

Episode 136: Celiac Plexus Block and Dexmedetomidine

On this episode: Drs. Gillian Isaac and Jed Wolpaw

In this 136th episode I welcome Dr. Gillian Isaac back to the show to discuss another 2 ABA keywords, Celiac Plexus Block and Dexmedetomidine.

[All Keyword Episodes](#)

Questions & Notes

Click → jump to answers/notes.

GREAT RESOURCES

CELIAC PLEXUS BLOCK

Word association

Anatomy

Distribution

Celiac plexus block would not effectively treat pain from malignancy from which of following?

- A) Uterus
- B) Stomach
- C) Pancreas
- D) Gall bladder

Discussion

Celiac plexus block provides effectively treats pain primarily associated with primary cancers located at each of the following except?

- A) Adrenal
- B) Liver
- C) Pancreas
- D) Sigmoid colon
- E) Stomach

Discussion

Indications

Intractable pain d/t unresectable pancreatic carcinoma most effectively treated with?

- A) Bilateral neurolytic intercostal block T10-T12
- B) Bilateral sympathetic block w/ phenol
- C) Celiac plexus block w/ alcohol
- D) Epidural block w/ phenol
- E) Subarachnoid block w/ alcohol

Discussion

Most reliable signs of successful block?

Most common complication of celiac plexus block?

- A) Hypotension
 - B) Seizure
 - C) RP hematoma
 - D) Constipation
-

Most likely effect of celiac plexus block for abdominal operation?

- A) Bowel distension
- B) Hypotension
- C) Incisional analgesia
- D) Muscle relaxation
- E) Urinary retention

Discussion

54M receives 25ML 50% alcohol, 0.25% bupivacaine solution for celiac plexus block. Next 20 min BP 130/75 → 85/50. Most likely cause?

- A) Intravascular injection
- B) Retroperitoneal hemorrhage
- C) Splanchnic vasodilation
- D) Subarachnoid blockade
- E) Tension pneumothorax

Discussion

Each of following is complication of celiac plexus block w/ 0.5% lido 40ml except?

- A) Hematuria
- B) Ileus
- C) Postural hypotension
- D) Retroperitoneal hematoma
- E) Weakness of hip flexors

Discussion

Each of following complication or side effect of neurolytic celiac plexus block except?

- A) Constipation
- B) Hematuria
- C) Orthostatic hypotension
- D) Paraplegia
- E) Pneumothorax

Discussion

Summary**DEXMEDETOMIDINE****Mechanism of action****Properties****Dosing****Sedation of which following drugs most likely to resemble normal sleep?**

- A) Propofol
- B) Midazolam
- C) Dexmedetomidine
- D) Ketamine

Discussion

Least likely side effect of dexmedetomidine in healthy patient is?

- A) Respiratory arrest
- B) Bradycardia
- C) Sinus arrest
- D) Hypotension

Discussion

Post anesthesia shivering can be treated w/ all of following except?

- A) Naloxone
- B) Physostigmine
- C) Mag sulfate

D) Dexmedetomidine
Discussion

Which of following effect on MAC?

- A) No change
 - B) Increase
 - C) Decrease
 - D) Acute: increase; chronic: decrease
- Discussion

Which of following least effective treatment for pruritis from neuraxial opiates?

- A) Nalbuphine
 - B) Dexmedetomidine
 - C) Diphenhydramine
 - D) Propofol
- Discussion

Word association

Review

Great resources

- Open Anesthesia
 - o [Distribution, indications, complications, side effects](#)
- Anesthesia Hub

Celiac plexus block

Word association

4:48

- Diarrhea
- Hypotension

Anatomy

5:45

- Thoracic sympathetic ganglia branches to greater and lesser splanchnic nerves to pass below diaphragm → periaortic sympathetic ganglion, aka Celiac Plexus
- Generally, around L1, but can range T12-L2
- Retroperitoneal, anterolateral to aorta at origin of celiac artery
- Fibers send post-ganglionic innervation to most intrabdominal organs, along with pain fibers, to pretty much everything **but** left colon

Distribution

6:55

- Distal stomach to mid transverse colon
- Sympathetic preganglionic are from T5-T12

Celiac plexus block would not effectively treat pain from malignancy from which of following?

7:15

- A) Uterus
- B) Stomach
- C) Pancreas
- D) Gall bladder

Discussion

- o Uterus in pelvis, not peritoneum
- o Pelvic organs supplied by hypogastric plexus

Celiac plexus block provides effectively treats pain primarily associated with primary cancers located at each of the following except?

8:30

- A) Adrenal
- B) Liver
- C) Pancreas
- D) Sigmoid colon
- E) Stomach

Discussion

- Think of sigmoid colon in pelvis, innervated by hypogastric

Indications

9:07

- Block injectate
 - Image-guided injection of alcohol or phenol
- Neurolytic sympathetic blockade for malignancy of typically pancreas

Intractable pain d/t unresectable pancreatic carcinoma most effectively treated with?

9:43

- A) Bilateral neurolytic intercostal block T10-T12
- B) Bilateral sympathetic block w/ phenol
- C) Celiac plexus block w/ alcohol
- D) Epidural block w/ phenol
- E) Subarachnoid block w/ alcohol

Discussion

- C
- Knowing nuance of phenol vs alcohol probably not being tested
- Can use dexmedetomidine to block sympathetic response from intra-abdominal surgery

Most reliable signs of successful block?

10:55

- Disappearance of pain
- Presence of hypotension

Most common complication of celiac plexus block?

11:15

- A) Hypotension
- B) Seizure
- C) RP hematoma
- D) Constipation

Most likely effect of celiac plexus block for abdominal operation?

11:39

- A) Bowel distension
- B) Hypotension
- C) Incisional analgesia
- D) Muscle relaxation
- E) Urinary retention

Discussion

- C covers skin, not viscera
- A is opposite of what you'd expect

54M receives 25ML 50% alcohol, 0.25% bupivacaine solution for celiac plexus block. Next 20 min BP 130/75 → 85/50. Most likely cause?

12:15

- A) Intravascular injection
- B) Retroperitoneal hemorrhage
- C) Splanchnic vasodilation
- D) Subarachnoid blockade
- E) Tension pneumothorax

Discussion

- All of these can happen, but MOST likely is C
- Most serious complication
 - Paralysis from unrecognized subarachnoid injection of neurolytic drugs
- Other complications
 - Local anesthetic toxicity
 - Spinal/epidural injection
 - Aortic or vena cava puncture/bleed
 - Retroperitoneal bleed
 - Visceral organ injury
 - Pneumothorax

Each of following is complication of celiac plexus block w/ 0.5% lido 40ml except?

13:52

- A) Hematuria
- B) Ileus
- C) Postural hypotension
- D) Retroperitoneal hematoma
- E) Weakness of hip flexors

Discussion

- B bc expect diarrhea

Each of following complication or side effect of neurolytic celiac plexus block except?

15:06

- A) Constipation
- B) Hematuria
- C) Orthostatic hypotension
- D) Paraplegia
- E) Pneumothorax

Discussion

- A

Summary

15:26

- Celiac plexus block to treat abdominal organ pain
- Usually malignancy of pancreas
- Up to left side of colon
- Excluding pelvis

Dexmedetomidine

16:50

- Open Anesthesia: CNS, cardiovascular, hemodynamic effects
- Only ever FDA-approved for ICU sedation

Mechanism of action

18:41

- More selective α_2 agonist than clonidine \rightarrow inhibition of release of NE \rightarrow analgesia
- Compared to clonidine, 7x more selective, shorter $t_{1/2}$ at 1.5 hours
- Time to peak effect: 15 min

Properties

19:08

- Potent analgesia
- Sedation, anxiolysis
- Anti-sialagogue
- Promote hemodynamic stability
- Attenuate opioid-rigidity in animals
- ?Shivering
- Mimic normal sleep patterns

Dosing

19:38

- Load 1mcg/kg over 10 min
- Most commonly see bradycardia

Sedation of which following drugs most likely to resemble normal sleep?

20:04

- A) Propofol
- B) Midazolam
- C) Dexmedetomidine
- D) Ketamine

Discussion

- o C
- o Other drugs like quetiapine has not been show in large trials to have similar restful effects

Least likely side effect of dexmedetomidine in healthy patient is?

20:59

- A) Respiratory arrest
- B) Bradycardia
- C) Sinus arrest
- D) Hypotension

Discussion

- A – we prefer this over propofol

Post anesthesia shivering can be treated w/ all of following except?

21:55

- A) Naloxone
- B) Physostigmine
- C) Mag sulfate
- D) Dexmedetomidine

Discussion

- A
- You know meperidine is used for shivering, so naloxone would have opposite effect

Which of following effect on MAC?

23:48

- A) No change
- B) Increase
- C) Decrease
- D) Acute: increase; chronic: decrease

Discussion

- C
- 35-50% decrease, then more likely for hypotension

Which of following least effective treatment for pruritis from neuraxial opiates?

24:25

- A) Nalbuphine
- B) Dexmedetomidine
- C) Diphenhydramine
- D) Propofol

Discussion

- A, C we use

- B
- Treat pruritis by ↓ narcotic use

Word association

25:28

- Bradycardia
- hypotension

Review

25:36

- Highly selective α_2 agonist
- Faster onset, shorter duration vs clonidine
- Analgesia
- Can cause hypotension like propofol
- More brady than propofol
- Evidence for reducing delirium in ICU, alcohol withdrawal
- More normal sleep than other sedatives

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