatible? A Systematic Study of Pull-Out Forces**

Gabriel M. Grant[1]; David P. Cina, MD[2]; Claudio S. Cinà, MD, FICA[2]; *[1]Department of Electrical and Biomedical Engineering, McMaster University, Toronto, Canada; [2]Division of Vascular Surgery, University of Toronto, Toronto, Canada.*

Purpose
An Endovascular aneurysm repair (EVAR) using modular component is an accepted treatment for abdominal aortic aneurysms. Physicians may use modular hybrid endografts (MHEG) derived from different manufacturers. The safety of MHEG is uncertain because of limited information regarding mechanical properties. The aim of this study is to define the pull out forces of modular endografts built with components derived from the same or different manufacturers.

Materials and Methods
A custom made electronic actuator applied standard forces to the modular endografts. Pull-out forces were measured using an electronic load cell calibrated with a correlation co-efficient >0.99. Measurements were transmitted to a computer via USB connection for data analysis. A 5% human albumin bath was used to simulate the intravascular medium. We study pull out forces between legs from Gore (diameters 15mm and 18mm) and Anaconda (diameters 12.5mm, 15mm, and 17mm) with the contralateral limb of bifurcated aortic components from Zenith (Cook7), Anaconda (Vascutek7) and Excluder (Gore7) (diameter 12mm, 12.5mm, and 13mmm respectively). Results with 4 cm overlap are reported. Each pull out force was repeated 3 times, reported in Newtons (N) and comparisons made using student two-tail t test at the 95% confidence level.

Results
The main results are summarized in a table. When the 12mm Anaconda limb was tested with a 15mm, the pull out force was 6.59 N, and when a 15mm was texted with a 17mm, it was 7.65.

BODIES	LIMBS				
	Anaconda			Gore	
	12mm	15mm	17mm	15mm	18mm
Anaconda	1.08	7.25H	>10I	3.15#	3.67'
Excluder	<0.1*	3.54I	4.59I	1.87##	2.28''
Zenith	0.91**	3.31	7.76	2.39	2.67

*compared with the other two, P<0.01; **compared with anaconda, P=0.14; H compared with the other two, P=0.001; II compared with Zenith, P=0.07; I compared with the other two, P=0.001; II compared with Zenith, P=0.003; #compared with the other two, P<0.06; ##compared with Zenith, P=0.03; 'compared with the other two, P<0.004; ''compared with Zenith, P=0.021.

Conclusion
Modular combinations using Anaconda components, and MHEG using Zenith bodies with Anaconda legs provided the highest pull out forces. The results of this work are helpful in selecting components from different manufacturers for MHEG.

Sunday, July 20, 2008

5:35 PM **Experience Using TAG Stent Grafts for Thoracic Aortic Aneurysms in Japan**

Yuji Kanaoka, MD; Kenjiro Kaneko, MD; Hiroki Ohta, MD; Makoto Sumi, MD; Koji Kurasawa, MD; Shigeki Hirayama, MD; Hiromasa Tachihara, MD; Naoki Toya, MD; Takao Ohki, MD, PhD, FICA, *Professor of Surgery, Albert Einstein School of Medicine, New York, New York; Secretary General and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Editor, International Journal of Angiology; Chairman, Department of Surgery and Chief, Department of Vascular Surgery, Jikei University School of Medicine, Tokyo, Japan.*

Purpose
Thoracic endovascular aneurysm repair (TEVAR) is an approved procedure in Japan. However, no industry-made device has been approved. The TAG stent (W.L. Gore & Associates) has been widely used since 2001 in the EU and since 2005 in the United States. We have used the TAG stent in Japan, by importing it privately with approval of the Institutional Review Board (IRB), so we hereby report our initial results.

Materials and Methods
We deployed 60 TAG stents in 48 patients from June 2006 to January 2008. In 12 cases, operation was performed under general anesthesia, included 4 cases of rupture, while the remaining 36 cases were performed under spinal block and/or epidural anesthesia.

Results
A sheath (20-24 Fr.) was inserted via the common femoral artery in 44 cases. In 4 cases the sheath was inserted from the common iliac artery due to a small femoral artery. Combined open surgery and TEVAR was performed in 9 cases; prior total arch replacement/elephant truck in 2; debranching in 5, and carotid artery bypass in 2 cases. All TAG stents were successfully deployed, but dissection of the ascending aorta occurred in one case.

Conclusion
The TAG stent graft is low profile, flexible, and can track the aortic arch safely. Deployment is accurate. Treatment of TAA using TAG stent grafts is safe and effective; therefore, its approval in Japan is highly anticipated.

Sunday, July 20, 2008

5:45 PM **Abdominal Aortic Aneurysm in Children and Young Adults**

Caisheng Ye, MD, PhD; Xiaoxi Li, MD, PhD; Songqi Li, MD, PhD; Weiming Lee, MD, PhD; Henhui Ying, MD, PhD; Shenming Wang, MD, PhD; *Department of Vascular Surgery, The First Affiliated Hospital of Sun Yat-sen University, Guanzhou, China.*

Purpose
Abdominal aortic aneurysms (AAA) are distinctly rare in the pediatric and young adult population. Early diagnosis is important to prevent limb-threatening or fatal complications. The purpose of this study was to evaluate the management of AAA in children and young adults.

Materials and Methods
The clinical data of 8 patients with AAA in one single medical center over the past ten years, under the age of 30 years was analyzed retrospectively. Color Doppler ultrasound and CT scan angiography were the main diagnostic tools. The diagnoses were made through imaging studies in 6 patients preoperatively. Surgical reconstructions with aneurysm resection and prosthetic material graft interposition were performed in 7 cases.

Results
There were 5 male and 3 female patients, with a median age at the time of diagnosis being 22 years, with a range of 3 to 28 years. Marfan syndrome was present in one patient, and Takayasu's arteritis in one patient. We could not identify any risk factors in the remaining patients. The AAA was infrarenal in 7 cases and suprarenal in 1 case. Rupture of AAA occurred in 3 cases and one of them was accompanied by aortic vena cava fistula, and another with aortic duodenum fistula. One patient died on the 28th day after operation from a lung infection and acute renal failure. The remaining patients survived without main complications in the follow-up period, ranging from 1 month to 10 years.

Conclusion
AAA was rare in children and young adults. Following diagnosis through an imaging examination, good results could be expected following operation.

Sunday, July 20, 2008

5:55 PM **Shaggy Aorta is the Predictive Factor of Aortic Dilation in Thoracic Aorta Pathologies**

Atsushi Kitagawa, MD; Yutaka Okita, MD, PhD; Kenji Okada, MD, PhD; Yoshihisa Morimoto, MD, PhD; Masamichi Matsumori, MD, PhD; Mitsuru Asano, MD, PhD; *Department of Cardiovascular Surgery, Kobe University Graduate School of Medicine, Kobe, Japan.*

Purpose
We analyzed aortic dilation in thoracic aorta pathologies in terms of aortic wall lesions using computed tomography (CT) data.

Materials and Methods
Fifty-one patients' CT data out of 115 thoracic aorta pathologies including aneurysms or dissections from January 2005 to December 2006 were reviewed retrospectively. The aortic diameter in the short axis plane was measured using an Aquarius Work Station (TeraRecon, Inc., San Mateo, CA) annually per year at the following aorta levels; pulmonary artery (N=36), distal arch (N=41)m and celiac axis (N=51). We investigated the relationship between the aortic dilation and the aortic lesions as follows, 1) saccular aneurysm, 2) shaggy aorta, 3) severe calcification, 4) PAU (penetrating atherosclerotic ulcer, 5) aortic dissection.

Results
According to the analysis of CT data (table), both shaggy aorta and severe calcification strongly affected aortic dilation in all aorta levels (N=128), especially the former with statistical analysis (the chi-square test, p=0.003).

Conclusion
Shaggy aorta could be predictive of aortic dilation in thoracic aorta pathologies. This result will contribute to expectation of aortic dilatation and prevention of aortic rupture in thoracic aorta diseases.

Table. The increment of aortic diameter per year (mm)

Lesions	Yes	N	No	N	P
saccular aneurysm	1.37±1.16	19	1.35±1.89	109	0.25
shaggy aorta	1.96±2.03	46	1.01±1.57	82	0.003
severe calcification	1.63±1.98	75	0.96±1.44	53	0.04
PAU	1.35±1.58	21	1.34±1.86	107	0.28
aortic dissection	1.21±1.84	24	1.41±1.79	104	0.48

Sunday, July 20, 2008

6:05 PM **Early Results of a Novel Bifurcated-Bifurcated Stent Graft for Preserving the Internal Iliac Artery**

Stephen W.K. Cheng, FRCS[1]; Albert C.W. Ting, FRCS[1]; Brendan M. Stanley, FRACS[2]; David Hartley, FIR[3]; *[1]Department of Surgery, The University of Hong Kong, Hong Kong; [2]Flinders Medical Center, South Australia; [3]Cook R&D, Perth, Australia.*

Purpose
Preserving the internal iliac artery is always a challenge during endovascular repair of abdominal aortic aneurysms. Traditional methods include hybrid reimplantation, aorto-uni-iliac grafts with contralateral external-internal stent grafting, or branched extensions. We present the early results of a novel branched stent graft design for this purpose in a feasibility study.

Materials and Methods
Five patients (four male), with a mean age of 67 years who had abdominal aortic aneurysms and bilateral or unilateral common iliac artery aneurysms were treated by a new stent graft system. A small 8mm diameter helical side branch was incorporated into the ipsilateral (long) limb of a custom made Zenith bifurcated stent graft (Cook Medical, Bloomington, IN). A one-way valved fenestration was constructed superior to the origin to facilitate contralateral cannulation of the branch and deployment of a bridging covered stent to the internal iliac artery.

Results
Technical access was achieved in all patients. Mean operating time was 4.5 hours with a blood loss averaging 150cc. Three Atrium stents and two Fluency stents were used. One-month follow-up CT scans showed the internal iliac arteries were patent with no endoleaks.

Conclusion
This new bifurcated-bifurcated stent graft system provides a promising alternative for a complete endovascular solution for preserving the internal iliac artery during endovascular aortic aneurysm repair.

Monday, July 21, 2008

8:00 AM – 9:00 AM
Fifth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Special Interest Breakfast Session
Carotid Intervention in Japan

Nobuyuki Sakai, MD, DM, Sc, *Director, Department of Neurosurgery, Kobe City General Hospital and KCGH Stroke Center, Kobe, Japan; Director, Division of Neuro-endovascular Therapy, Institute of Biomedical Research and Innovation, Kobe, Japan.*

On September 28, 2007, carotid stenting was approved in Japan based on the SAPPHIRE results. The national insurance coverage for CAS was recently provided on April 1, 2008. The PRECISE stent and ANGIOGUARD XP embolic protection device are currently the first and only devices that are approved and reimbursed in Japan to treat carotid artery disease in symptomatic and asymptomatic patients at high surgical risk. I would like to show the primary data of carotid artery stenting in Japan with the PRECISE stent and ANGIOGUARD XP embolic protection device.

Monday, July 21, 2008
9:00 AM – 9:45 AM
Sixth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Status of Endovascular Therapy in Japan—The Beginning of the Beginning

Takao Ohki, MD, PhD, FICA, *Professor of Surgery, Albert Einstein College of Medicine, New York, New York; Secretary General and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Editor, International Journal of Angiology; Chairman, Department of Surgery and Chief, Department of Vascular Surgery, Jikei University School of Medicine, Tokyo, Japan.*

In Japan, vascular surgery as a specialty is under recognized, under developed, and under served. This is particularly true, when one considers the status of endovascular therapy.

In the US, almost 200,000 carotid endarterectomies (CEAs) are performed annually and are mostly performed by vascular surgeons. In contrast, in Japan, only 1,500 CEAs are performed and are mostly done by neurosurgeons. Similarly, we only perform 1/60th of renal stenting compared with the US, and these are mostly performed by cardiologists. Although, not as drastic, this trend can be seen across all the disease states that a vascular surgeon treats.

Another fact that depicts the status of vascular surgery in Japan is the fact that among 80 medical schools that exists in Japan, only four including Jikei University possesses a Professor of Vascular Surgery position. In the remaining 76 medical schools, vascular surgery is performed by surgeons belonging to the Department of Cardiovascular Surgery. Naturally, mainstream of such departments is the care of cardiac disease and peripheral vascular therapy, which is pushed to the "periphery." This set-up has been responsible for the lack of dedication to vascular disease and its care, and has allowed non-vascular surgeons to perform the care that would be done by a vascular surgeon in the US.

The tide is changing. Vascular surgeons are poised to take center stage. The first commercially available stent graft for abdominal aortic aneurysms (AAA) was approved in Japan in 2006 (lagging the EU by 9 years, and US by 7 years), for thoracic abdominal aneurysms (TAA) in 2008, and carotid stents in 2007. These advanced endovascular devices will be strong ammunition for the vascular surgeon. In addition, the Japanese population is aging rapidly with the baby boomer generation entering the atherosclerotic age. Increased penetration of advanced imaging modality such as MR and CT coupled with the increase in recognition of vascular disease, owing to the mass media campaign, will lead to higher demand for quality vascular care.

Finally, the fact that the 50th Congress of the International College of Angiology will be held in Tokyo will nail this change in the tide, and the "beginning of the beginning" for vascular surgery to become a mainstream specialty has just begun in Japan.

Monday, July 21, 2008

9:50 AM – 10:30 AM
Seventh Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Professor Hans J. Hachen Memorial Lecture
Carotid Stents—Today and Tomorrow

Edward B. Diethrich, MD, FICA, *Medical Director and Founder, Chief, Cardiothoracic and Vascular Surgery, Arizona Heart Institute and Hospital, Translational Research Center, Phoenix, Arizona.*

Purpose
To describe the present and future uses of endovascular stents.

Discussion
Techniques used in cardiac and vascular surgery have undergone dramatic changes over the past two decades with the introduction of angioplasty and stenting. Although coronary artery bypass was the economic driver of cardiac surgery for some 20 years, the introduction of stent technology in the 1980s changed the emphasis on open surgical intervention forever. Surgeons who once relied exclusively on the scalpel and the suture have adapted an entirely new skill set. We have now entered the era of bioconvergence in which drug-eluting stents, and even bidodegradable stents are being developed—these are likely to have even greater impact on the future of open and endovascular procedures. Technology will continue to evolve, and the metamorphosis is by no means complete. Advances in biotechnology will influence physicians in every aspect of patient care. In years to come, gene therapy will change how atherosclerosis is treated—perhaps even to the extent that stent therapy becomes unnecessary.

Conclusion
Stent technology has revolutionized cardiac and vascular surgery. Further advancement—including new pharmaceutics and gene therapies—is certain to change the face of treatment in ways we cannot even begin to imagine.

Monday, July 21, 2008

10:45 AM – 12:00 Noon
Eighth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Peripheral Vascular Surgery—Arterial System

10:45 AM **Individual Revascularization for the Treatment of Multi-Level Arterial Occlusive Disease of the Lower Extremity**

Xiansheng Zhang, MD; Zhong Gao Wang, MD, PhD, FICA; *Department of Vascular Surgery, The First Hospital of Peking University, Beijing, China.*

Purpose
Multilevel arterial occlusive disease is often the main cause of critical ischemia of the limb. The aim of this study was to determine the clinical effect of sequence and cross bypass, thromboendarterectomy or combined with an endovascular procedure for multilevel arterial occlusive disease of the lower extremity, in order to investigate the credible treatment for multilevel arterial occlusive disease of lower extremities.

Materials and Methods
Between April 2004 and July 2005 a total of 11(14 limbs) patients underwent sequence and cross bypass, thromboendarterectomy, or combined with an endovascular procedure. Among of them, 10 were male and 1 female, ranging in age from 62-79 years (70.5 years). These patients included 8 cases with intermittent claudication (Fontaine stage II), 3 cases with rest pain (Fontaine stage III), and 1 case with gangrene of the toe (Fontaine state IV). Color Doppler ultrasound showed 14 lower limbs were diagnosed with multilevel arterial occlusive disease and the pre-operation ABI was (0.36±0.11). Lower limb DSA arteriography showed 3 cases with bilateral iliac artery stenosis, extra-iliac artery occlusion and bilateral superficial femoral artery occlusions extra-iliac artery occlusion and bilateral superficial femoral artery occlusions, 1 case with right common iliac artery stenosis, extra-iliac artery occlusion, and bilateral superficial femoral artery occlusions, 8 cases with unilateral extra-iliac artery stenosis and superficial femoral artery occlusions. Post-operative tests included angiography, Color Doppler ultrasound, and ankle/brachial index (ABI) to observe the cumulative patency rate following surgery.

Results
The follow-up period was from 3 to 26 months (mean 14.5 months). Mortality in the whole group was 0%. In all patients, symptoms of intermittent claudication and rest pain disappeared. ABI in patients improved from (0.36±0.11) before to (0.89±0.13) after the procedure ($P<0.01$). The overall limb salvage rate was 100% (14/14). Angiography was performed from 3 to 280 days after operation, and the overall primary graft patency rate was 92.86% (13/14).

Conclusion
Sequence and cross bypass, thromboendarterectomy or combined with an endovascular procedure for the treatment of multilevel occlusive disease of lower extremity was effective, less invasive, and safe.

Monday, July 21, 2008

10:55 AM **Local Infiltration Anesthesia for Arterial Bypass in the Lower Extremity**

Xiansheng Zhang, MD; Zhong Gao Wang, MD, PhD, FICA, FSVS; *Department of Vascular Surgery, The First Hospital of Peking University, Beijing, China.*

Purpose
The majority of patients with arteriosclerosis of the lower extremity have associated preoperative complications of the heart, lung, and brain. These high-risk complications may be related to the choice of anesthesia used. To investigate an ideal anesthetic which would provide good analgesia, have few complications, and provide an adequate surgical environment, local infiltration anesthesia for artery bypass in the lower extremity were performed in 81 cases with occlusive disease of the lower extremity.

Materials and Methods
Seventy-nine patients with an occluded superficial femoral artery and 2 iliac artery occlusions were diagnosed by angiography. The patients with lifestyle-limiting intermittent claudication or rest pain were selected. Lidocaine local infiltration anesthesia was employed. The operations included 2 femoral-femoral, and 79 above knee femoral-popliteal bypass grafts. ASA grade and complications were assessed before the operation. Anesthetic dose, VAS and BCS grades, perioperative morbidity, and vital signs were recorded.

Results
All patients tolerated the procedure well. The operating environment was excellent. The mean dosage of lidocaine was 389mg (0.22%). There was no perioperative morbidity or mortality and the graft patency rate was 100%.

Conclusion
Lidocaine local infiltration anesthesia could provide excellent perioperative analgesia and a satisfactory surgical environment for artery bypass grafts in the lower extremity. This technique is easy to perform and further reduces the complications of anesthesia, especially in those high-risk and senile patients.

Monday, July 21, 2008

11:05 AM **Treatment for Non-Specific Aorto-Arteritis—25-Years of Experience**

Anatoly V. Pokrovsky, MD[1]; Dan N. Vasily, MD[2]; Andrey E. Zotikov, MD[1]; Galina I. Kuntsevitch, MD[2]; Elena A. Burtseva, PhD[2]; Vladimir A. Kulbak, MD[1]; *[1]Department of Vascular Surgery and [2]Diagnostic Ultrasound, A.V. Vishnevsky Institute, Moscow, Russia.*

Purpose
The aim of our investigation was to analyze the treatment results of patients for nonspecific aortoarteritis.

Materials and Methods
From November 1983 to January 2008, 229 patients were examined and treated for nonspecific aorto-arteritis in the A.V. Vishnevsky Institute of Surgery, Moscow, Russia. Of the 229 patients, 39 were male and 190 female. The laboratory signs of inflammation were discovered in 55.5% of the cases. In these patients, we used intravenous injections of corticosteroids and cyclophosphan. Methotrexate therapy was used as maintenance chemotherapy. We operated on 120 patients and carried out 140 operations. Fifty-five patients underwent reconstruction of the brachiocephalic arteries, 47 underwent reconstruction of the thoracoabdominal aorta, and 29 underwent solitary reconstructions of the renal arteries. In the cases with combined lesions, 11 patients underwent multiple-stage operations.

Results
In the cases with brachiocephalic artery reconstruction, extra-thoracic operations (30 cases) were considered to be the surgery of choice. Trans-thoracic operations were carried out in 26 cases. We had no post-surgical mortality following the extra-thoracic and trans-thoracic one-side reconstructions. Following aorta-bilateral carotid graft replacement in 12 patients, 4 had hemorrhagic stroke, 3 of which were fatal. We did 47 interventions on the thoracoabdominal aorta, of which 39 cases had reconstruction of the thoracoabdominal aorta and its branches. The post-surgical mortality following reconstruction of the thoracoabdominal aorta was 8.5%. There were no post-surgical complications or mortality following renal artery reconstruction.

Conclusion
Surgery is indicated for patients suffering from nonspecific aorto-arteritis with vaso-renal hypertension, stenosis of the descending aorta, occlusion, and critical stenosis of the common carotid arteries. Surgery should be performed in the remission stage. Surgery for patients with combined lesions should be split into stages. Staged reconstruction of the carotid arteries is indicated for patients with bilateral lesions.

Monday, July 21, 2008

11:15 AM **Surgical Treatment of Thromboangiitis Obliterans (TAO) with Arteriosclerotic Occlusion (ASO)**

Yongquan Gu, MD; Jian Zhang, MD; Lixing Qi, MD; Lianrui Guo, MD; Yingfeng Wu; Zhong Gao Wang, MD, PhD, FICA; *Department of Vascular Surgery, Xuan Wu Hospital, Capital Medical University, Beijing, China.*

Background
Combined limb ischemia from TAO and ASO is not common and more difficult to treat, so it is valuable to share the ideas and results of treatment.

Purpose
To explore the effect of surgical treatment of lower limb ischemia due to combined thromboangiitis obliterans (TAO) and arteriosclerosis obliterans (ASO).

Materials and Methods
Clinical data of 6 patients were retrospectively analyzed. All the patients were male with a mean age of 45.3 (37-53) years. All patients had rest pain, three patients had foot ulcers, and one had toe gangrene. All patients experienced prior failed surgical operations. Three patients received aortic and/or common iliac artery endarterectomy combined with PTFE graft bypass to the deep femoral artery, below knee popliteal artery and saphenous vein graft bypass to the tibial artery. One patient received aortic thrombectomy, endarterectomy, aorto-femoral and femoropopliteal PTFE graft bypass. One patient with left graft thrombosis following aorto-bifemoral arterial bypass using a PTFE graft prior to admission, underwent left PTFE graft thrombectomy via the left groin and left deep femoral artery endarterectomy followed by femoropopliteal arterial bypass. One patient underwent left common femoral artery endarterectomy with right–left femoro-femoral arterial bypass using PTFE graft and femoro-tibial arterial bypass using in situ saphenous vein graft.

Results
One patient who underwent aorto-iliac thrombectomy and endarterectomy with aorto femoro-popliteal tibial arterial bypass suffered from a graft thrombosis several hours post-operatively and an emergency thrombectomy with distal posterior tibial arteriovenous fistulization was performed. Rest pain was relieved in all patients. All grafts were patent on discharge. The mean ankle-brachial index (ABI) increased from 0.31 to 0.82. The foot ulcer reduced in three patients. All six patients were followed-up from 1 to 12 months, with a mean of 6.5 months. Three foot ulcers healed in the meantime. The groin incision of the patient who received the redone graft thrombectomy was infected after 3 months of operation, and there was no change in 3 months following a dressing change. In this patient, the PTFE graft had to be removed and eventually a below knee amputation was performed. Other grafts were patent with no recurrent symptoms during the follow-up period.

Conclusion
Although it is difficult to treat combined limb ischemia of TAO and ASO, satisfying results could be obtained when proper surgical procedure is recruited.

Monday, July 21, 2008

11:25 AM **Infectious Complications in Arterial Reconstructive Surgery**

Aurel Andercou, MD, FICA, *Professor of Surgery; Co-Chairperson, Membership Committee, International College of Angiology; Editor, International Journal of Angiology;* Octavian Andercou, MD; Aurel Mironiuc, MD; Bogdan Stancu; Iosif Zagrean, MD; Otilia Barbos, MD; *University of Medicine and Pharmacy "Iuliu Hatieganu", Second Surgical Clinic, Cluj Napoca, Romania.*

Purpose
Surgical infections after peripheral revascularizations represent one of the most serious complications in vascular surgery. Usually, synthetic graft material is well tolerated by the organism, but in particular situations, they can lead to severe infections, difficult to treat. The aim of this study is to analyze the condition of appearance of superlative complications and the effect on the results of revascularizations, a study carried out in the Second Surgical Clinic in Cluj Napoca, Romania.

Materials and Methods
The study is a retrospective, between 2003 and 2007. We included all patients who underwent revascularization of the lower limb. We analyzed all major risk factors; age, gender, smoking, associated diseases (e.g., hypertension, diabetes, dislipidemia), as well as the minor risk factors; disorders of coagulation, renal insufficiency, and obesity. We also analyzed the type of bypass performed (aortic or peripheral) and the type of graft used (venous or synthetic Dacron or PTFE).

Results
During the period we studied, we performed 150 reconstructions of the lower limbs. The most frequently identified complications were; hematomas, seromas, local wound infections, graft infection, and anastomotic pseudoaneurysm. Treatment of complications were both medical with a large spectrum of antibiotics, and surgical consisting of graft excision and extra-anatomic bypass reconstruction or arterial ligature followed by above knee amputation. On large patient studies, infectious complications can vary between 13 and 20%, and an amputation rate of up to 30%. Most frequent germs are staphylococcus aureus, staphylococcus epidermidis, Escherichia coli, or pseudomonas.

Conclusion
Treatment of infections following arterial reconstructions is of the utmost importance. Infected grafts need to be removed, and limb salvage can be only be obtained through an extra-anatomic bypass procedure or using an allograft. Intensive use of large spectrum antibiotics and proper surgical technique can prevent graft infections.

Monday, July 21, 2008

11:35 AM **Evaluation of Color Duplex Scanning (CDS) in the Diagnosis of Pudendal Neuralgia by Pudendal Nerve Entrapment (PNE), Compared to Electromyography (EMG), Diagnostic Score (DS) and Surgical Outcomes—A Prospective Study of 96 Patients**

Murielle Mollo, MD; E. Bautrant, MD; *Department of Pelvi-perineal Rehabilitation, Private Medical Center "L'Avancée", Aix-en-Provence, France.*

Purpose
To evaluate the detection capacity of color Duplex scanning (CDS), compared to a whole of Neurologic Criterion (NC) based on digital score (DS), electromyography (EMG) testing and results of surgery, in the diagnosis of pudendal neuralgia by pudendal nerve entrapment (PNE).

Materials and Methods
A consecutive series of 96 unselected patients, both evaluated by CDS and by NC. The same operator, unaware of NC, performed CDS examinations. A practitioner who was unaware of CDS findings determined NC. Peak Systolic Velocity (PSV) and Acceleration Time (AT) were CDS vascular criterion. Inadequate examinations were not repeated, nor drawn out from analysis.

Results
Of the 96 patients, 8 received surgery for this indication. Of the remaining 88, the diagnosis failed for 5 subjects when using NC, while it could be correctly established by CDS. Thus, the comparative study was performed on 83 patients. Of these 166 internal pudendal arteries explored by CDS, 163 were visualised in their whole course, leading to 98% feasibility for complete examination. Of 67 PNE identified by NC, 60 functional artery stenosis by entrapment were detected by CDS, leading to an 89.6% sensitivity and a 67.4% specificity.

Conclusion
Currently, there is no gold standard which allows us to diagnose with certainty, pudendal neuropathy by PNE. CDS vascular examination, which is a non-invasive technique, demonstrates high diagnostic value to confirm PNE. In this study, we could determine new criteria for CDS diagnosis, which is the ratio between internal pudendal artery PSV, measured before and after ligamental grip and Alcock's canal. These objective criteria appeared to be very interesting in this indication, but needs to be validated by further studies.

Monday, July 21, 2008

11:45 AM **Primary Varicose Veins—Scientific Reason for High Ligation and Stab Phlebectomy Combined with Sclerotherapy vs. Blind Stripping as Treatment—25-Years Experience**

Dinker B. Rai, MD, FACS, FICA, FRCS(C); *Editor, International Journal of Angiology; Visiting Associate Clinical Professor of Surgery, SUNY Downstate Medical Center, Brooklyn, New York; Chief of Vascular Surgery, Interfaith Medical Center, Brooklyn, New York.*

Purpose
To study the effects of sapheno-femoral valve incompetency (SFVI) on the great saphenous vein (GSV) and its tributaries by phlebography and histopathological sections.

Materials and Methods
Eighty-three patients with 104 limbs presented with severe varicosity. They all had SFVI (RAI Gr.I). Total of 152 procedures were done; 99 high ligations of the GSV (20 bilaterally), and 53 stab phlebectomies (4 SSV).

Evaluation included tourniquet test (Trendlenburg), non-invasive venous studies and descending phlebography. Histopathological sections of the GSV of 20 patients and their dilated tributaries of 7 patients were studied in detail.

Results
Descending phlebography showed non-dilation of the main trunk of the GSV and varicosity of its tributaries. Histopathological sections showed generalized hypertrophy and thickening of the wall of GSV, due to an increase in collagen tissue, fibroblasts and smooth muscle tissue. Tributaries showed varicosity due to adjacent areas of hypertrophy and atrophy. Atrophic area showed dilatation resulting in varicosity.

Conclusion
Detailed histopathological findings provided the scientific reason resulting in a paradigm shift in the treatment of varicose veins. This will be discussed in detail in this presentation. Those patients presenting with varicose veins secondary to SFVI were treated by high ligation of the GSV and sclerotherapy of the distal varicose veins. Patients who had intractable ulcers required deep vein valve reconstruction, and were excluded.

Monday, July 21, 2008

12:00 Noon – 1:00 PM
Ninth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

EVAR and TAA—Current Status and Future Horizons

A Special Luncheon Lecture

Edward B. Diethrich, MD, FICA, *Medical Director and Founder, Chief, Cardiothoracic and Vascular Surgery, Arizona Heart Institute and Hospital, Translational Research Center, Phoenix, Arizona.*

Purpose
To describe the present and future uses of EVAR technology for TAA.

Discussion
Thoracic aortic lesions are often life-threatening and difficult to treat. Open surgical procedures are associated with significant morbidity and mortality. In recent years, endovascular treatment has been used with good success to treat thoracic aortic aneurysms (TAAs) and decrease complications associated with traditional open surgery. While some aneurysmal disease is amenable to intervention with endovascular techniques alone, complex lesions may require hybrid procedures that include endovascular and modifications of open surgical techniques. In high surgical-risk patients and elderly patients not able to tolerate extracorporeal circulation and profound hypothermic circulatory arrest, there are several hybrid procedures that may prove useful. Debranching of the supra-aortic trunks permits adequate landing zones for an endoluminal graft while providing cerebral flow after aneurysm exclusion. This technique can be applied to ascending aortic and arch aneurysms that require coverage of 1 or 2 supra-aortic vessels to permit adequate landing zones. The concept of antegrade delivery of an endoprosthesis across the aortic arch and into the descending thoracic aorta has proven successful as well, overcoming many of the limitations of retrograde femoral artery delivery; we have also used a rerouting procedure to completely resolve the arch and descending dissection off pump. At present, the devices currently available for endovascular treatment of TAAs may be too large for optimal use. In the future, modifications that yield lower profile equipment will improve the success of endovascular intervention in TAAs.

Conclusion
We anticipate variations in techniques and equipment will expand the prospects for treating aortic pathologies with minimally invasive interventions and possibly eliminate the need for open surgical intervention in this arterial region.

Monday, July 21, 2008
1:15 PM – 2:15 PM
Tenth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Live Case Presentations from the OR
AAA and Iliac Stents

Takao Ohki, MD, PhD, FICA, *Professor of Surgery, Albert Einstein School of Medicine, New York, New York; Secretary General and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Editor, International Journal of Angiology; Chairman, Department of Surgery and Chief, Department of Vascular Surgery, Jikei University School of Medicine, Tokyo, Japan.*

Monday, July 21, 2008
2:30 PM – 3:00 PM
Eleventh Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Evidence Based Management of Diabetic Foot Wounds Using Negative Pressure Wound Therapy

A Special Lecture

Bauer E. Sumpio, MD, PhD, FACS, FICA, *Professor of Surgery; Co-Chairperson, Scientific Committee, International College of Angiology; Senior Editor, International Journal of Angiology; Chief, Department of Vascular Surgery, Yale University School of Medicine, New Haven, Connecticut.*

Aging population, obesity, and diabetes drive the rapid increase in the incidence of chronic wounds. Clinicians are also faced with an array of complex wounds from military and domestic trauma as well as complex surgical procedures. Better, cost-effective methods of efficiently closing difficult wounds will reduce the pain and amputation rates associated with complex wounds. Topical growth factors have long been considered a promising method to accelerate wound healing but currently have a rather limited role clinically with only one product available for clinical use in the US. Other methods such as bioengineered skin substitutes have been successful in certain defined areas of wound healing, but most wound care products in use today are based on the principle of moist wound healing.

Vacuum assisted closure (VAC) device was described in 1997. The device consists of a vacuum pump, a canister with a connecting tube, open pore foam, and a semi-occlusive dressing. Since the original report, over 500 peer-reviewed papers in the medical literature have been published describing its effect in a number of wound types. Most of the reports have been case series and retrospective reviews with prospective randomized studies being published in the areas of diabetic foot infection, pressure sores, and skin grafts. The small number of properly performed randomized studies makes it difficult for policy makers to assess efficacy in actual patients. The terminology is also somewhat confusing, using descriptors such as negative pressure wound therapy (NPWT), topical negative pressure (TNP) or sub-atmospheric wound therapy (SAWT). These terms do not emphasize the importance of the wound-foam interface and do not distinguish the VAC device from other suction wound therapies. I will review the current literature on the utility of VAC in the management of diabetic foot ulcers and briefly discuss current knowledge regarding the mechanism of action of the VAC device.

Monday, July 21, 2008
3:15 PM – 3:30 PM
Twelfth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Patient Safety in Vascular Surgery

A Special Lecture

Thanjavur S. Ravikumar, MD, FACS, *Chairman, Department of Surgery, North Shore University Hospital, Manhasset, New York and Long Island Jewish Medical Center, New Hyde Park, New York.*

Monday, July 21, 2008

3:30 PM – 4:45 PM
Thirteenth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Coronary Artery Disease and Hypertension

3:30 PM **A Critique of Statin Effects, Benefits, and Problems**

Thomas F. Whayne, Jr., MD, PhD, FICA, *Professor of Medicine(Cardiology); Co-Chairman, Membership Committee, International College of Angiology; Division of Cardiovascular Medicine, Gill Heart Institute, University of Kentucky, Lexington, Kentucky.*

Perhaps aspirin was the first blockbuster medicine but for the modern era of cardiovascular (CV) medicine, statins represent the major blockbuster medical treatment. The practice of state-of-the art cardiology depends on these incredible compounds with many intriguing effects. Five key placebo-controlled trials proved the benefit of statins in reducing myocardial infarctions, coronary heart disease (CHD) mortality and to some extent, overall mortality. Nevertheless, much was left to be understood and accomplished since approximately 60% of patients treated with statins did not show a beneficial reduction in CV events. Without question, the gold standard of statin benefit is the resultant reduction of the plasma low density lipoproteins (LDL). This clinical benefit is uncontested. In addition, the apparently beneficial pleiotropic effects of statins provoke much interest, the study of these pleiotropic properties such as anti-inflammatory effects, inhibition of thrombosis, inhibition of enzymes related to atherogenesis, favorable modulation of immune function, increased fibrinolysis, improved endothelial motor dysfunction, and increased nitric oxide appears to be of clinical interest. However, clinical assessment of these beneficial effects is limited and only high sensitivity C-Reactive protein and phospholipase A-2 measurements have apparent current value for the practicing clinician.

Prescription of a statin can now be considered semi-urgent in acute clinical coronary artery events involving the CHD patient. The acute coronary syndrome is a good example, where failure to continue a statin has been established as detrimental to the patient, and the evidence of benefit from starting a statin in a patient not taking one early in the clinical course appears to be valuable. The goal for any high risk CV patient is to attain a level of LDL less than 70 mg/dl and statin use offers the best chance of achieving this goal. The high risk patient can be defined as anyone who has sustained previous CV events, peripheral vascular, or CHD in origin, anyone with multiple CV risk factors and any patient with diabetes mellitus. Although atherosclerotic plaque regression has been shown to be a reality with aggressive LDL reduction, the major benefit of achieving marked reduction of LDL appears to be atherosclerotic plaque stabilization so that plaque rupture is avoided. The reason is that such plaque rupture is the major cause of acute intravascular thrombosis, resultant artery obstruction and thereby the causation of severe or fatal clinical events.

Although statins have been billed as wonder drugs and as perfectly safe by their pharmaceutical company manufacturers, there are problems with their usage not accurately covered in promotional literature and some sponsored clinical studies. There are even a few physicians and pharmaceutical companies who would like to promote the availability of statins over-the-counter but this appears to be a bad idea and one that would be dangerous to many unsophisticated patients, especially since even patients with prescription medications fail to take their medications exactly as directed in a high percentage of documented cases. Various studies have shown an incidence of statin-related myalgia up to 9%. For severe resultant rhabdomyolysis, an assessment from 2002 showed an incidence of 0.15 deaths from rhabdomyolysis per 1.0 million statin prescriptions. Furthermore, this rhabdomyolysis can develop very rapidly within a very few weeks or less. One pharmaceutical company has even claimed that the higher approved dose of their statin has no more complications than the lowest recommended dose, a claim not substantiated by data submitted for the FDA approval of any statin and not by clinical studies with more than short-term follow-up. The additional use of ezetimibe allows a statin to remain at a safer lower dose while still achieving marked reduction of the LDL. The benefit of statins to the high risk CV patient far outweighs any risk; however such potent medications must be respected, must be used with great care and the patient with possible symptoms and laboratory results of complications deserve attention.

Statins have also been postulated to help in the control of hypertension, arrhythmias, and congestive heart failure. Cholesterol ester transferase protein inhibitors may complement statins; although torcetrapib increased mortality, anacetrapib appears safe in preliminary studies. All of these issues and mention of the possible place of some related alternative medications in the management of the high risk CV patient will be discussed.

Monday, July 21, 2008

3:45 PM **Device Therapy for Intractable Hypertension—A Concept on Trial**

Sibu P. Saha, MD, MBA, FICA, *Professor of Clinical Surgery; Member, Board of Directors and President-Elect, International College of Angiology; Chairman, Membership Committee, International College of Angiology; Editor, International Journal of Angiology;* Victor A Ferraris, MD, PhD, FICA, *Editor, International Journal of Angiology;* Steven R. Steinhubl, MD; Debabrata Mukherjee, MD, FICA, *Editor, International Journal of Angiology*; *Department of Surgery, University of Kentucky, Lexington, Kentucky.*

Purpose
Rheos baroreflex hypertension therapy is currently undergoing FDA approved clinical trial. The purpose of this report is to inform our members about the concept and technique of this evolving therapy.

Materials and Methods
Baroreceptors are located mainly at the carotid sinus. The Rheos System is designed to lower blood pressure by electrical stimulation of the baroreceptors. The operation involves placement of lead on both carotid sinus; connected to a pacemaker like device; implanted in a pre-pectoral pouch. When the system is activated, signals are sent to the central nervous system. The brain responds to this perceived rise in blood pressure by reducing heart rate, diuresis, and vasodilation.

Conclusion
Neuromodulation may play a role in the management of Intractable Hypertension. This trial will determine that in the new future.

Monday, July 21, 2008

3:55 PM **The Clinical Significance of Conditions Presenting with ECG Changes Mimicking Acute Myocardial Infarction**

Malka Yahalom, MD, DSc, FICA[1,3], *Co-Chairperson, Membership Committee, International College of Angiology; Editor, International Journal of Angiology;* Mark Gellerman[1]; Alice Wishniak[1]; Marc Brezins[1]; Nancy Fridman[1]; Alice Vazan[1]; Maher Nasser[2]; Faris Nassar[2,3]; Nathan Roguin, MD[1,3]; *[1]Department of Cardiology, Western Galilee Hospital, Nahariya, Israel; [2]Department of Internal Medicine E, Western Galilee Hospital, Nahariya, Israel; [3]Rappaport Faculty of Medicine, Technion-IIT, Haifa, Israel.*

Purpose
The electrocardiogram (ECG) is of critical importance in the diagnosis of acute myocardial infarction (AMI). Clinical conditions such as acute pericarditis, esophageal rupture, subarachnoid hemorrahage, hypothermia and pneumothorax result in ECG changes that include ST elevation and T wave inversion. The purpose of this report is to increase the awareness of those non-coronary syndromes, with ECG abnormalities mimicking AMI, and thus avoiding unjustified thrombolytic therapy or intervention procedures.

Materials and Methods
We present five patients with different clinical conditions and with ECG changes mimicking AMI:

I. A 62-year old female patient after epileptic seizures and pathological EEG pattern. The ECG was suggestive of evolving AMI. Troponin I and coronary angiography were normal.

II. An 18-year old patient who suffered acute rheumatic perimyocarditis, repetitive ventricular fibrillation and ECG changes mimicking AMI, while coronary arteries were patent.

III. A 35-year old schizophrenic patient who was admitted to CCU with severe hypothermia and shock, bradycardia and ST-T changes mimicking AMI.

IV. A 78-year old female with a history of colon cancer, was admitted six days following 5FU chemotherapy, and with ECG changes mimicking AMI, and with no clinical or biochemical evidence of AMI.

V. A 57-year old male was admitted to CCU after anaphylactic shock following a bee-sting that was treated with adrenaline and corticosteroids. His ECG demonstrated a transient ST-elevation in the anterior wall, and with no clinical nor biochemical evidence of AMI. Cardiac CT demonstrated normal coronary arteries.

Conclusion
We conclude that prompt and correct diagnosis based on clinical data and serial ECG is crucial in patients with conditions that may be confused with AMI. Otherwise these patients are liable to receive unjustified thrombolytic therapy and unnecessary intervention procedures.

Monday, July 21, 2008

4:05 PM **The Heme Oxygenase System Attenuates Inflammatory and Oxidative Insults in Mesenteric Arterioles of Spontaneously Hypertensive Rats and Deoxycorticosterone Acetate Hypertension**

Joseph Fomusi Ndisang, PhD, FICA, *Assistant Professor;* Ashok Jadhav; *Department of Physiology, University of Saskatchewan, Saskatoon, Canada.*

Background
Aldosterone is a mineralcorticoid hormone produced in response to angiotensin-II, and like angiotensin-II, stimulates inflammation, oxidative stress, and fibrosis by activating NF-□B and AP-1. Recent evidence shows that aldosterone stimulates phospholipase C (PLC) that in turn activate NF-□B and AP-1. In physiological entities, the heme oxygenase (HO) system is amongst the protective mechanisms triggered to combat tissue insults. The effect of the HO system on aldosterone-PLC pro-hypertensive axis is not fully understood.

Purpose
In the present study, we report a sustained effect of the HO system on aldosterone-PLC signaling in deoxycorticosterone acetate (DOCA-salt) hypertension, a model of aldosteronism, and spontaneously hypertensive rat (SHR), a genetic model of human essential hypertension.

Materials and Methods
Blood pressure was measured by tail-cuff plethysmography while mRNA was assessed by quantitative real-time RT-PCR, and protein expressions by Western blot. HO activity was measured by spectrohometric assay, cGMP and IP_3 by radioimmunoassay (RIA), while PLC, aldosterone by EIA and $[Ca^{2+}]i$ using Fluo 3-acetoxymethyl ester. In addition, histology and immunohistochemical assays were done.

Results
The administration of the HO inducer, hemin, normalized and maintained physiological blood pressure in adult SHR (214.5±3.5 to 125.7±3.4 mmHg, n=14, $p<0.01$) and DOCA-salt hypertensive rats (210.8±4.7 vs.126.9±3.1 mmHg; $p<0.01$, n=14) for a month, but had no effect on age-matched normotensive Wistar-Kyoto or Sprague Dawley strains. The anti-hypertensive effect of hemin was accompanied by enhanced HO activity and cGMP-PKG signaling, whereas plasma levels aldosterone were reduced. Similarly, attenuated levels of PLC activity, inositol triphosphate (IP_3), and resting intracellular calcium in the mesenteric arterioles (MA) were observed in hemin treated-animals. In addition, we observed reduced expression of AP-1 and NF-κB, which were interestingly, accompanied by enhanced superoxide dismutase activity and the potentiating of total anti-oxidant capacity. Furthermore, reduced expression of proteins of remodeling and activators of extracellular matrix like the one fibronectin and TGF-β were detected in the MA of hemin-treated animals. Thus, hemin therapy may preserve the functional integrity of vascular tissues by abating aldosterone-induced oxidative and inflammatory insults via the suppression of AP-1 and NF-κB transcription factors besides attenuating vascular remodeling and hypertrophy.

Conclusion
Collectively, our results indicate that the concomitant depletion of aldosterone, PLC-IP_3 activity, resting intracellular calcium and the corresponding decline of inflammatory, oxidative, and extracellular matrix proteins in resistance vasculature of SHR and DOCA-salt rats may account for the enduring anti-hypertensive and protective effects.

Monday, July 21, 2008

4:15 PM **Vital Exhaustion Syndrome Following Acute Myocardial Infarction—Clinical and Nursing Aspects**

Orly Kolpak, RN, MA[1,2]; Malka Yahalom, MD, DSc, FICA[1,3], *Co-Chairperson, Membership Committee, International College of Angiology; Editor, International Journal of Angiology;* N. Roguin, MD[1,3]; Malca Ehrenfeld, RN, PhD[2]; Talma Kushnir, PhD[2]; *[1]Department of Cardiology, Western Galilee Hospital, Nahariya, Israel; [2]Department of Nursing, Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel; [3]Rappaport Faculty of Medicine, Technion-IIT, Haifa, Israel.*

Background
Myocardial Infarction is a sudden, life-threatening episode, which causes patients extreme stress. Vital Exhaustion (VE), a psychosocial syndrome that appears following myocardial infarction (MI), is characterized by loss of energy, extensive exhaustion, passivity, and irritability.

Purpose
To identify the causes of the onset of VE during the early stages of hospitalization following myocardial infarction, and assess the influence of VE on the patients' physical and social adjustment.

Materials and Methods
The study included 62 men hospitalized after myocardial infarction, aged 35-65, married, working, Hebrew readers, and speakers. They responded to a self-report questionnaire, which assessed VE, depression, perceived resource loss and social support. Physical and psychological adjustment was assessed 4 weeks after discharge.

Results

A significant positive correlation (r=0.693) was found between VE and depression. Perceived resource loss and VE were unrelated. Significant negative correlations were found between VE and social support as well as physical and social adjustments. The demographic details that predicted VE were young age, little education, living with children, being non-Jewish, blue-collar jobs, and working in unwanted jobs.

Conclusions
This is the first study in Israel of VE following MI. The findings undoubtedly underscore the need of addressing the syndrome of VE in these patients. The study also investigated the parallels and variations between Vital Exhaustion and the concept of depression. This research study could potentially contribute a great deal to the growth of welfare in hospitals, in nursing education as well as to research by showing that any intervention that might lessen the degree of Vital Exhaustion will improve the physical and social adjustability process of the myocardial infarction patient.

Monday, July 21, 2008

4:25 PM **Effects of Age, Gender, and Smoking on Ankle-Brachial Index in a Finnish Cardiovascular Risk Population**

Pertti Aarnio, MD, PhD, FICA[1], *Professor of Surgery; Member, Board of Directors, International College of Angiology; Co-Chairperson, Scientific and Membership Committees, International College of Angiology; Senior Editor, International Journal of Angiology;* Kari Syvänen, MD[1]; Pekka Jaatinen, MD, PhD[2]; Päivi Korhonen, MD[3]; *[1]Department of Surgery, Satakunta Hospital District, Pori, Finland; [2]Department of Medicine, Satakunta Hospital District, Pori, Finland; [3]Central Satakunta Health Federation of Municipalities, Pori, Finland.*

Purpose
The meaning of measuring ABI as a screening method is based on the fact that majority of patients with PAD are asymptomatic. In this present study we investigated effects of gender, age and smoking on the ankle-brachial index (ABI) in a Finnish cardiovascular risk population.

Materials and Methods
All men and women aged 45 to 70 years living in a rural town Harjavalta (7700 inhabitants) in Western Finland were invited to participate in a population survey (Harmonica study). Patients with previously known diabetes or vascular disease were excluded. An invitation to the project was mailed to 2856 persons. From these subjects a cardiovascular risk population was screened. All the data was available from 1028 persons.

The ABI was the ratio between posterior tibial or dorsalis pedis artery and brachial artery pressures. We used question formulas to detect current smoking and medical history. Only the current smoking-status was taken into account.

Results
The mean ABI for the whole study population was 1.10 (0.56-1.64). Current smokers had lower ABI 1.06 ($p = <0.001$). We found no statistically significant difference in ABI values between different age groups although majority of patients with ABI < 0.9 were over 60 years of age. There was no statistically significant difference in ABI between genders.

Conclusion
As previously shown also this study indicates the crucial effect of smoking in the development of PAD. We did not find any statistically significant differences between different age groups but the tendency was towards lower ABI in oldest age groups. Gender did not effect on ABI.

Monday, July 21, 2008

4:45 PM – 5:55 PM
Fourteenth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Peripheral Vascular Surgery—Venous System

4:45 PM **Surgical Management of Complicated Lesions in the Inferior Vena Cava**

Li Zhen, MD; Zhong Gao Wang, MD, PhD, FICA; Bao-zhong Yang, MD; *Department of Vascular Surgery, Second Artillery General Hospital of PLA and Vascular Institute; Xuan Wu Hospital, Capital University of Medical Science, Beijing, China.*

Purpose
To explore the surgical treatment of complicated lesions in the inferior vena cava (IVC) and review the literature.

Material and Methods
Between September 2006 and November 2007, eight patients with complicated lesions in the IVC were treated, including six male and three female. The age range was from 45-73 with a mean of 57 years. Seven patients had primary tumors or metastasis in the IVC. Two patients had constriction of the IVC with thrombosis formation. In four of them, the tumor in the IVC extended into the right atrium. Chest roentgenography, enhanced computed tomography, or magnetic resonance angiography (MRA) was used to establish diagnosis or to evaluate the presence of metastasis in other parts of body, and to study the feasibility for tumor resection.

Results
All tumors were removed under blood auto-transplantation or extracorporeal circulation, when the lesions invaded the right atrium. Their operative and post-operative course was uneventful and all patients were discharged. Follow-up was made 2-16 months after surgery and found all patients are doing well. The pathological diagnosis was leiomyosarcoma of the IVC in 3, renal carcinoma metastasis into the IVC in 3 and germ cell tumor in one, suspected carcinoma with origin unknown in one, and primary pleomorphic malignant fibrous histiocytoma (MFH) of the IVC in one, the last was the first finding by us to the best of our knowledge.

Conclusion
The most difficult lesions in the IVC are still feasible for surgical removing so long as remote metastasis is not present, a good team can be organized, and an efficient blood auto-transfusion can be installed. Long-term observation is mandatory.

Monday, July 21, 2008

4:55 PM **Significance of Severing Insufficient Perforating Veins in the Treatment of Varicose Veins by Sclerotherapy**

Naoki Haruta, MD, FICA[1], *Co-Chairperson, Membership Committee, International College of Angiology;* Manabu Kurayoshi, MD[1]; Uchida Kazunori, MD[1]; Ryo Shinhara, MD[2]; Toshimasa Asaha, MD[3]; *[1]Department of Vascular Surgery, Takanobashi Central Hospital, Jinyoukai Medical Corporation Hiroshima, Japan; [2]Department of Surgery, Mitsubishi Mihara Hospital, Hiroshima, Japan; [3]Department of Surgery, Division of Frontier Medical, Programs for Biomedical Research, Graduated School of Biomedical Science, Hiroshima University, Hiroshima, Japan.*

Purpose

From 1998 to 2006, we performed two-port system subfascial endoscopic perforator vein surgery (TPS-SEPS) with or without superficial venous ablation (SVA) on 733 limbs. Of those, 256 limbs had stasis dermatitis and were classified as C4-C6, according to CEAP classification. At the time of SEPS, 71 of those 256 limbs had active stasis ulcers and 17 had inactive stasis ulcers. The remaining 477 limbs had no stasis dermatitis and were classified as C2. In C4-C6 cases, the importance of SEPS is established to a considerable extent. However, in C2 cases, there have been so many disputes about the necessity of SEPS. Therefore, we reported our present methods of operation for IPVs (insufficient perforating veins) in C2 and C4 cases. We also designed the study to investigate the states of the IPVs by duplex scanning after intra-operative sclerotherapy.

Materials and Methods

Sclerotherapy was done through backward injection of Polidocasklerol in 56 limbs of 42 patients. In 24 of the limbs, the IPVs below the knee, which were marked by duplex scanning at the preoperative examination, were severed by SEPS before sclerotherapy. In contrast, for the remaining 32 limbs, sclerotherapy of below knee varicose veins was done without SEPS.

Results, Discussion & Conclusions

Of the IPVs, 59.3% occluded only by sclerotherapy, but neither the diameter of IPVs nor the distance from the site of sclerosant injection had any consistent pattern of occlusion of IPVs. It is still uncertain whether patient IPVs lead to the recurrence of varicose veins in C2 cases. Nonetheless, to achieve a certain blockage of IPVs, SEPS is reliable.

Monday, July 21, 2008

5:05 PM **Clinical Outcomes after Treatment of Klippel-Trenaunay Syndrome Patients**

Su-Min Jung, MD; Kyung-Bok Lee, MD; Dong-Ik Kim, MD; *Division of Vascular Surgery, Department of Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea.*

Purpose
Klippel-Trenaunay syndrome (KTS) is a rare congenital malformation that is characterized by a triad of varicose veins, cutaneous capillary malformation, and hypertrophy of bone and soft tissue. Although there are some theories about the cause of KTS, the exact cause of KTS is still unknown, and there is no known cure for KTS. We report the clinical outcomes of patients who received treatment for Klippel-Trenaunay syndrome at the Division of Vascular Surgery, Department of Surgery, Samsung Medical Center.

Materials and Methods
A total of 1929 patients visited our congenital malformation clinic from 1995 to 2005. The medical records of the patients were reviewed, and 87 patients were selected as having Klippel-Trenaunay syndrome. The 87 patients were analyzed to evaluate the clinical outcomes after treatment.

Results
There were 47 males and 40 females. The mean duration of follow-up was 35.4 months. Sclerotherapy was done in 20 patients. Surgery was done in 34 patients. Both sclerotherapy and surgery were done in 14 patients, and 14 or the 87 patients received conservative treatment only. We reviewed 39 of the 87 patients, who had follow-up MRI, and divided the patients into 3 groups (improved, aggravated, and no change). Clinical improvement was more commonly observed in patients who received active treatments (e.g., surgery and/or sclerotherapy), than patients who received conservative treatment or patients who were followed without treatment ($p=0.016$ by chi-square test).

Conclusion
The treatment of KTS is still controversial. Some authors argue surgical intervention should be avoided. However, according to our experience, active treatment with multidisciplinary treatment planning, when indicated, can improve the symptoms in KTS patients.

Monday, July 21, 2008

5:15 PM **Subfascial Endoscopic Perforator Vein Surgery (SEPS) for the Treatment of Chronic Venous Insufficiency and Venous Ulceration**

Mustafa Karaçelik, MD; Ibrahim Erdinç; *Izmir Eğitim ve Araştirma Hospital, Izmir, Turkey.*

Purpose
The complication rate in patients treated with the Linton procedure was unacceptably high. Subfascial endoscopic perforator vein surgery (SEPS) is a minimally invasive treatment modality for chronic venous insufficiency and venous ulcers.

Material and Methods
Two hundred fifty-two limbs of 229 patients underwent a SEPS procedure and/or saphenous vein ablation from May 2003 to January 2008. A tourniquet was not used and the two-port technique was preferred for surgery. Skin graft was not used. Honeysoft (medical honey) was used for wound care in selected cases.

Results
According to CEAP clinical classification, 112 limbs were class 6, 70 limbs were class 5, and 70 limbs were class 4 respectively. Greater saphenous vein stripping and/or high ligation and varicose vein excision accompanied SEPS in 241 limbs that had combined Sapheno-femoral junction and perforator vein insufficiency. SEPS was performed alone in 23 limbs who had recanalized deep venous thrombosis (19) and PVI (4). The mean patient follow-up was 35 months. No early deaths or thromboembolism occurred. Complications included severe subcutaneous emphysema (1), neuralgia (7), and 1 year later cellulitis (1). Ulcers healed in 124 limbs in two months and 58 limbs in 3 months. Ulcer recurrence was seen on 12 (6.6%) of the limbs. Clinical severity and disability scores improved significantly after surgery.

Conclusion
All venous ulcers healed with SEPS and/or combined ablation of the superficial venous reflux and remain healed for a 5-year period and symptom-free, with the exception of recurrent ulcers during long-term follow-up. SEPS is an effective and safe treatment modality.

Monday, July 21, 2008

5:25 PM **Chronic Mesenteric Artery Insufficiency Produces Hyperplasia of the Intestine**

Zhong Gao Wang, MD, PhD, FICA, FSVS, *Vice President, International College of Angiology; Editor, International Journal of Angiology;* HenXi Yu, MD; YongQuan Gu, MD; JianXi Li, MD; Jian Zhang, MD; Zhen Li, MD; *Department of Vascular Surgery, XuanWu Hospital; Capital Medical University; Department of Thoracic and Cardiovascular Surgery, Second Artillery General Hospital, Beijing, China.*

Purpose
Chronic ischemia produces corresponding tissue hypoplasia. However, we report a distinctive hypertrophy of the intestine due to chronic mesenteric artery insufficiency, confirmed by angiography in two patients with opposite characteristic pathologic presentation of the intestine.

Materials and Methods
During surgery on the first patient, an approximately 60cm long ileum with sausage consistency and cyanosis in color was identified proximal to the caecum; wall-attached thromboembolism material and a hypertrophied segment of the ileum were removed. In the other patient, the intestine wall was paper thin. Following aorto-mesenteric bypass, the intestine wall grew thicker.

Results
Post-operative recovery of both patients was uneventful.

Conclusion
The commonly observed situation after a long standing hypoxic insult in a setting of chronic mesenteric ischemia is that the target tissue will at least develop slight hypoplasia. However, the cases we present, had pronounced either hyperplasia or severe hypoplasia. Thus, we re reporting our findings expecting to identify a special mechanism to explain this paradox.

Monday, July 21, 2008

5:35 PM **IVC in Motion—A Prospective Study Showing the Effects of Laparoscopic Surgery on IVC Dimensions and the Implications of IVC Filter Placement**

Jacqueline J. Carter, MD; Clark M. Kardys, MD; William H. Chapman, III, MD; Brandy Wilson, PA; Kathryn Sheets, PA; Frank M. Parker, DO; William M. Bogey, MD; Charles S. Powell, MD; Michael C. Stoner, MD, FICA, *Editor, International Journal of Angiology; Division of Cardiovascular Surgery, Brody School of Medicine, East Carolina University, Pitt County Memorial Hospital, Greenville, North Carolina.*

Purpose
Perioperative inferior vena cava (IVC) filter placement is often indicated in the setting of laparoscopic bariatric surgery due to the high incidence of pulmonary embolus. However, there exists controversy on whether IVC filter placement before surgery is safe due to the potential for megacava in bariatric patients and because of the hypothesized venous changes of the vena cava associated with laparoscopic surgery.

Materials and Methods
Twenty-six patients were enrolled preoperatively. Transfemoral access was obtained; a right atrial catheter and an intravascular ultrasound were placed. The ultrasound was used to interrogate the lateral and anteroposterior diameter every 5 minutes. IVC and right atrial pressures were noted as well. A Greenfield IVC filter was then placed at the conclusion of the case, under intravascular ultrasound guidance. Paired student's t-test was used to compare vena cava dimensions and hemodynamics with the baseline values.

Results
Baseline, maximal and minimal IVC dimensions are shown in the table and expressed as range (mean $\pm$ SE). *$p<0.05$ compared to baseline values.

	IVC lateral diameter (mm) Range (mean $\pm$ SE)	IVC anteroposterior diameter (mm) Range (mean $\pm$ SE)
Baseline	8-31 (24.8 $\pm$ 1.2)	6-26 (15.6 $\pm$ 1.0)
Maximum	15-37 (26.6 $\pm$1.0)*	6-30 (16.8 $\pm$1.1)
Minimum	8-31 (19.4 $\pm$ 1.2)*	3-24 (8.4 $\pm$ 1.0)*

The data demonstrates a significant flattening of the IVC during pneumoperitoneum. No significant trends were seen with respect to IVC and atrial pressures.

Conclusion
This novel application of intravascular ultrasound demonstrated that while there are considerable variations in the size of the IVC during laparoscopic bariatric surgery, the anteroposterior diameter of the IVC was always 30 mm or less. This suggests that the IVC filter can be placed safely in the preoperative period. However, because of the significant morphologic changes shown with this data, the authors recommend the use of an IVC filter with fixation barbs in this setting.

Monday, July 21, 2008

5:55 PM – 6:30 PM
Fifteenth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Carotid Endarterectomy

5:55 PM **Carotid Endarterectomy (CEA) under Cervical Block in Octogenarians**

Choon S. Shin, MD, *Clinical Professor of Surgery, Weill Medical College of Cornell University, New York, New York; Director of Surgery, New York Community Hospital, Brooklyn, New York.*

Purpose
To evaluate the safety of carotid endarterectomy (CEA) performed under cervical block anesthesia in octogenarians, length of hospital stay, 30-day morbidity, and mortality.

Materials and Methods
From 2002 through 2007, CEA was performed under cervical block anesthesia in 20 patients with symptomatic carotid artery disease (11 male, 9 female with a mean age of 83 [81-89]). Comorbidities include hypertension (16), smokers (8), diabetes mellitus (4), and coronary artery disease (9). Two patients underwent CEA approximately 10 days prior to an elective coronary artery bypass. Two patients had unsuccessful stenting.

Results
All patients were discharged from the hospital within 23 hours to 5 days. There were no major neurological or cardiac complications. Two patients develop transient hoarseness immediately following surgery and cleared spontaneously within 24 hours. Two other patients developed mild weakness of the tongue.

Conclusion
CEA can be performed safely in octogenarians in selected cases with little morbidity. The advantage of cervical block vs. general anesthesia may be more significant in octogenarians.

Monday, July 21, 2008

6:05 PM **Carotid Body Tumors—How I Treat It**

Zhong Gao Wang, MD, PhD, FICA, FSVS, *Vice President, International College of Angiology; Editor, International Journal of Angiology; Department of Vascular Surgery, XuanWu Hospital; Capital Medical University, Beijing, China.*

Purpose
On the basis of having treated 92 patients with carotid body tumors (CBT), the author introduces biological characters of CBT and its surgical management. CBT may have behavior bilateral and familiar occurrence, malignant tendency, closely situated but not exactly situated at the bifurcation, and some functions of endocrine secretions. It belongs to one of glumous tumors since it has multiple networks of microarteriovenous fistulas and is thus a rich vascular tumor. Surgeons, who have insufficient experience in treating this entity, may confront a difficult or risky situation of unexpected bleeding occurring in the surgical field, beyond pre-operative preparations. The fact, that 50% of the cases in author's series having previous history of surgical interventions for either trying to remove the lesion, or biopsy only, well explains this point.

Materials and Methods
During surgery, if the carotid artery is ligated, severe cerebral complications may incur. According to the extent of displacement or invasion of the carotid bifurcation, 3 types of lesions are divided. The author's seven approaches tailored to the patient's individual underlying pathology are introduced.

Results
The main point is how to thoroughly remove the lesion and have the carotid artery remain intact, or how to reconstruct the carotid artery when it is necessary. A novel procedure, e.g., resecting with semi-bench surgery, is advocated for large sized tumors, which wraps the carotid arteries.

Conclusion
Thus far, no minimally invasive procedure has been invented in lieu of surgery. There has been only a reduction in the frequency of cranial complications following these procedures.

Monday, July 21, 2008

6:15 PM **Combined Carotid Endarterectomy and Coronary Artery Bypass Grafting vs. Coronary Artery Bypass Grafting Alone for Patients with Critical Stenosis of the Internal Carotid Artery and Symptomatic Coronary Artery Disease**

Kyung-Bok Lee[1]; Min-Kuk Kim[1]; Yong-Tak Lee[2]; Pyo-Won Park[2]; Ki-Ick Sung[2]; Wook-Sung Kim[2]; Kwang-Ho Lee[2]; Chin-Sang Chung[3]; Gyeong-Moon Kim[3]; Dong-Ik Kim, MD, PhD[1]; Young-Wook Kim, MD, PhD[1], *Director of Vascular Surgery; [1]Division of Vascular Surgery, [2]Department of Thoracic Surgery, and [3]Department of Neurology, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea.*

Purpose
There has been controversy in determining the indications for combined carotid endarterectomy (CEA) and coronary artery bypass grafting (CABG) for patients with critical stenosis ($\geq$70%) of the internal carotid artery (ICA) and symptomatic coronary artery disease (CAD). We attempted to compare an early (30<d) post-operative stroke rate between the patient groups who underwent combined CEA and CABG and CABG alone for patients with critical stenosis of the ICA and symptomatic CAD.

Materials and Methods
Between January 2001 and December 2007, 2,555 CABG's were performed at Samsung Medical Center, Seoul, Korea. A retrospective review of the pre-operative carotid Duplex ultrasound (US) of 2,213 patients revealed that 140 patients (4.3%) had critical carotid artery stenosis ($\leq$70%). After excluding emergent operations (n=16), 30 combined CEA and CABG's and 94 CABG's alone, were compared with the patient's characteristics, degree of ICA stenosis, frequencies of symptomatic carotid artery stenosis (<6 mo), duration of hospital stay, and hospital death between the combined CEA and CABG group, and the CABG group alone. Early post-operative stroke and ipsilateral stroke rates were retrospectively investigated, and compared between the two groups. Chi-square test, Fisher's exact test, and *t*-test were used for comparison.

Results
The patient's characteristics revealed no significant differences between the two groups. The degree of ICA stenosis measured by Duplex ultrasound were more severe in the combined CEA and CABG group, than the CABG group alone (78.5% vs. 75.2%, p=0.03). The frequency of symptomatic ICA stenosis showed no statistical difference (16.7% vs. 9.6%, p=0.22) between the two groups. Early post-operative stroke rates after combined CEA and CABG vs. CABG along were 3.3% (n=1) and 5.3% (n=5), retrospectively (p=0.55). Ipsilateral stroke rates were 0% (n=0) and 5.3% (n=5) retrospectively (p=0.24). There was no significant difference in the duration of hospital stay between the two groups. There was one hospital death secondary to fatal stroke in the CABG group alone.

Conclusion
Our retrospective study revealed that there was no significant difference in the incidence of early post-operative stroke rate between the combined CEA and CABG group and the CABG group alone, for patients with both critical stenosis of the ICA and symptomatic CAD. As a conclusion, elective combined procedure did not raise stroke or operative mortality rates.

Monday, July 21, 2008
6:30 PM – 8:00 PM
Sixteenth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Professor Kailash Prasad Oration Lecture
Surgical Management of Carotid Artery Disease

John B. Chang, MD, FACS, FICA, *Professor of Clinical Surgery, Albert Einstein School of Medicine; Chairman, Board of Directors, International College of Angiology; Editor-in-Chief, International Journal of Angiology; Director, Long Island Vascular Center, Roslyn, New York; Attending Surgeon, North Shore-Long Island Jewish Healthcare System, New Hyde Park, New York.*

Purpose
In an era of carotid artery stenting as an alternative treatment for severe carotid artery stenoses, the author analyzed long-term results of carotid artery endarterectomies and angioplasty using a proximal greater saphenous vein patch, and compared the results to patients who had primary artery repair after endarterectomies. During this presentation, management of carotid artery disease in general, will be discussed.

Materials and Methods
A retrospective study was performed on a single surgeon's experiences with 968 carotid endarterectomies for symptomatic lesions with greater than 70% stenoses or ulcerating plaque. Primary closure after endarterectomy was performed when the internal carotid artery diameter was greater than 4 mm. A proximal greater saphenous vein patch was used in 792 cases, when the internal carotid artery diameter was less than 4 mm, and in all females with recurrent stenosis.

Results
The survival, restenosis (>50% diameter reduction), and stroke rates were determined by the Kaplan-Meier method. The statistical differences were calculated by the Wilcoxon Test with a p value <0.05.

The perioperative results were:
a) Ipsilateral Stroke Rates: 1.7% with primary closure and 0.5% with the vein patch closure;
b) Mortality Rates: 2.2% with primary closure and 0.3% with the vein patch closure;
c) Any Stroke or Death Rates: 3.4% with primary closures and 0.76% with the vein patch closure.

Rates from the vein patch closure are lower than the primary closure, $p<0.01$.

Conclusion
The type of closure of the carotid artery after endarterectomy is important for lower stroke risks, restenosis, and death. The greater saphenous vein patch grafts are associated with lower stroke rates, restenosis, and mortality rates, than with primary closures. No graft rupture or aneurysm occurred with the vein patch. There is a definite long-term benefit to patients having the vein patch closure. Therefore, we recommend using the vein patch for most patients.

Tuesday, July 22, 2008

8:00 AM – 9:00 AM
Seventeenth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Special Interest Breakfast Session

A Special Breakfast Session

Tuesday, July 22, 2008
9:00 AM – 10:00 AM
Eighteenth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Live Case Presentations from the OR
TAA and Renal Stents

Takao Ohki, MD, PhD, FICA, *Professor of Surgery, Albert Einstein School of Medicine, New York, New York; Secretary General and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Editor, International Journal of Angiology; Chairman, Department of Surgery and Chief, Department of Vascular Surgery, Jikei University School of Medicine, Tokyo, Japan.*

Tuesday, July 22, 2008
10:00 AM – 10:30 AM
Nineteenth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Carotid Interventions, Carotid Trial Implications, EVAR Complications, and Update on Thoracic Devices

10:00 AM **Update on Carotid Interventions**

Luis A. Sanchez, MD, *Professor of Surgery, Division of General Surgery, Vascular Surgery Section, Washington University School of Medicine, St. Louis, Missouri.*

Tuesday, July 22, 2008

10:10 AM **Implications of Carotid Trials**

Mark A. Farber, MD, *Assistant Professor of Surgery, Division of Vascular Surgery, UNC School of Medicine at Chapel Hill, Chapel Hill, North Carolina.*

Tuesday, July 22, 2008

10:20 AM **Managing Proximal Neck Complications with EVAR**

Luis A. Sanchez, MD, *Professor of Surgery, Division of General Surgery, Vascular Surgery Section, Washington University School of Medicine, St. Louis, Missouri.*

Tuesday, July 22, 2008

10:30 AM **Update on Thoracic Devices**

Mark A. Farber, MD, *Assistant Professor of Surgery, Division of Vascular Surgery, UNC School of Medicine at Chapel Hill, Chapel Hill, North Carolina.*

Tuesday, July 22, 2008
10:45 AM – 11:30 AM
Twentieth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Treatment of Acute (Paget-Schroetter Syndrome) and Late Chronic Obstruction of the Subclavian Vein

A Special Lecture

J. Ernesto Molina, MD, PhD, FICA, *Professor of Surgery; Co-Chairperson, Scientific Committee, International College of Angiology; Editor, International Journal of Angiology;* David W. Hunter, MD; Charles A. Dietz, MD; Jonathan D. Cunha, MD, PhD; *Department of Surgery, Division of Cardiovascular and Thoracic Surgery and Department of Radiology, Division of Interventional Radiology, University of Minnesota, Minneapolis, Minnesota.*

Purpose
To affirm the standard of care to treat the acute thrombosis of the subclavian vein and to establish the standard of care for chronic obstruction based on our 25-years experience in treating these syndromes.

Materials and Methods
We treated 122 patients with Paget-Schroetter syndrome (Group I) implementing the emergency protocol of catheter guided thrombolysis followed by immediate surgery via a subclavicular approach removing the first rib, subclavius tendon, scalenus muscle, and vein patch plasty of the vessel. We treated 31 patients with chronic obstruction (Group II). Only patients with adequate inflow in this group were considered candidates for surgery. A trans-sternal extension of the incision was used in some cases when a long vein patch was needed to connect the innominate to the distal end of the vein. This was followed 24-hours later by implant of an endovascular stent. Anticoagulation regimen was maintained for 8 weeks in Group I and for a minimum of 12 weeks in Group II.

Results
In the Paget-Schroetter syndrome group, the re-establishment of flow was obtained in 100% (5 months to 21-years follow-up). In the chronic obstruction group, there was a 6.4% failure rate (2 patients) despite re-interventions. Trans-sternal incision was needed in 25 patients (20%) with acute thrombosis in 11 in the chronic group (35.4%).

Conclusion
Paget-Schroetter syndrome must be treated as an emergency. The standard of care involves thrombolytic therapy followed immediately by surgery to decompress the thoracic inlet and repair the venous obstruction. Post-operative anticoagulation is mandatory for at least 8 weeks. In chronic patients, only those with adequate inflow are candidate for surgery. Good results with a long vein patch connecting the two ends of the interrupted vein followed by implant of an endovascular stent are effective. The surgical approach is anterior via a subclavicular incision, which gives adequate exposure to accomplish both objectives.

Tuesday, July 22, 2008

11:30 AM – 12:00 Noon
Twenty-First Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Peripheral Arterial Aneurysms

11:30 AM **Management of Visceral Artery Aneurysms**

Hideaki Obara, MD, PhD, FICA; Kenji Matsumoto, MD; Naoki Fujimura, MD; Shigeshi Ono, MD; Toshiaki Hattori, MD; Yuko Kitagawa, MD; *Division of Vascular Surgery, Department of Surgery, Keio University School of Medicine, Tokyo, Japan.*

Purpose
Visceral artery aneurysms (VAAs) are uncommon but important, as they have a significant potential for rupture, resulting in high mortality rates. The purpose of this study was to review our experience with VAA treatment at a single institution.

Methods and Methods
Between January 1995 and November 2007, 30 VAA's were treated in 28 patients (19 male, 9 female) with a mean age of 66 years (range 48-81 years). Post-operative visceral artery pseudoaneurysms, which were mainly following pancreaticoduodenectomy, were excluded from this study. The lesion involved the splenic artery (SA; 10), superior mesenteric artery (SMA; 5), hepatic artery (HA; 6), common celiomesenteric trunk (CMT; 2), pancreaticoduodenal artery (PDA; 3), celiac trunk (CT; 2), and gastroduodenal artery (GDA; 2). Two patients had multiple aneurysms, and one patient (PDA) had ruptured. Fifteen patients had endovascular procedures consisting of embolization, and 13 patients underwent open surgical repair. In the surgical group, VAA's were treated by splenectomy (n=2), aneurysmectomy (n=2), aneurysmorrhaphy (n=2), and aneurysmectomy with arterial reconstruction (n=7).

Results
The results were satisfactorily enough with no severe perioperative complication or death after both endovascular intervention and surgical repair, but one patient (PDA) had a duodenal stenosis, which resolved with conservative management. No aneurysm reperfusion or enlargement was observed at follow-up.

Conclusion
Our study suggests that an aggressive treatment of VAA is justified, even in the case of asymptomatic VAA, because of the low morbidity and mortality rates. Endovascular management of VAA is a reasonable and preferable alternative to open surgical repair in anatomically suitable patients. Open surgery, however, should be also indicated in some cases according to the localization and the type of aneurysm. Regardless of the type of intervention, it is critically important to assess and maintain end organ perfusion via adequate collateral circulation or direct revascularization.

Tuesday, July 22, 2008

11:40 AM **Surgical Treatment of Femoral Artery Infected False Aneurysms**

Xiaoxi Li, MD; Songqi Li, MD; Zuojun Hu, MD; Caisheng Ye, MD; Weiming Lv, MD, Shengming Wang, MD; *Department of Surgery, The First Affiliated Hospital, Sun Yat-sen University, Guanzhou, China.*

Purpose
To evaluate the outcome of the excision of the aneurysm with femoral artery ligation and local debridement, without any revascularization in surgical management of post-traumatic femoral artery infected false aneurysms (pfa-IFA).

Materials and Methods
A retrospective chart review was performed on 62 consecutive patients, who were presented with pfa-IFA and admitted between January 2001 and December 2006.

Results
There were 53 men and 9 women, ranging in age from 15 to 46 years (mean 34.2 years). All 62 patients were drug abusers, presented with a pulsatile groin mass, fever, and anemia. All patients had a duplex ultrasound scan to confirm the clinical diagnosis. After retroperitoneal clamping of the external iliac artery was achieved through an oblique suprainguinal incision, and the distal superficial femoral artery was controlled through a middle of thigh incision, the patient underwent excision of the false aneurysm with ligation of vessels, and local debridement. Twenty-nine cases had an intra-operative digital subtraction angiogram (DSA) to confirm ensured collateral circulation. DSA showed collateral circulation had been established between the branches of the internal or external iliac artery and profunda femoral artery. Post-operatively, there was no hemorrhage, amputation, or mortality in this series. The duration of follow-up ranged from 3 to 48 months (mean 32 months). Two patients had mild claudication.

Conclusion
Ligation of artery and wide debridement without immediate revascularization is the optimal management for pfa-IFA, which is easy, cost-effective, and safe.

Tuesday, July 22, 2008

11:50 AM **Anaconda Endovascular Limbs for Treatment of Popliteal Artery Aneurysms**

Theodore Rapanos, BSc, MSc, MD, FRCSC; Randy Moore, BSc (Adv), MD, MSc, FRCS[2], *Assistant Professor;* Claudio Cinà, MD, MSc, Sp Chir(It), FRCSC, FICA[3], *Professor of Surgery;* *[1]Division of Vascular Surgery, Department of Surgery, McMaster University, Toronto, Canada;* *[2]Division of Vascular Surgery, Department of Surgery, University of Calgary, Alberta, Canada.*

Purpose
To date, no specific endograft device exists to treat popliteal artery aneurysms (PAA). In this setting, covered stents or limbs of endovascular grafts primarily designed to treat AAA have been used. The main issues with these devices have been; short lengths, requiring multiple stents with consequent decrease in lumen and differential longitudinal compliance; graft failure from angulation and repeated movement at the joint level; and dislodgment of the stents at the landing and overlapping zones.

To report the feasibility, safety and effectiveness of treating PPA with a new endovascular stent made of thin polyester externally supported by separate nitinol rings (ANACONDA Limbs), which have ideal characteristics of length, flexibility and diameter.

Materials and Methods
A prospective cohort of consecutive PAA treated at two tertiary academic vascular referral centers from July 2006 to December 2007 is reported. Inclusion criteria for PAA included: diameter >25mm; presence of a 30mm landing zone in the proximal and distal popliteal artery; absent or treatable stenotic inflow disease; and at least one vessel run off extending to the foot. We excluded patients with acute ischemia or rupture at presentation. All patients underwent segmental pressure before surgery, and volumetric contrast enhanced computerized tomography (CT) with a 64 slice scanner. We achieved access through the ipsilateral femoral artery with an open surgical technique. A flexible stabilizing knee device was employed for 7 days post surgery. Follow up included Ultrasound, plain x-rays and ankle/brachial index at discharge; CT angiography at two weeks and every six months post procedure. All patients received preoperative aspirin and Plavix, which were continued post-operatively indefinitely.

Results
From July 2007 to December 2007, 10 PAA were repaired, all males, age 70 ± 3 years of age. The average PAA diameter was 35 ± 11 mm. All were atherosclerotic and treated electively. Tibial run-off was 3 vessels in six, 2 vessels in three and 1 vessel in one patient. All repairs were technically successful and median hospital stay was 1.6 days (1 to 3). At a mean follow up of 7 ± 3 months there were no graft-related complications or graft occlusions and no re-interventions were required.

Conclusion
This feasibility study shows that the ANACONDA limb can be use for the treatment of PAA with no perioperative complications and a primary patency of 100% at a mean follow up of 7 months. Anaconda limbs for endovascular repair of PAA are a feasible, safe, and effective endoprosthesis, which provides technical advantages and possible long-term success compared with currently used endografts. Further studies are required to define the ideal indications, anatomic and prosthetic graft limitations, the perioperative role of anticoagulant and antiplatelet treatment, and further technical modifications of the device, which can make it ideal for this use.

Tuesday, July 22, 2008

12:00 Noon – 1:00 PM
Twenty-Second Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Special Interest Luncheon Session

Yoshiaki Yokoi, MD; *Department of Cardiology, Kishiwada Tokushukai Hospital, Kitakyusyu City, Fukuoka, Japan.*

Hiroyoshi Yokoi, MD; *Director, Department of Cardiology, Kokura Memorial Hospital, Tokyo, Japan.*

Tuesday, July 22, 2008
1:00 PM – 1:30 PM
Twenty-Third Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Subintimal Endoluminal Femoropopliteal Bypass for Long Segment Superficial Femoral Artery Occlusive Disease

A Special Lecture

Thomas Panetta, MD, FICA; *Professor of Surgery and Radiology, SUNY Health Science Center at Brooklyn, Brooklyn, New York; Division of Vascular Surgery, North Shore/Long Island Jewish Health System, New Hyde Park, New York.*

Purpose
Subintimal angioplasty and stenting of long segment superficial femoral artery (SFA) occlusions with ePTFE covered endoprosthesis is presented. The purpose of the study was to evaluate the role of plaque management, technique, multilevel adjunctive lesions, and normalization of popliteal pressures to eradicate pressure gradients across the long SFA segments.

Materials and Methods
Seventy-three subintimal endoluminal femoropopliteal (ELFP) bypasses were performed in the past five years. Percutaneous procedures were done with contralateral 8 French or 7 French sheaths. Subintimal angioplasties were antegrade and required a snare and retrograde gluidewire in 47.9% of cases. Twenty-one percent of retrograde cases were performed with a percutaneous 4 French sheath inserted in the dorsalis pedis, posterior tibial or peroneal arteries at the ankle. Subintimal angioplasties were dilated to 6mm diameter, lined with 6 mm diameter ePTFE/nitinol endoprostheses, and post-dilated to 6mm diameter. Average lesion length was 30.4 cm $\pm$ 14.1 cm. An average of 2.5 endoprostheses was implanted per procedure. Arterial pressure measurements were performed through all distal sheaths and pressure gradients were calculated. Post-operative ABIs and graft duplex surveillance was performed.

Results
Technical success was 96.1% with no deaths. Complications included 2 perioperative MIs, 1 endoleak, and 2 cases of DVT. Twenty-seven percent of patients had multilevel disease with adjunctive stents placed in the iliac, common femoral and profunda arteries. Pressure gradients across the SFA occlusions were reduced an average of 78.2 $\pm$ 15.9 mmHg after post-dilatation of the endoprostheses. There were only minor changes in gradient at completion of the subintimal angioplasty with an average increase of approximately 20 mm Hg for each endoprostheses placed. A gradient of less than 5 mm Hg was achieved in 90.4% of patients when pressures were measured. Mean ABI increase was 0.41 $\pm$ 0.16. Duplex criteria for failing grafts included peak systolic velocities less than 40 cm/sec. Four year patency was 69.8%.

Conclusion
Subintimal endoluminal femoropopliteal bypass can be performed safely with excellent technical success and mid-term results comparable to those of open bypass. Combined antegrade and retrograde subintimal dissection facilitates the procedure. Obliterating the pressure gradients across the SFA and the associated multilevel disease, and achieving laminar flow in the SFA are important factors in achieving satisfactory outcomes.

Tuesday, July 22, 2008

1:30 PM – 3:00 PM
Twenty-Fourth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

EVAR, TAA, AA Stent Grafts, and Carotid Stenting in 2008

1:30 PM **Endovascular Treatment of Popliteal Aneurysms**

Neil E. Strickman, MD, *Clinical Professor of Medicine, Baylor College of Medicine; St. Luke's Episcopal Hospital, Texas Heart Institute, Houston, Texas.*

Purpose
Popliteal artery aneurysms (PAAs) are associated with significant morbidity related to thrombosis and thromboembolism, which may lead to limb loss. Surgical PAA repair has been associated with significant morbidity and mortality, especially in patients presenting with acute lower extremity ischemia. The purpose of this study was to determine the safety and efficacy of percutaneous PAA treatment with self-expanding stent grafts.

Methods
From October 2000 through September 2007, 32 patients underwent endovascular exclusion of 36 PAAs.

Results
Thirty-three (91.7%) PAAs were caused by atherosclerotic disease, and 3 lesionsoccurred at sites of previous directional atherectomy. Twenty-nine patients with PAAs had lower extremity ischemic symptoms and 4 patients presented with popliteal venous thrombosis. Twenty-eight of the treated PAAs had associated mural thrombus. The mean aneurismal diameter was 34.1±13.3 mm and the mean lesion length was 98.6±102.1 mm. The average number of stent grafts implanted was 1.9±0.4 per aneurysm. The mean length of stent graft per lesion was 198.6±105.3 mm. Sixty-four stent grafts were used, of which 15 were Wallgraft® and 49 were Viabahn®. All PAAs were successfully excluded from the arterial circulation. There were no procedural device-associated complications, or deaths.

The average follow-up was 35.4±32.1 months. The primary and secondary patency rates, respectively, were 93.9% and 100% at 6 months, 89.3% and 96.4% at 1 year, and 70.6% and 94.1% at 2 years. At 5 years, primary and secondary patency rates were 85.7% and 100%, respectively. No endoleaks, aneurismal rupture, thromboembolism, or limb loss occurred at follow-up.

Conclusion
Stent graft exclusion of PAAs is safe and effective, yielding primary and secondary patency rates comparable to surgical repair. In spite of encouraging preliminary results in this study, further larger studies are warranted to reconfirm our observations.

Tuesday, July 22, 2008

1:45 PM **Endovascular Complex Superficial Femoral Interventions**

Aravinda Nanjundappa, MD, FICA, *Co-Chairperson, Membership Committee, International College of Angiology; Editor, International Journal of Angiology; Department of Surgery, University of West Virginia, Charleston, West Virginia.*

Dr. Charles Dotter first performed endovascular superficial femoral artery (SFA) interventions in 1964. Initially started as a crude dilatation technique, the last three decades have revolutionalized SFA interventions. The pathophysiology of SFA disease is very unique. It is the longest artery with a high daily endurance of stretching, tortuosity, and shortening with activity. The re-stenosis rates are high, especially close to the course of SFA at the hunter's canal. The indications for SFA interventions should be reserved only for life style limiting claudication, rest pain, and gangrene. TASC A to D lesions can be effectively treated with percutaneous balloon angioplasty. Adjuvant techniques include cryoplasty, intra-arterial stenting, thrombectomy, atherectomy, covered stents, and percutaneous bypass. The re-stenosis rates for stand alone balloon angioplasty are high, up to 50% at one year. SFA stenting can be performed for cases of failed balloon angioplasty. The presentation will illustrate several techniques and cases of complex SFA interventions.

Tuesday, July 22, 2008

2:00 PM **Renal Artery Interventions—How I Do It**

Iwan Dakota, MD, FICA; *Department of Cardiology and Vascular Medicine, School of Medicine, University of Indonesia, National Cardiovascular Center, Harapan Kita Hospital, Jakarta, Indonesia.*

Purpose
Renal artery stenosis is a common condition, which needs intervention to either control hypertension or preserve renal function. In the case of a single functionally kidney, a protection device, such as a filter is usually needed in order to avoid further deterioration from distal embolization or debris shower.

Materials and Methods
An approach could be femoral, but in some cases, due to anatomical arrangement of the renal artery, intervention may be performed through the brachial or radial arteries. A 6F multipurpose guiding catheter, RDC, or hockey stick guiding catheter could be used. In the case of distal aorta disease, scrapping of aorta wall should be avoided, and a "no touch" technique could be attempted with a 0.018" wire commonly used to cross the lesion. In some cases we can use a 0.014" coronary wire as well. In cases of highly a stenosed renal artery, predilation might be performed initially to open the vessel, facilitating stent delivery. However, in some cases direct stenting could be attempted. Balloon expandable stents are usually used for renal artery stenting, in which ostial lesion; a protrusion of the proximal stent to the aorta is required for better results.

Use of filter device is a bit controversial, but necessary in cases of a single functioning kidney. In such cases, a filter wire should initially cross the lesion prior to predilation and stent implantation.

Conclusion
Currently available equipment allows almost all renal artery stenosis to be opened. For the optimal outcome, careful selection of patients, equipment, and technique is required. The latest technologies remain promising, even though unproven yet, as we are awaiting further results.

Tuesday, July 22, 2008

2:15 PM Direct Carotid Puncture for Carotid Artery Stenting

Neil E. Strickman, MD, *Clinical Professor of Medicine, Baylor College of Medicine; St. Luke's Episcopal Hospital, Texas Heart Institute, Houston, Texas.*

Purpose
To describe the successful endovascular treatment using direct carotid artery access in a high risk elderly patient with symptomatic internal carotid artery stenosis.

Case Report
A 98-year-old man who was independent and lived alone was admitted to our hospital for symptoms of progressive weakness, associated with disorientation and difficulty with speech. Duplex carotid ultrasound was performed which revealed a totally occluded right internal carotid artery and high grade stenosis of the left internal carotid artery. Because of his advanced age he was deemed to be at high surgical risk for a standard endarterectomy, thus he was referred for carotid artery stenting.

Materials and Methods
Using the femoral artery approach, multiple guiding catheters and sheaths were advanced to the left common carotid artery. Adequate support for intervention could not be obtained. The procedure was aborted and the patient was referred for carotid endarterectomy. However, due to his advanced age, he felt that surgery was too high risk thus he chose an alternative attempt to endovascular carotid stenting. Therefore, he was brought back to the catheterization laboratory two days later for direct carotid access.

Results
Carotid artery stenting was accomplished with a 6F sheath, a cerebral protection device and a Nitinol stent all percutaneously via the left common carotid artery. The patient was discharged the following day without complications. At 2-year follow-up, The patient is functional and independent without recurrence of symptoms. Carotid duplex show velocities in the internal carotid of 135/45 cm/sec.

Conclusion
Direct carotid access can be successfully accomplished in patients if the femoral artery approach is anatomically prohibitive. In those of advanced age or other high risks for surgery, direct carotid access can be considered an option for revascularization.

Tuesday, July 22, 2008

2:30 PM **Angiography and Endovascular Interventions for Trauma**

Aravinda Nanjundappa, MD, FICA, *Co-Chairperson, Membership Committee, International College of Angiology; Editor, International Journal of Angiology; Department of Surgery, University of West Virginia, Charleston, West Virginia.*

Arterial trauma is common and can be life threatening. A quick physical examination and history can assist in rapid diagnosis and treatment. Initial screening diagnostic tests can be basic ankle brachial index to CT scanning and MR angiography. However, confirmation of active arterial bleed for therapeutic purposes requires conventional angiography. The major limitations of angiography are time, difficulty in obtaining access, contrast and radiation exposure and complications. Angiography combined with measurement of pressure gradients and intravascular ultrasound can be helpful in diagnosis and treatment. Therapeutic modalities for trauma with endovascular interventions include coil embolization, balloon angioplasty, and stenting. This presentation will review indications, benefits and case reviews of angiography and endovascular interventions for trauma.

Tuesday, July 22, 2008

2:45 PM **Subclavian Artery Interventions—When to Perform an Endovascular Intervention**

Iwan Dakota, MD, FICA; *Department of Cardiology and Vascular Medicine, School of Medicine, University of Indonesia, National Cardiovascular Center, Harapan Kita Hospital, Jakarta, Indonesia.*

Purpose
Stenosis of the subclavian artery usually leads to symptoms of ipsilateral weakness of the upper limb. Stealing effect usually occurs in severe stenosis or total occlusion of the subclavian artery.

Materials and Methods
Clear imaging of subclavian artery lesions is required prior to an endovascular intervention. An arteriogram is required to show the exact location, characteristic of the lesion, calcification, and collaterals for totally occluded lesions. An arteriogram could be taken either from the origin of the subclavian artery, or the aorta, through a femoral approach, or distally from the subclavian artery through an ipsilateral brachial approach.

A dual approach, femoral and brachial, is usually required, using a Glide wire (Terumo wire) through a 5-6 Fr MP catheter advanced to the lesion on subclavian artery. In cases of a stenosed subclavian artery, a 0.35" glide wire or 0.018" could be attempted antegrade, to cross the lesion followed by predilation with a suitable balloon to facilitate stent delivery. A either proper peripheral stent, a self-expandable stent, or balloon expandable stent could be inserted.

Conclusion
In cases of totally occluded subclavian arteries, a dual approach is a must, as we try to cross the lesion either antegrade, through a femoral or ipsilateral brachial approach from the distal subclavian artery. Simultaneous wire crossing is sometimes helpful. After crossing the lesion, predilation is performed to open the lesion, facilitating stent delivery. Either a balloon expandable stent or self-expandable stent could be inserted with or without post-dilation.

Tuesday, July 22, 2008
3:15 PM – 3:30 PM
Twenty-Fifth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Flaxseed and Peripheral Arterial Disease

A Special Lecture

Kailash Prasad, MBBS(Hons), MD, PhD, FRCPC, FACC, FICA, FIACS, *Professor Emeritus of Physiology, College of Medicine; Member, Board of Directors, International College of Angiology; Chairman, Scientific Committee, International College of Angiology; Senior Editor, International Journal of Angiology; Department of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada.*

Purpose
The purpose of this talk is to describe the effects of flaxseed and its components on blood pressure and endothelial cell function. The possibility of their uses in peripheral vascular diseases will be covered.

Materials and Methods
The studies have been conducted in whole animals, isolated blood vessels and in humans.

Results
Flaxseed has practically no effect on the arterial pressure in experimental animals and in humans. However, flaxseed improves endothelial cell function. Flaxseed oil reduces arterial pressure in hypertensive rats and dyslipidemic patients. Secoisolariciresinol diglucoside (SDG) isolated from flaxseed was investigated for its effects on arterial pressure in Sprague-Dawley rats. SDG in the doses of 3 and 5 mg/kg IV produced a dose-dependent decrease in arterial pressure. Higher doses (10, 15 and 20 mg/kg) reduced arterial pressure to the same extent, but to a greater extent than the 3 and 5 mg/kg doses. Maximum drops in the mean arterial pressure at 15 min were 40% with 10 mg/kg, 41% with 15 mg/kg, and 43% with 20 mg/kg of SDG administration. The arterial pressure tended to recover after the maximum drop, but recovery was not complete even after 4 hr, when the drops in mean arterial pressures were 33% with 10 mg/kg, 22% with 15 mg/kg, and 29% with 20 mg/kg of SDG administration. The heart rates were not affected. The inhibitor of nitric oxide synthase did not block the reduction in arterial pressure. However, a specific inhibitor of guanylate cyclase completely prevented the SDG-induced reduction in arterial pressure. Oral administration of SDG also reduces arterial pressure.

Conclusion
These results suggest that flaxseed has no effect, flax oil has a small effect on arterial pressure, but SDG markedly reduces blood pressure. SDG is a long acting hypotensive agent, and this effect is mediated through guanylate cyclase enzyme. Flaxseed improves endothelial cell function. SDG, because of its antiplatelet-activating factor, antioxidant and vasodilator activity would be ideal for treatment of intermittent claudication and hypertension.

Tuesday, July 22, 2008

3:30 PM – 5:00 PM
Twenty-Sixth Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Arterial Endografts

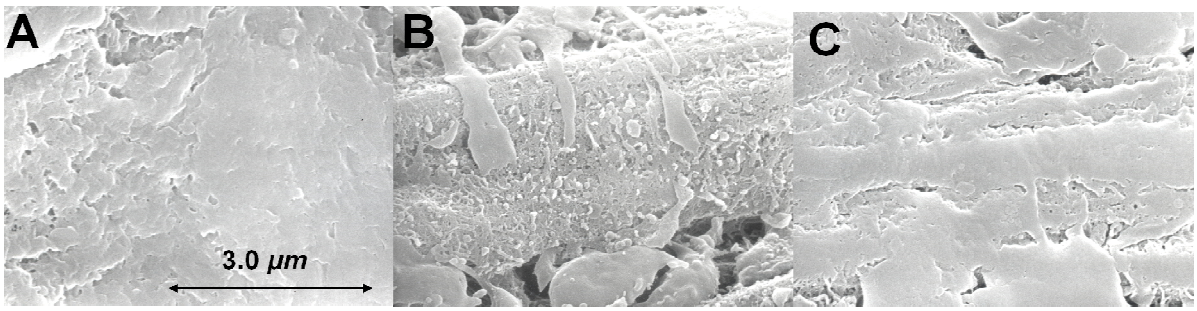
3:30 PM **Edaravone Suppresses Post-Operative Vein Graft Intimal Hyperplasia in Rat Models—Protection from Endothelial Injury**

Mitsuhiro Yamamura, MD, FICA, *Co-Chairperson, Membership Committee, International College of Angiology;* Yuji Miyamoto, MD; Masataka Mitsuno, MD; Hiroe Takana, MD; Yasuhiko Kobayashi, MD; Hiroyuki Nishi, MD; Masaaki Ryomoto, MD; Noriko Tsujiya, MD; Tetsuya Kajiyama, MD; *Department of Cardiovascular Surgery, Hyogo College of Medicine, Hyogo, Japan.*

Purpose
Post-operative intimal hyperplasia is the major cause of vein graft occlusion and starts with endothelial injury. We have reported that a free-radical-scavenger, edaravone (Radicut®, Mitsubishi - Tanabe Pharma Co., Japan) may suppress post-operative intimal hyperplasia of vein grafts in rat model. Using a scanning electron microscope (SEM) at 10,000 - 20,000 x magnification, we sought to directly examine the surface of endothelial cells in vein grafts, in order to investigate edaravone's protective mechanism against the development of post-operative intimal hyperplasia.

Material & Method
Lewis male rats (*n*=8; 497±26g) were divided into two groups. Pre-operatively, rats were administrated an intraperitoneal injection of edaravone (3.0 mg/kg, edaravone group; *n*=4) or the same dose of saline (saline group; *n*=4). We interposed the right epigastric vein graft into the common femoral artery with 10-0 interrupted sutures. One hour after interposition bypass, the vein grafts of each group was fixed in 2.5% glutaraldehyde and examined using an S-800 Hitachi SEM (Hitachi High Technologies Co., Japan). The right epigastric veins without interposition bypass were also examined as a control. This study was supported by a grant-in-aid for researchers, Hyogo College of Medicine, 2006-7.

Results
Endothelial cells in the 3 groups had almost the same appearance. Representative SEM pictures are shown below. The endothelial cell of the control vein has a smooth surface (Fig. A). While the endothelial cell in the saline group has a very rough surface with platelet adhesion (Fig. B), the endothelial cell in the edaravone group has a smooth surface without platelet adhesion, very similar to that of the control vein (Fig. C).



Conclusion
Our SEM results showed that edarvone could maintain the smooth surface of endothelial cells. We postulate that edaravone may suppress postoperative intimal hyperplasia by protecting the endothelial injury.

Tuesday, July 22, 2008

3:40 PM Thoracic Endografts for Chronic Type B Aortic Dissections

K. Kasirajan, MD, FICA; *Assistant Professor of Surgery; Editor, International Journal of Angiology; Department of Surgery, Emory University School of Medicine, Emory University Hospital and VAMC, Atlanta, Georgia.*

Purpose
One-third of survivors of acute Type B aortic dissection progress to rupture or require surgical repair within 5 years due to progressive false lumen enlargement. This retrospective study was undertaken to evaluate the safety and efficacy of the use of thoracic stent grafts (TSG) for treatment of chronic type B aortic dissection.

Methods
A total of 34 patients (males 20; mean age 56 ± 3 yr) were treated over a 4-year period with custom (2) or the TAG endografts for proximal thoracic false lumen enlargement. The majority of patients were treated with a single component (n=28 [82%]). The mean maximal thoracic aneurysm diameter was 6.9 ±1 cm. The majority (n= 25 [74%]) of patients had symptoms of chronic back pain. The mean time from the initial acute dissection was 4.3±0.8 yr. Two patients had Marfan's syndrome.

Results
All but one patient had successful exclusion of the proximal entry point. The majority (n=31 [91%]) of patients had routine coverage of the left subclavian artery. Bypass adjuncts to improve proximal landing zone included three ascending aorta to innominate and common carotid bypasses, two carotid to carotid and carotid to subclavian bypasses, one bilateral carotid to subclavian bypass, and one total abdominal visceral vessel debranching. None of the patients with isolated left subclavian occlusion required an adjunctive procedure. Perioperative complications included two deaths, one transient paraparesis, and one paraplegia. Secondary endovascular interventions were required for two patients with type II endoleaks, one with a type III endoleak, and one distal flare perforation. One patient with a proximal type I endoleak had a successful open surgical conversion. An asymptomatic proximal extension of the aortic dissection was noted in one patient 6 months after initial treatment. At a mean follow-up of 11 ± 8 mos., 31 (91%) of patients had complete false lumen thrombosis across the stented segment. Among patients with false lumen thrombosis, 25 (80%) patients had no growth in the size of the aneurysm and 6 (19%) patients had a mean 3.3 ± 1 mm decrease in the size of the maximal thoracic aortic diameter.

Conclusions
Despite continued perfusion of the false lumen distal to the stented segment, the majority of treated patients had thrombosis and stabilization of the aneurysmal portion of the false lumen. TSG appears to be a safe and effective therapy for patients with chronic type B dissection.

Tuesday, July 22, 2008

3:50 PM **Comparison of Long-Term Results Following Femoro-Popliteal Bypass Grafting—Autologous Vein Graft vs. Prosthetic Graft**

Hyo-Jun Park, MD; Sanghoon Lee, MD; Kyoung-Bok Lee, MD; Dong-Ik Kim, MD; Young-Wook Kim, MD; *Department of Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea.*

Purpose
To recommend patients with superficial femoral artery (SFA) occlusion, autologous vein and prosthetic grafts as conduit resulting in similar graft patency. Some authors report different clinical features between the 2 patient groups when graft occlusion occurs. We attempted to compare the long-term results of 2 patient groups (vein grafts vs. prosthetic graft) including graft patency, and clinical features when a graft occlusion develops.

Method
From September 2003 through December 2007, 107 above-knee femoropopliteal bypass grafts were performed using autologous vein grafts (n=49) and polytetrafluoroethylene (PTFE) grafts (n=58) at Samsung Medical Center, Seoul, Korea. Patients with non-atherosclerotic causes were excluded from the study. After comparing the demographic and clinical factors (age, sex, ankle-brachial index, indications for surgery), associated risk factors of atherosclerosis (diabetes mellitus, hypertension, smoking), and other co-existing morbidities (ischemic heart disease, cerebrovascular disease, chronic renal failure), we compared long-term patency of grafts and clinical features of graft occlusion between the 2 groups. Graft patency was examined by periodic Duplex ultrasound examinations. To calculate graft patency and to compare the patency rates between the 2 groups, the Kaplan-Meier method and Log rank test were used respectively.

Results
After 40 months (mean, 24.9 months, and range 1.1-58.8 months) of follow-up, we experienced 4 (3.70%) deaths and 24 (22.2%) follow-up losses. At 1, 2, 3, and 4 years after bypass grafting, the primary patency rates were calculated as 95.0%, 88.2%, 80.9% and 80.9% in vein graft group vs. 86.9%, 86.9%, 84.0% and 84.0% in PTFE graft group (p=0.668). Comparing the clinical features of graft occlusion between the 2 groups (4 vein graft vs. 8 PTFE graft occlusion), the timing of the graft occlusion was 18.6 months in vein graft group and 26.7 months in PTFE group.

Conclusion
Following above-knee femoro-popliteal bypasses for atherosclerotic occlusive disease, we have experienced a similar long-term patency rate after using vein graft and prosthetic grafts. The clinical features of graft occlusion showed more common occurrence of limb threatening ischemia in PTFE graft occlusion.

Tuesday, July 22, 2008

4:00 PM **Autologous Whole Bone Marrow Induced Angiogenesis in an Ischemic Canine Model and Clinical Patients**

Ae-Kyeong Kim, MS[1]; Mi-Jung Kim[2]; Kyung-Bok Lee, MD[3]; Jong-Sung Kim, MS[4]; Sung-Wook Shin, MD; Young-Soo Do, MD; Chan-Jeoung Park[2]; Jin-Hyun Joh, MD; Dong-Ik Kim, MD[3]; *[1] Department of Molecular Medicine Science, Sungkyunkwan University School of Medicine, Seoul, Korea; [2]Department of Laboratory Medicine, University of Ulsan College of Medicine, Asan Institute for Life Sciences, Seoul, Korea; [3]Division of Vascular Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea; [4]Samsung Biomedical Research Institute, Seoul, Korea.*

Purpose
Bone marrow contains many kinds of primitive and endothelial progenitor cells (EPCs), and these cells secrete many kinds of growth factors. We hypothesized that angiogenesis could be achieved by employing autologous whole bone marrow (WBM) transplantation. Here, we investigated the efficacy of angiogenesis with using autologous WBM and autologous bone marrow-derived mononuclear cells (BM-MNCs), and we also examined the added effect of using recombinant human granulocyte colony-stimulating factor (rhG-CSF).

Materials and Methods
We injected WBM and BM-MNCs via the femoral artery and the ischemic muscle in an animal ischemic model. Each treated limb of the muscle injection group displayed more potent angiogenesis compared with the control limbs. However, the angiogenesis in each treated limb of the femoral artery injection group showed no difference when compared with the control limbs.

Results
The angiogenesis in each treated limb of the femoral artery injection group showed no difference when compared with the control limbs. Autologous WBM had a potent angiogenic effect compared with autologous BM-MNCs. In other experiments, we confirmed that the formation of collateral vessels was augmented by the injection of rhG-CSF with WBM. On the basis of the animal model, we treated human ischemic disease and clinical improvement was seen in 22 of the 33 enrolled limbs (66.7%). Newly developed collateral vessels were identified in 9 of the 20 enrolled limbs (45%), as confirmed by angiograms.

Conclusion
These results suggest that the prominent effect of WBM for angiogenesis could be achieved by primitive cells, EPCs and unknown growth factors in autologous WBM. The efficiency of angiogenesis could be enhanced by injecting rhG-CSF in addition to injecting autologous WBM.

Acknowledgement
This research was supported by a grant of the Samsung Biomedical Research Institute (SBRI C-A5-105-1, C-A7-405-1) and by the Samsung Medical Center Clinical Research Development Program grant, #CRS-107-30-1, # CRS-107-60-2 and CRS1070211.

Tuesday, July 22, 2008

4:10 PM **The Functional Outcome of Endovascular Intervention against Superficial Femoral Artery Lesions in Claudicants**

Masayuki Sugimoto, MD; Tsutomu Ihara, MD; Kiyoaki Miimi, MD; Akio Kodama, MD; Hiroshi Narita, MD; Masayoshi Kobayashi, MD; Kiyoto Yamamoto, MD; Kimihiro Komori, MD; *Division of Vascular Surgery, Department of Surgery, Nagoya University Graduate School of Medicine, Nagoya, Japan.*

Purpose
We have started endovascular intervention against superficial femoral artery (SFA) lesions in accordance with the Transatlantic Inter-Society Consensus (TASC) since 2005, expanding the indication to claudication with TASC C/D lesions. The purpose of this study is to examine the functional outcome of endovascular revascularization against SFA lesions in claudicants.

Materials and Methods
The study retrospectively enrolled patients with intermittent claudication who were found to have only SFA lesions, and underwent an endovascular intervention at our institution (17 patients with 20 limbs; TASC I|I A/B/C/C 11/5/3/1 limbs respectively). Fontaine III or IV cases were excluded. All patients underwent a treadmill test (constant speed of 2.4 km/h, fixed 12% slope, and walking up to a maximum of 200m) before and after the interventions. Their ankle-brachial blood pressure indices (ABPI) were obtained at rest and after the treadmill load. The outcome measures were ABPI changes, initial claudication distance (ICD), maximal walking distance (MWD), and recovery time (RT).

Results
Primary success was achieved in all but one case. Stents were placed in 13 limbs. In 6 patients with 7 limbs who initially completed the 200 m treadmill load, all of them achieved improvement in ICD, and 4 of them became free of claudication (MWD>200m) following endovascular procedures. As for 10 patients with 12 limbs who were unable to complete the treadmill load prior to intervention, post-interventional MWD's improved to more than 200m in 6 patients. In 2 patients who could not complete the treadmill load because of general fatigue or respiratory distress even after intervention, they achieved freedom from claudication at the MWD's (ICD=MWD). One patient with two limbs obtained no elongation of MWD, but there was obvious improvement of RT. During the follow-up period (mean 9 months [range 2-24months]), restenosis was observed in 7 limbs. Primary and secondary patency rate at 1 year was 52.7% and 93.8% respectively.

Conclusion
In our series, primary success of endovascular revascularization in SFA improved ambulation immediately. Long-term patency and lifetime quality of life remain to be elucidated.

Tuesday, July 22, 2008
5:00 PM – 5:30 PM
Twenty-Seventh Scientific Session
Jikei University Building U1, 3rd Floor Main Auditorium

Are Safeguards Adequate in Clinical Research?

A Special Lecture

Ming K. Teoh, MBChB, ChM, FRCSEd, FRCS, MSc, MFFLM; Head of Medical Services—Asia Medical Protection Society, London, United Kingdom.

Compliance with ethical and regulatory frameworks in clinical research is necessary for the protection of research subjects, the researcher, and the public in general. The basis for ethical experimental research after WWII can largely be traced to the Nuremburg Code, first published in 1947, and supplemented by the Helsinki Declaration in 1964. Despite these well known guidelines regular news reports of research fraud and clinical trial tragedies are reminders that effective regulatory safeguards and vigilance are needed.

Primary legislation exists in most countries. In the EU, Directive 2001/20/EC (the Directive) harmonizes the relevant laws and implement good clinical practice in the conduct of clinical trials. Regulatory bodies such as MHRA in the UK and the FDA in the US ensure compliance with legislation. Medical Councils such as the General Medical Council (GMC) in the UK may impose sanctions on doctors found guilty of professional misconduct. Grant-awarding bodies, such as the Medical Research Council also has a key role in ensuring compliance with the approved medical research protocol. Most countries have local research ethics committee meet, review, and approve research conducted within its jurisdiction.

Safeguards are needed to avoid hidden bias of researchers and breaches of trial protocol, and to address conflicts of interest between the researcher, research subject, sponsor, and the pharmaceutical industry. Fraud and cheating are real hazards, which can only be effectively addressed by peer surveillance and whistle-blowing. Current issues include the need for full disclosure of all clinical trial results. The requirement for informed consent, particularly in trials involving children and incompetent adults is another safeguard. Researchers often face pressures to recruit trial subjects and to discourage opting out which raises the ethical question of whether the subjects are truly volunteers.

Provided the core ethical principles of patient autonomy, prevention of harm, promotion of benefit, and justice are upheld, a balanced approach is important since too much regulation may stifle medical and scientific progress.

Scientific Poster Presentations

Jikei University Building U1, 7th Floor Auditorium

Monday, July 21, 2008

10:30 AM – 10:45 AM and 3:00 PM – 3:15 PM

The Role of Color Doppler Image in Diagnosis of Lower Extremity Perforating Venous Insufficiency

Huang Xueling, MD[1]; Yanling Zheng, MD[2]; Ying Lin, MD, PhD[1]; Xiaoyan Xie, MD, PhD[2]; *Departments of [1]Vascular Surgery and [2]Medical Ultrasound, The First Affiliated Hospital of Sun Yat-sen University, Guangzhou, China.*

Purpose

To explore the role of color Doppler imaging (CDI) in the diagnosis of perforating venous insufficiency of the lower extremities.

Materials and Methods

The clinical data of 45 cases (50 limbs) with venous ulcers undergoing endoscopic subfascial perforator surgery were analyzed retrospectively. The dilated or insufficient perforating veins in of all the cases were diagnosed and located by CDI.

Results

In all 50 limbs of the 45 cases, CDI was found in 224 perforating veins, 3 veins at minimum, and 6 veins at maximum in one limb. A total of 203 perforating veins were ligated in SEPS, with 2 veins at minimum and 6 veins at maximum in one limb. Among these veins, 183 were found at the same location as diagnosed by CDI. Compared with the results in surgery, the match rate of CDI for diagnosis of dilated or insufficient perforating veins was 90.1%.

Conclusion

CDI may correctly diagnose and locate the dilated or insufficient perforating veins, which helps to locate these veins during surgery.

Monday, July 21, 2008
10:30 AM -10:45 AM and 3:00 PM – 3:15 PM

Fulminant Myocarditis Treated with a Percutaneous Cardiopulmonary Support System (PCPS)

Kiyohiro Oshima, MD[1]; Fumio Kunimoto, MD[1]; Hiroshi Hinobara, MD[1]; Yoshiro Hayashi, MD[1]; Junko Hirato, MD[2]; Yukio Tajima, ME[3]; Hiroyuki Kuwano, MD[1]; *[1]Intensive Care Unit, [2]Department of Pathology, and [3]Supply Center, Gunma University Hospital, Gunma, Japan.*

Purpose
Fulminant myocarditis is characterized by rapid and extensive hemodynamic compromise occurring in a previously healthy patient. The patient sometimes requires mechanical circulatory support to maintain systemic perfusion. The purpose of this study was to analyze the clinical course of patients with fulminant myocarditis treated with a percutaneous cardiopulmonary support system (PCPS).

Materials and Methods
From January 1998 to November 2006, 4 fulminant myocarditis patients were admitted to the intensive care unit (ICU) at Gunma University Hospital, and treated with PCPS to support deteriorating hemodynamics. The mean age of the 4 patients was 38 $\pm$ 18 (range 14 to 57) years. None of the patients had past history of heart disease, and the diagnosis of fulminant myocarditis was made with clinical findings and endomyocardial biopsy. Three patients were successfully removed from PCPS, one patient had not improved and died from cerebral bleeding. Changes in clinical findings, APACHE II scores, and laboratory data were analyzed in the 3 survivors and 1 non-survivor.

Results
Intra-aortic balloon pumping (IABP) was used in all 4 patients. The duration of PCPS support was 144, 228, and 266 hours in the survivors, and 330 hours in the non-survivor. The interval between the occurrence of clinical symptoms such as fever and general fatigue, and the induction of PCPS in the non-survivor, was shorter (2 days) than in the survivors (4-6 days). Cardiac troponin I (CTn1) and creatine phosphokinase (CPK)-MB levels were significantly higher in the non-survivor compared with those in the survivors. Left ventricular ejection fraction (LVEF) gradually improved and PCPS flow decreased at around 120 hours after the start of PCPS in the survivors. However, these improvements did not occur in the non-survivor.

Conclusion
PCPS was induced in 4 fulminant myocarditis patients and successfully removed in 3 patients after long-term PCPS (>5 days). The maintenance of hemodynamics especially in the acute phase of Fulminant myocarditis is important because the possibility of circulatory recovery is relatively high compared to those with severe cardiac failure due to other causes. The prognosis might be poor if the interval between the occurrence of clinical symptoms and PCPS deployment is short.

Monday, July 21, 2008
10:30 AM -10:45 AM and 3:00 PM – 3:15 PM

MDCT Evaluation of Myocardial Bridge with Relationship to Atherosclerosis

Shu-Chen Han, MD[1]; Ching-Chang Fang, MD[2]; Yi Chen, MD[2]; Chi-Liang Chen, MD[2]; Shih-Pu Wang, MD[1,2]; *Departments of [1]Radiology and [2]Cardiovascular Center, Tainan Municipal Hospital, Tainan City, Taiwan.*

Purpose
The relationship between myocardial bride and atherosclerosis remains controversial. The purpose of this study was aimed to assess any difference of atherosclerosis in the groups without or with myocardial bridge in the coronary artery segment proximal to the bridge.

Materials and Methods
Three hundred ninety-eight consecutive patients were studied with CCTA using GE VCT 64 multi-detector computed tomography. Evaluation included prevalence, locations of segment, and atherosclerosis proximal to the bridge between the group with the bridge and the control group.

Results
One hundred eighteen intramuscular segments were identified in 111 of the 398 patients (28%). Seven patients had 2 myocardial bridges. Only 1 myocardial bridge was in the proximal segment of the LAD. Fifty-seven (51%) were in the mid-LAD and 51 (46%) in the distal LAD. Most LAD myocardial bridges were in the inter-ventricular septum (81%), and 19% in the RV myocardium. In the group with the myocardial bridge, 65.1% (56) revealed normal in the segment proximal to the bridge; 12.8% (11) mild atherosclerosis without stenosis, 4.7% (4) moderate atherosclerosis without significant stenosis, and 17.4% atherosclerosis with severe stenosis. In the control group without the myocardial bridge, 45.9% (39) revealed normal; 24.7% (21) with mild atherosclerosis without stenosis; 12.9% (11) with moderate atherosclerosis without significant stenosis, and 16.5% (14) with severe stenosis.

Conclusion
Myocardial bridge seems not to be an isolated risk factor in the development of atherosclerosis in the coronary artery segment proximal to the myocardial bridge.

Monday, July 21, 2008
10:30 AM – 10:45 AM and 3:00 PM – 3:15 PM

Arterial Gangrene of the Upper Limb

Aurel Mironiuc, MD, *Associate Professor;* Octavian Andercou, MD, *Lecturer;* Aurel Andercou, MD, PhD, *Professor of Surgery; Co-Chairperson, Membership Committee, International College of Angiology; Editor, International Journal of Angiology;* Clara Mironiuc, MD, *Associate Professor;* Horatiu Silaghi, MD, *Assistant Professor;* Bogdan Stancu, MD, *Assistant Professor;* Ioana Constantinescu, MD, *Assistant Professor;* Laura Palcau, MD*; University of Medicine and Pharmacy "Iuliu Hatieganu", Second Surgical Clinic, Cluj Napoca, Romania.*

Purpose
Critical limb ischemia, with localized or extensive gangrene of the upper limbs is rare and appears in arteriopathies of metabolic origin, rather than in vasomotor disease or thoracic outlet syndrome. The aim of this study is to identify the relationship between the etiology of arterial disease and the site and extent of necrotic lesions and results or treatment (medical or surgical), in order to maintain the function of the upper limb.

Materials and Methods
The study is a retrospective one, over a 5-year period, with 250 patients analyzed with peripheral necrosis lesions. Of those, 5.6% were localized at the upper level, with 13 cases being male, with a mean age of 47 years.

Results
The most frequent cause identified was metabolic disease (atherosclerosis and diabetes) in 6 cases, followed by neglected acute ischemia (3 cases), and Raynaud's disease. Paraclinical explorations identified 12 cases of arterial lesions in other sites. Most of the cases (9), presented digital necrosis. We also observed extensive gangrene at the forearm or arm level in 5 cases. Treatment was based on treating Comorbidities and prevention of risk factors. The aim of the surgical treatment was to ensure proper tissue perfusion using such techniques as thrombectomy, thromboendarterectomy, thoracic sympathectomy through open or video assisted surgery, and associated with ablative surgery. Post-operative results were group by good, medium, or poor, according to the functional status of the upper limb.

Conclusion
Necrosis of the upper limb is rare, and can appear after a long evolution of time. The lesions are more extensive and frequent when it is associated with metabolic arterial disease. Lesions are usually superficial and localized at the digital site or at level with the distal phalanx.

Monday, July 21, 2008
10:30 AM – 10:45 AM and 3:00 PM – 3:15 PM

Screening of the Differentially Expressed Genes in Vascular Diseases

Hyun-Seon Eo, MS[1]; Ae-Kyeong Kim, MS[1]; Dong-Ik Kim, MD, PhD[2]; *[1]Samsung Biomedical Research Institute, Seoul, Korea; [2]Division of Vascular Surgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea.*

Purpose
The aim of this study is to identify differentially expressed genes in primary varicose veins, abdominal aortic aneurysms, and atherosclerosis.

Materials and Methods
Vein samples were isolated from four primary varicose veins and three normal greater saphenous veins. Tissues of the human abdominal aorta were obtained from ten abdominal aortic aneurysms (AAA), five normal abdominal aortas (NA), and three aortic occlusive diseases (AOD). Human arteries were obtained from ten atherosclerotic carotid and femoral arteries, and five non-atherosclerotic arteries. The differential display reverse transcription-polymerase chain reaction technique and annealing control primer method was used to screen the differentially expressed genes.

Results
We found that L1M4 repeat sequence of clone RP11-57L9, Clone RP11-299H13, and Alu repetitive sequence of human tropomycin 4 mRNA showed differences in expression patters between normal saphenous veins and disease saphenous veins. A differentially expressed immunoglobulin kappa chain constant region (Ig κ-C) was detected in AAA but not in NA and AOD. We screened that the apolipoprotein C1 (apo C1) gene was prominently expressed in the atheroma of the carotid and femoral arteries, as compared to the non-atherosclerotic arteries. Immunohistochemial analysis showed the high express of apo C1 and apo E protein in the atheromas of the carotid and femoral arteries.

Conclusion
The screened highly reiterated interspersed retroelements (L1 and Alu elements) are useful disease markers in the genetic diagnosis of primary varicose veins. The differential expression of Ig κ-C gene in AAA is a candidate gene that may play a pivotal role in the pathogenesis of AAA formation. Over expression of apo C1 and apo E are closely associated with the susceptibility to the pathogenesis of atherosclerosis.

Acknowledgment
This work was supported by the Korean Research Foundation Grant and funded by the Korean Government (MOEHRD) (KRF-2007-313-E00258).

Tuesday, July 22, 2008
10:30 AM – 10:45 AM and 3:00 PM – 3:15 PM

Short-Term Outcome after Endovascular Abdominal Aortic Aneurysm Repair Using the Zenith Stent—The Dawn of Endovascular Aneurysm Repair in Japan

Naoki Toya, MD; Shin Hagiwara, MD; Kenjiro Kaneko, MD; Koji Maeda, MD; Hiroki Ohta, MD; Hideharu Yasue, MD; Makoto Sumi, MD; Koji Kurosawa, MD; Shigeki Hirayama, MD; Hiromasa Tachihara, MD; Yuji Kanaoka, MD; Takao Ohki, MD, PhD, FICA, *Professor of Surgery, Albert Einstein School of Medicine, New York, New York; Secretary General and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Editor, International Journal of Angiology; Chairman, Department of Surgery and Chief, Department of Vascular Surgery, Jikei University School of Medicine, Tokyo, Japan.*

Purpose
To report the interim results with the Zenith stent for the treatment of abdominal aortic aneurysm.

Materials and Methods
Although the Zenith stent has been used in more than 15,000 cases worldwide since its first use in 1993, the approval in Japan did not take place until July 2006. Since then, we operated on 103 patients using this sent, comprising of approximately 15% of the cases implanted during the same period in Japan.

Results
Technical success was achieved in each case with no deaths. Blood loss and operation time were 220 $\pm$ 276 ml (mean $\pm$ SD), and 164 $\pm$ 68.6 minutes, respectively. Endoleaks were encountered in 4 cases, which resolved without intervention. Simultaneously performed procedures included renal artery stenting (13 cases), coil embolization of the internal iliac artery (31 cases), iliac angioplasty, and stenting (23 cases). Major complications included ischemic colitis (2 cases), stent occlusion (2 cases), renal artery coverage (1 case), and buttock claudication (1 case). Sac enlargement rate was only 1% of the cases during a mean follow-up of 8.9 months.

Conclusion
The launch of EVAR in Japan has been successful with satisfactory early outcome. Penetration will depend upon physician training.

Tuesday, July 22, 2008
10:30 AM – 10:45 AM and 3:00 PM – 3:15 PM

Pitfalls and Techniques of Percutaneous Endovascular Abdominal Aortic Aneurysm Repair

Makoto Sumi, MD; Kenjiro Kaneko, MD; Hiroki Ohta, MD; Koji Kurosawa, MD; Shigeki Hirayama, MD; Hiromasa Tachihara, MD; Naoki Toya, MD; Yuji Kanaoka, MD; Takao Ohki, MD, PhD, FICA, *Professor of Surgery, Albert Einstein School of Medicine, New York, New York; Secretary General and Member, Board of Directors, International College of Angiology; Chairman, Local Organizing Committee, 50th Golden Anniversary Congress, International College of Angiology; Editor, International Journal of Angiology; Chairman, Department of Surgery and Chief, Department of Vascular Surgery, Jikei University School of Medicine, Tokyo, Japan.*

Purpose
Endovascular grafting has markedly reduced the invasiveness of the treatment of abdominal aortic aneurysms (AAA). By modifying the technique for available femoral closure devices, we have been able to achieve percutaneous repair of aneurysms. We will report the early results and pitfalls of percutaneous endovascular aortic aneurysm repair.

Materials and Methods
In this study, we compared the outcome with percutaneous femoral artery closure to that with open femoral arteriotomy in 85 patients who underwent endovascular AAA repair between July 2006 and June 2007. Devices were introduced using 12 Fr to 20 Fr sheaths. The technique involved the deployment of the Postar devices (Abbott) before insertion of the sheath ("Preclose" technique) with the sutures left extracorporeally for closure until conclusion of the procedure.

Results
Sixty-three patients had bilateral open femoral arteriotomies, and 22 patients had bilateral attempted percutaneous closure. Percutaneous closure was successful in 95% (21/22) of 12 Fr sheaths, and 86% (19/22) of 18-20 Fr sheaths. When the access wire traversed the inguinal ligament, previous femoral access, severe calcification, and obesity were predictive of percutaneous failure. Failure mandated immediate open repair with arterial control with a balloon and blood transfusion in each case. There was no stenosis, arterial thromboses, or pseudoaneurysms associated with percutaneous arterial closure.

Conclusion
Prostar technique for percutaneous AAA repair is safe, and feasible in select cases. Patient selection and puncturing the common femoral artery are important in achieving success. Availability of immediate surgical back up is necessary.

\

Tuesday, July 22, 2008
10:30 AM – 10:45 AM and 3:00 PM – 3:15 PM

Therapeutic Strategies and Outcome in the Treatment of an Anastomotic Aneurysm

Octavian Andercou, MD, *Lecturer;* Aurel Andercou, MD, FICA, *Professor of Surgery, Co-Chairperson, Membership Committee, International College of Angiology; Editor, International Journal of Angiology;* Aurel Mironiuc, MD, *Associate Professor;* Bogdan Stancu, MD, *Assistant Professor;* Ioana Constantinescu, MD, *Assistant Professor;* Octavian Budiu, MD; *University of Medicine and Pharmacy "Iuliu Hatieganu," Second Surgical Clinic, Cluj Napoca, Romania.*

Purpose
The formation of a pseudoaneurysm at an anastomotic site is one of the major complications of arterial surgery, and can be categorized into groups; those that result from a perforation of an artery by traumatic or iatrogenic injury, and those that result for dehiscence of a surgical vascular anastomosis. The most common site for a false aneurysm is a femoral artery anastomosis in the groin. This aneurysm has a connective tissue wall and a pseudo capsule, and communicates with the lumen of the artery through a defect in the anastomosis.

Materials and Methods
This is a retrospective study in which sequential cases of pseudoaneurysms were performed in the Second Surgical Clinic, Cluj Napoca, Romania, between 2003 and 2007, as identified from operating room records. Data collected included epidemiological characteristics of each patient, method of presentation, history of pervious vascular surgery, and treatment received by each case and results after treatment.

Results
The time from graft implantation to aneurysm formation varied from one month to 3 years. Clinical signs were groin swelling associated with pain. In 2 cases, patients were asymptomatic, with a pulsatile mass in the groin as the only sign. Pre-operative imaging consisted of duplex ultrasound for diagnosis confirmation. Treatment consisted in defect repair by direct suture or complete revision of the anastomosis. Another treatment option was the excision of a segment of the graft and replacement with additional graft material (Dacron or PTFE). Repair failure was noted by the presence of massive infection that required arterial ligature, complete removal of the graft, followed by amputation.

Conclusion
The development of an anastomotic aneurysm should be viewed as a total failure of the anastomosis. The best therapeutic strategy is the excision of a segment of the graft and replacement with an interponat. In the presence of infection, the only option is to bypass the region through an extra-anatomic procedure and eventually to cover the infected site with a muscular flap.

Tuesday, July 22, 2008
10:30 AM – 10:45 AM and 3:00 PM – 3:15 PM

Therapeutic Strategy for Treating Isolated Iliac Artery Aneurysms

Naoki Fujimura, MD; Kenji Matsumoto, MD; Shigeshi Ono, MD; Toshiaki Hattori, MD; Hideaki Obara, MD, FICA; Yuko Kitagawa, MD; *Department of Surgery, Keio University School of Medicine, Tokyo, Japan.*

Purpose
The purpose of this study is to compare endovascular treatment and open surgical repair of isolated iliac artery aneurysms (IAA) treated at a single institution.

Materials and Methods
The computerized medical records of 23 patients who underwent endovascular or open surgical repair of an isolated IAA caused by atherosclerosis during the 14 years between April 1993 and March 2007 at our institution were reviewed. Eighteen patients were male and the age ranged from 56 to 84 years with the mean age of 76.1 years. Patients who had concurrent abdominal aortic aneurysm (AAA) and patients with a past history of AAA repair were excluded from this study. The indication for treatment was an aneurysm with a diameter of at least 3.0 cm on computed tomographic (CT) scanning. The lesion involved the common iliac artery (1 bilateral, 6 right, 1 left), external iliac artery (3 right, 2 left), and internal iliac artery (1 bilateral, 6 right, 3 left).

Results
Of the 23 patients, 14 patients underwent open surgical repair and 9 patients underwent endovascular iliac aneurysm repair (EVIAR). In the open surgical repair group, bifurcated aortoiliac graft replacement was performed in 4 cases, iliac replacement using a straight prosthetic graft was done in 6 cases, and thrombo-exclusion procedure with ligation of inflow and outflow arteries or aneurysmectomy was done in 4 cases. In the EVIAR group, coil embolization using metallic coils were done in all but 3 cases with common iliac artery aneurysm and underwent femorofemoral crossover bypass at the same time. There were no perioperative deaths and disease related deaths during the observation period in both groups. In the open surgical repair group, 2 patients had adjacent vein injury during the operation, and one of these patients developed deep vein thrombosis at the ipsilateral leg postoperatively but was successfully treated conservatively. The cumulative graft patency rate during the observation period was 100%. In the EVIAR group, immediate technical success was observed in all of the cases and there were no severe complications. However, there was a case of endoleak in the EVIAR group during the observation period and it was treated again using metallic coils with success.

Conclusion
Both groups had excellent technical success and graft patency rates. EVIAR may prove to be the first-line treatment for isolated IAA, especially for high risk patients or patients with anatomical difficulties. However, we think that open surgical repair is currently safer and more reliable for usual good risk patients, as long as the long-term result of EVIAR is not clear.

Tuesday, July 22, 2008
10:30 AM – 10:45 AM and 3:00 PM – 3:15 PM

Graft Quality is the Powerful Predictor of the Vein Graft Destiny

Nobuyoshi Azuma, MD, FICA; Masashi Inaba, MD; Hisashi Uchida, MD; Nobuyuki Asasaka, MD; Tadahiro Sasajima, MD, PhD, FICA, *Professor of Surgery; Vice President, International College of Angiology; Editor, International Journal of Angiology; Division of Cardiovascular Surgery, Department of Surgery, Asahikawa Medical College, Asahikawa, Japan.*

Purpose
Although vein quality is one of the key factors in selecting distal bypass or endovascular angioplasty for infrapopliteal arterial disease, the relationship between vein quality and graft prognosis is not fully investigated. We retrospectively analyzed the impact of vein quality on the biological destiny of vein graft.

Materials & Methods.
Consecutive 322 vein grafts were used as distal bypass conduits in our institution in past 10 years. Excluding vein grafts for patients with dialysis-dependent renal failure, we reviewed long-term results of 216 vein grafts retrospectively. In terms of distal anastomotic site, below-knee popliteal, crural, and pedal artery was 32%, 50%, and 18%, respectively. Vein quality was accessed by intraoperative findings on the basis of both vein graft inner diameter (ID) and distensibility (DT) as the following criteria; Good quality (Gq, n=106); ID$\geq$4mm with good DT; Fair quality (Fq, n= 63); ID$\geq$4mm with poor DT, or 3$\leq$ID<4mm with good DT. Poor quality (Pq, n= 47); 2<ID<3mm with good DT, or 3<ID<4mm with poor DT. Most stenotic or occluded grafts were examined histologically.

Results
The cumulative patency rate at 5 year was 80.5% and in Gq, whereas, that was 63.5% and 46.7% in Fq and Pq, respectively (Gq vs. Fq; p<0.05, Gq vs. Pq; *p<0.001)*. Early graft failure occurred more frequently in Pq veins (5.7% in Gq, 6.3% in Fq, 23.4% in Pq, *p=0.0016*). Midterm graft stenosis due to intimal hyperplasia also occurred more frequently in Pq veins (8.5% in Gq, 22.2% in Fq, 31.9% in Pq, *p=0.0011*).

Conclusions
Vein quality is closely related to not only early graft failure but also midterm graft stenosis due to intimal hyperplasia. A bypass first strategy can be applied in patients with good quality vein. When the vein quality is recognized as poor, graft surveillance should be closely observed.

Author Index

NOTES

NOTES

NOTES