ADVANCED INJECTIONS WITH ULTRASOUND

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GOLDBERG MIGRAINE PROGRAM

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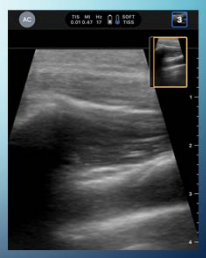
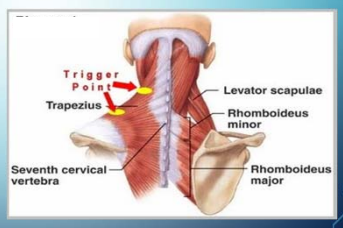
BACKGROUND

- Ultrasound guidance for injections in pain management is an increasingly popular modality
- Benefits: (Chochoran review 2016, 32 RCTs)
  - Reduced adverse effects (vessel puncture, pneumothorax, extravasation)
  - Improves accuracy of needle/injectate placement into target structure → diagnostic blocks
  - Improved patient satisfaction
- Limitations:
  - Training is varied
  - Difficult technique: needle tip vs shaft
  - Weekend courses insufficient
  - 1-2 year interventional fellowships
  - Board certification



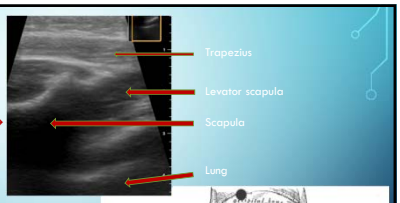
BACKGROUND

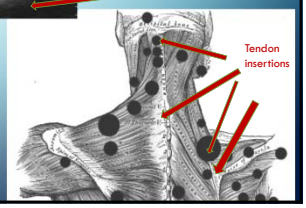
- Indications:
  - Myofascial pain in deep muscle trigger points (NOT tender points of FM)
  - Most common areas shown here
  - The term "trigger point" was coined in 1942 by Dr Janet Travell to describe the following:
    - Tight painful nodule or band in the muscle,
    - Twitch response with palpation
    - Radiates pain distally



BACKGROUND

- Indications:
  - Tendonitis, Tendinosis, Tendon tear →
    - Whiplash spasm →
    - Rotator cuff injury/tears
  - Target Chemodenervation
    - Dystonia: cervical, oromandibular
    - Torticollis
    - Thoracic outlet
  - CRPS – stellate ganglion blocks
  - Nerve blocks
    - Occipital neuralgia
    - Brachial plexus blocks, LOA





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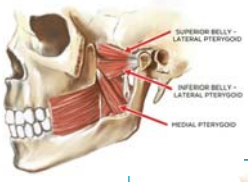

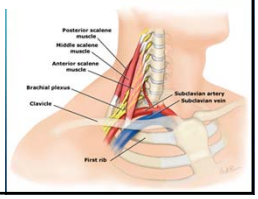

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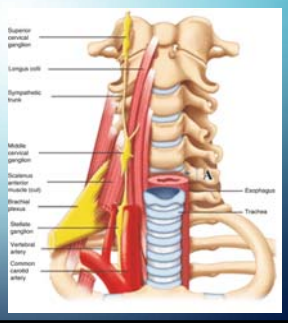

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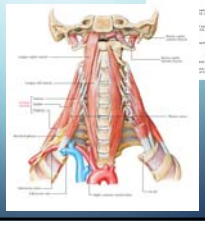
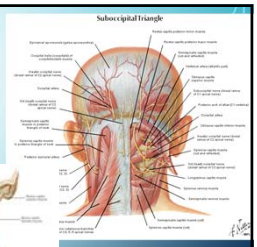
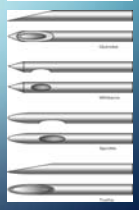




BASICS

- Probes:
  - 2.5-5mHz
  - 7.5-10mHz * Butterfly
  - 10-22mHz


7.5 MHz linear probe



- Needles
  - Hypodermic
  - EMG
  - Spinal (quincke, whittacre, sprotte, tuohy)

BASICS

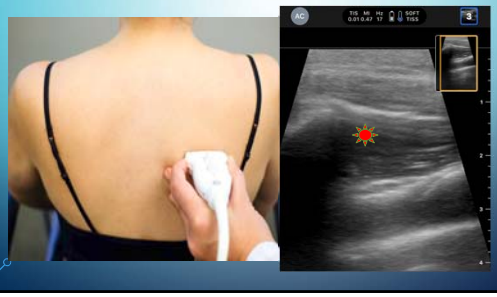
Autonomic Sensory Motor

- Injectate:
  - Local anesthetics – Na+ ch blockade
    - Nesacaine
    - Lidocaine
    - Bupivicaine
  - Botulinum toxin for chemodenervation
  - Regenerative therapies: PRP, prolotherapy, stem cells, A2M, etc

LIVE DEMONSTRATION – TRAPEZIUS

LIVE DEMONSTRATION – LEVATOR SCAPULA

LIVE DEMONSTRATION – RHOMBOID



LIVE DEMONSTRATION – SEMISPINALIS CAPITUS

LIVE DEMONSTRATION – GREATER OCCIPITAL NERVE

LIVE DEMONSTRATION – LATERAL AND MEDIAL PTERYGOID, TEMPORALIS, MASSETER

LIVE DEMONSTRATION – ANTERIOR AND MIDDLE SCALENE AND BRACHIAL PLEXUS

LIVE DEMONSTRATION – LONGUS COLLI AND STELLATE GANGLION

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- Karen mortgenschtern
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