Cancer patients receive new treatment option

Minimally invasive relief from metastasized spine tumors

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A new treatment offers promising pain relief for patients with metastasized tumors of the spine. The American Cancer Society estimates that 30 to 70 percent of the more than half a million people who die of cancer have spine tumors, caused when breast, prostate or other cancers spread to the spine via the bloodstream. Over time, spine tumors cause vertebrae to weaken and collapse in vertebral compression fractures. Ten percent of the 700,000 VCFs that occur each year are estimated to be caused by metastatic spine tumors. Untreated VCFs can create excruciating back pain, impaired mobility and, in extreme cases, paralysis. In addition to further decreasing the quality of life of cancer patients, the pain associated with VCFs can make it difficult for patients to receive chemotherapy or radiation treatments needed to treat their cancers.

Dr. Mark Edge

Historically, fractures caused by metastatic tumors have been treated either through open spinal surgery or two minimally invasive procedures, vertebroplasty and kyphoplasty, in which bone cement is used to stabilize the frail area affected by the tumor. While the latter treatments are similar and are both used for VCFs caused by tumors and osteoporosis, they carry a higher risk of complications when used to treat cancerous tumors because bone cement can leak out of the treated vertebra or cancerous cells could disseminate into the bloodstream and spread the cancer to other parts of the body.

A new option

Patients now have another option in their treatment arsenal with the Food and Drug Administration's May 2007 approval of ArthroCare's Cavity SpineWand for treatment of malignant spinal lesions. After injecting local anesthesia into the area, the physician creates a small incision in the back. A needle is then inserted into the affected vertebra. The inner portion of the needle is then removed and the Cavity SpineWand, a plasma-mediated device, is placed through the cannula into the malignant lesion. Once it reaches the tumor, the device is activated, precisely and gently removing tumor tissue to create a space in the affected vertebra. Medical-grade bone cement is then injected into the open space that is left behind, simultaneously stabilizing the spine while relieving pain. In some cases, the increased mobility and pain reduction patients experience can be instrumental in helping them return to chemotherapy and radiation treatments.

According to Dr. Mark Edge, a neuroradiologist at Gaston Radiology who is certified in the procedure, the treatment usually takes one to two hours, depending on the extent of the tumor and complexity of the patient's anatomy, and more than one spine tumor can be treated at a time. "The Cavity Spine-

(more on page 15)

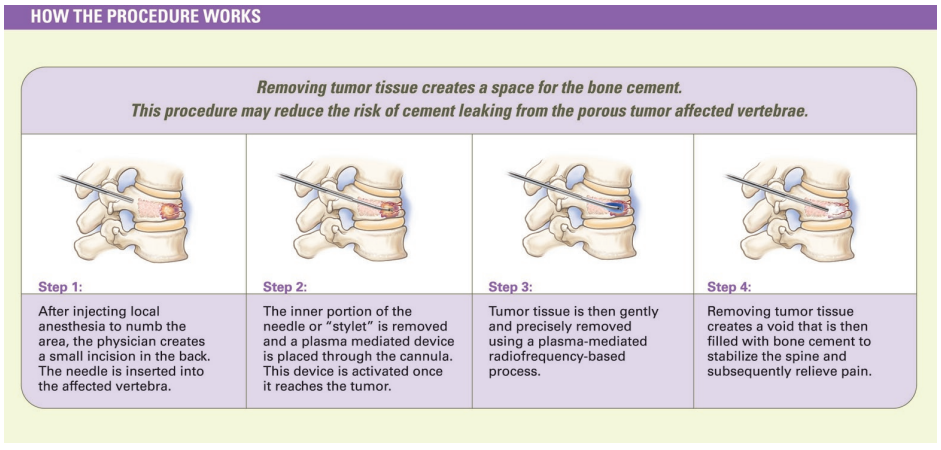

Image courtesy of ArthoCare

ArthroCare's Cavity SpineWand, approved by the Food and Drug Administration this year, offers a relatively safe way to gently and precisely remove malignant tumors of the spine and fill the space with medical bone cement to stabilize the spine and relieve pain caused by vertebral compression fractures.

Cancer treatment

(continued from page 8)

Wand is reserved for exceptional cases of fractures of the spine caused by tumors that weaken the bones of the vertebral column," Edge said. "Therefore, although we've used the procedure over the past couple years, the frequency that it is needed is low, averaging only about one patient every four to six months.

"It is, however, a very useful tool to have at hand for those patients who need it," he added. "Nationwide, several hundred patients have undergone the procedure. When we began, fewer than 40 had been performed nationwide."

Who is a candidate?

The Cavity SpineWand uses Coblation, a patented technology using bipolar radiofrequency to precisely remove soft tissue at low temperatures, generally 40 to 70 degrees Celsius, while minimizing damage to surrounding healthy tissue. The procedure (known as enhanced vertebroplasty) allows a more exacting method than more traditional treatments. "Although we use the procedure somewhat infrequently, there are patients referred to us for fractures of the spine in which conventional measures such as kyphoplasty or vertebroplasty might carry the added risks of nerve damage or spinal cord injury were this procedure not available," Edge explained. "In those patients, it becomes very important to us to be able to offer the SpineWand as a solution."

In terms of success, Edge detailed that cement has been successfully injected "into several fractures with pain relief equivalent to those patients with more typical spine fractures from osteoporosis. ... Our success in pain reduction or relief in those patients exceeds 90 percent," he said. He estimated that while many physicians who currently offer more conventional spine fracture treatments such as kyphoplasty, especially for patients with osteoporosis, will most likely adopt the SpineWand as part of their treatment options, the procedure "is likely to remain in the use of those doctors who work most closely with the oncologists or radiation oncologists."

He warned that, like any procedure, the treatment does not come risk-free but noted that the risks overall are very low. They include bleeding at the operative site, infection, nerve damage, failure to relieve pain, allergic reaction to drugs used during the procedure, and anesthesia risks. He said patients in whom a vertebra is entirely destroyed by a tumor or who have a tumor that is high in the upper back or neck "where our instruments are too large for safe entry into the bone" would not be candidates for the procedure, although he added that he has yet to see any patients who fit such a profile.

Photo courtesy of Gaston Radiology

X-ray guidance is used throughout the procedure to safely and precisely guide the Cavity SpineWand.

Adaptable technology

Edge explained that while the Cavity SpineWand device has added to the treatment options for patients with spine tumors and vertebral compression fractures, its uses are far from tapped. "The device has been used for several years in procedures where tissue needed to be removed in a very controlled manner such as arthroscopic surgery of the joints," he said. "Since its inception, many applications of the technology have evolved, this being one of them. Each application, in its own way, can result in dramatically different ways to treat some disease or injury.

"The same technology, plasma-mediated tissue destruction, can also be used in the discs of the spine to relieve neck and low back pain due to disc bulges or certain types of disc herniation," he added as an example. "We have treated patients with this procedure with excellent results."

In addition to Gaston Memorial Hospital, the procedure also is offered in Charlotte at OrthoCarolina and in Concord at Cabarrus Radiology, although Edge said he knows of no other nearby physicians certified in the Cavity SpineWand treatment. To learn more, visit www.arthrocare.com. ❑