Celiac plexus block

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Introduction

- A celiac plexus block is an injection of local anesthetic into or around the celiac plexus of nerves that surrounds the aorta.
- Involves blocking of sympathetic chain.
- Prevents transmission of pain impulses from the target organs to the brain.
Celiac plexus block refers to temporary disruption of pain transmission via the celiac plexus and is accomplished by injecting corticosteroids or long-acting local anesthetics.

celiac plexus neurolysis, refers to permanent destruction of the celiac plexus with ethanol or phenol.

Imaging guidance for celiac plexus neurolysis is most often performed with multidetector computed tomography (CT), which has superseded the use of fluoroscopy- or ultrasonography (US)–guided techniques.
COMMON NEUROLYTIC BLOCKS

- Stellate ganglion block
- Thoracic sympathetic chain block
- Coeliac plexus block
- Lumbar sympathetic block
- Superior hypogastric block
- Ganglion impar block
Celiac plexus block
HISTORY

1914 – KAPPIS – first block in lateral position


1927 – LABAT – now followed retrocrural approach in prone position.

1947 GAGE & FLOYED – use in pancreatitis

1971 GORBITZ – use of plain x ray

1979 HEGEDEUS – fluroscopic guidance.

1982 – SINGLERS – CT guided transcrural approach

1983 – ISCHIA – posterior transaortic approach
Relation
INDICATIONS

Chronic malignant & non malignant visceral pain

1. Upper g.i. malignancy
2. Chronic pancreatitis
3. Acute pancreatitis
4. Repeated abdominal surgeries
5. HIV related sclerosing cholangitis
6. Diagnostic purposes
7. Abdominal angina
Pathophysiological causes of pain in pancreatitis

1. Edematous distention of the pancreatic capsule
2. Local peritonitis resulting from enzyme release, causing a chemical burn of the peritoneum,
3. Ductal spasm from obstruction of the bile duct

- Radiation of pain to the back d/t anatomical location of pancreas retroperitoneally
Acute Severe Pancreatitis
Pathophysiology

Injury or disruption of pancreatic ducts → leakage of active pancreatic enzymes → autodigestion

Breakdown of cell membranes → edema → vascular damage, hemorrhage, necrosis → inflammatory mediators → Shock, MODS, .....
CONTRAINDICATIONS

ABSOLUTE

- Anti coagulant therapy
- Coagulopathy
- Anti-blastic cancer therapy
- Bowel obstruction
- Patient on disulfuram therapy
CONTRAINDICATION

RELATIVE

- Drug seeking behaviour to pain
- Patient on CNS depressant drugs
- Liver abnormalities
Chronic Pain (Non-Cancer-Related)

1) systemic medications:
   - NSAIDs, opioid analgesics, anticonvulsants, antidepressants
2) spinal and epidural analgesia
3) peripheral nerve blocks
4) sympathetic nerve blocks
5) other techniques: TENS, spinal cord stimulation, neuroablation
   - (surgical and chemical neurolysis)
Celiac Plexus Block for Cancer of Pancreas

- Celiac Plexus
- Kidney
- L1 Vertebra
- Abdominal aorta
- Inferior Vena Cava
- Inferior View
- Outline of left 12th rib
- Dorsal spine of L1
Positioning

- Prone with pillow placed under the abdomen _posterior approach_
- Right lateral decubitus with pillow under the flank _one needle technique_
- Supine position _anterior approach_
contd

- Hydration & electrolyte balance
- Analgesic
- Monitoring _EKG, pulse oximetry
- NIBP
- Oxygen
TECHNIQUE

Posterior approach
- Retrocrural
- Antecrural
- transaortic
- transcrural

Anterior approach
Other approaches

- Transintervertebral disc
- Endoscopic dennervation
- Intraoperative injection
- Fluorescopic guided
- Ct scan guided
- Ultrasound
- Contineous block via catheter
RETROCRURAL APPROACH

Coeliac Plexus Block
RETROCRURAL APPROACH

- Bilateral Posterior approach
- Splanchnic block
- Drug deposited behind the crus of diaphragm
MARKINGS
ANTECRURURAL APPROACH

- Unilateral approach
- Right sided only
- Needle placed anterior to crus of diaphragm.
MARKINGS
Anterior approach
Anterior Approach to Celiac Plexus
CONTINUOUS PLEXUS BLOCK
CT guided
COMPLICATIONS

CHEMICAL

ALCOHOL
FACIAL FLUSHING, PALPITATIONS, DIAPHORESIS

PHENOL
TRANSIENT TINNITUS, FLUSHING, MALAISE
CNS STIMULATION, MYOCLONUS,
SEIZURES, HYPERTENSION, ARRHYTHMIAS, HEPATIC & RENAL INSUFFICIENCY
ADVANTAGE OF COELIAC PLEXUS NEUROLYSIS

- Better long term pain relief
- Decrease drug dose for maintenance
- Better quality of life
- Improved performance status
- Overcomes the G.I.T effects of opioids
- ↑In weight and ↑survival rate
FAILURE DUE TO

- Delayed application
- Tumour extension
- Poor technique
LOCAL ANAESTHETICS

- Xylocaine_1% solution preservative free
  15 to 20ml.
- Prevents pain by blockage of conductance.
- T1/2 2hrs
- Avoid if hypersensitivity to amide
- Causes malignant hypothermia
LOCAL ANAESTHETICS

- 0.25% BUPIVACAINE PREFFERED FOR INTERMITTENT ADMINISTRATION

- 6-8 ml/hr OF 0.1% BUPIVACAINE PREFFERED FOR CONTINUOUS ADMINISTRATION

- KEPT FOR MAXIMUM OF 7 DAYS
THANK YOU
Let It Snow

Merry Christmas