Let's Discuss Sympathetic Blocks

Janette Elliott, RN-BC, MSN, AOCN
ASPMN 19th Annual Conference
September 2009

Types of blocks

- Stellate
- Celiac plexis
- Lumbar sympathetic
- Hypogastric

Clinical considerations

- Off anticoagulation meds
  - Stop coumadin 5-7 days in advance with prescriber permission
  - Lovenox—check with prescriber
- Lumbar/Abdominal blocks
  - Able to tolerate being on abdomen ~ an hour
    - Positioning
    - Breathing
    - Comfort

Contraindications in all

- Coagulopathies
- Infections

Possible after effects

- Local discomfort
- Possible nerve damage
- Bleeding
- Infection

Stellate

- Indications
  - Acute herpes zoster & PHN
  - Acute frostbite
  - CRPS
  - Refractory angina
  - Phantom limb pain
  - Cancer pain of head, neck & upper extremities
  - Vascular insufficiency
    - Raynaud's syndrome
    - Frostbite
    - Scleroderma
    - Obliterative vascular disease
  - Some atypical vascular headaches
- Little prospective clinical data

Contraindications

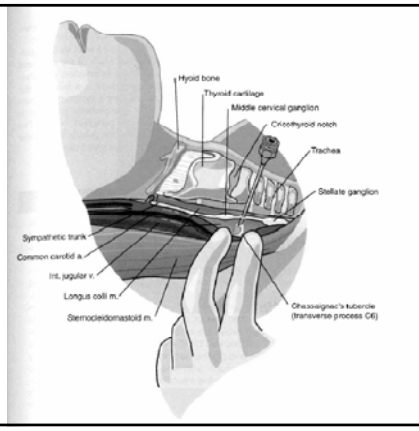
- Anticoagulants
- Contralateral pneumothorax or pneumonectomy
- Recent MI
  - Decreases cardiac sympathetic firing leading to bradycardia

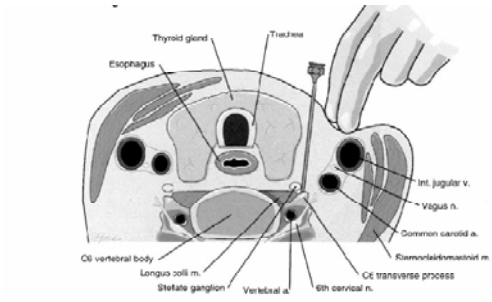
Relative contraindications

- Glaucoma
  - May worsen glaucoma
- Impaired cardiac stimulus conduction
  - Stellate can increase bradycardia

How is the block done

- Anterior** or posterior approach is possible
  - Sitting or supine
  - Palpate for C6 transverse process
  - Needle straight back
  - Local anesthetic injectate
    - bupivacaine, ropivacaine
    - Phenol or alcohol for neurolytic injections
- With or without fluoroscopic guidance and contrast
- Posterior approach
  - used if infection, trauma or tumor precludes anterior approach
  - if neurolysis is desired





Horner's syndrome

- Ptosis
- Miosis

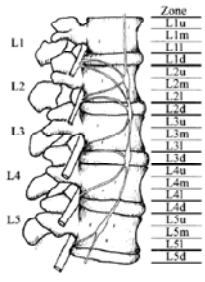
Potential side effects

- Expected
  - Horner's syndrome
  - Extremity warms to touch
- Possible
  - Hoarseness
  - Dysphagia
  - Feeling of "lump in throat"

Potential Complications

- Vascular injury
  - Injury to carotid or jugular
  - Hematoma and potential spinal cord injury
- Nerve injury
  - Injury to nerve roots
- Pulmonary injury--pneumothorax
- Spread of local anesthetic
  - Vascular
  - Epidural/intrathecal
    - "High spinal"
      - Intubate until local anesthetic wears off

Lumbar sympathetic nerves

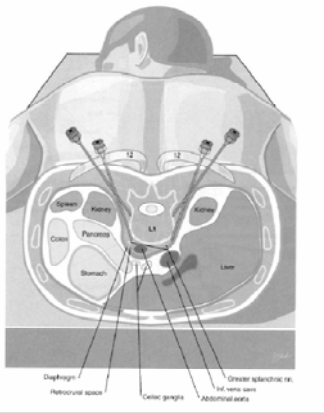


How these blocks are done

- Sterile prep
- Measure 2 ½-3 ½ inches from spine vertebrae—fluoro assist
  - Celiac---L1
  - Lumbar sympathetic—L2
  - Hypogastric—L5
- Insert needle to touch vertebrae
- Redirect needle so it passes by the vertebrae
- Contrast dye and fluoro to assure placement
- Infuse injectate
  - Bupivacaine, ropivacaine
  - 50% alcohol or 6% Phenol for neurolytic blocks

Celiac Plexis Block

- Indications
  - High abdominal cancers
  - Acute pancreatitis
    - Blocks may be done daily
  - Acute pain r/t hepatic artery embolization
  - Abdominal “angina” associated with visceral artery insufficiency
  - Chronic pancreatitis in select patients



Potential side effects

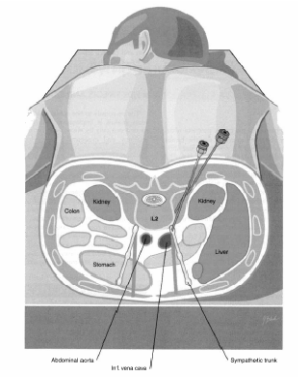
- Diarrhea
- Hypotension
- Increased bowel motility
  - Diarrhea ~50% of patients
  - Cramping
- May decrease nausea and vomiting

Potential complications

- Paralysis
- Neurologic deficits
- Discitis if too close to the disc
- Pneumothorax
- Kidney or ureter trauma if needle placed wrong
- Thoracic duct trauma is needle placed wrong

Lumbar sympathetic block

- Indications
  - CRPS
  - Circulatory insufficiency of legs
    - PVD, diabetic neuropathy, gangrene, Raynaud's, frostbite, Buerger's disease
  - Phantom pain
  - Possibly discogenic pain with pseudo-sciatic radiation
  - Hyperhydrosis
  - Pelvic malignancies--neurolytic
  - Deafferentation pain syndromes--neurolytic

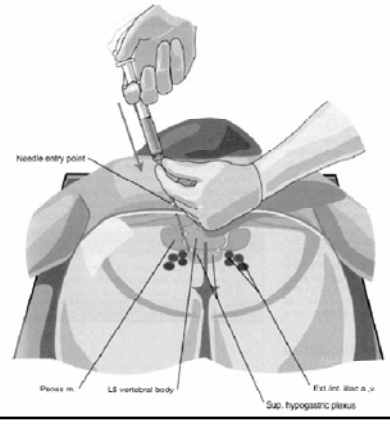


Potential side effects

- Damage to viscera
- Intraspinal injection
- Infection
- Bleeding
- Discitis

Hypogastric block

- Indications
  - Gynecologic disorders
    - Endometriosis, Adhesions, Chronic pelvic pain
  - Other lower abdominal pain problems
    - Interstitial cystitis, irritable bowel syndrome, pain after surgeries
  - Lower abdominal and pelvic cancers
    - Bladder, uterus, vagina, prostate, rectum



Monitoring during procedure

- Patent IV
- +/- sedation
- Respiratory status—constant O2 sats
- ECG monitoring
- BP q5min
- Patient comfort
- Constant “eyes on”

Monitoring after procedure

- 45-60 minutes
- Institutional monitoring for moderate sedation

Patient follow-up

- Patient specific
  - Determined by patient condition
- Clinician preference

Patient/family Education

- What it is
- How it's done
- Expected benefits
- Potential expected and unexpected side effects/complication
- When, where, how, monitoring, pain control during, post-procedure care
- Length of effect
- Can it be repeated? How often?

References

- Murata, Y. et al. (2003) Variations in the Number and Position of Human Lumbar Sympathetic Ganglia and Rami Communicantes, *Clinical Anatomy*, 102-113.
- Raj, P.P, et al (2008) Interventional Pain Management. Saunders.
- Waldman, Steven D. (2004) Atlas of Interventional Pain Management, 2nd Ed., Saunders