Cancer pain management

conservative management &

Interventional techniques

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GUJARAT PAIN CLINIC
GPC
AHMEDABAD
Pain
the 5th vital sign™
American Pain Society

WHAT DO WE TREAT AT PAIN CLINIC ?

- Back and Neck Pain
- Radiculopathy (pain originating in the neck or back, running down the arm or leg)
- Prolapsed Intervertebral Disc
- Spondylolisthesis / lysis
- Spinal Stenosis
- Post Laminectomy pain
- Cancer pain
- Trigeminal Neuralgia
- RSD—Reflex Sympathetic Dystrophy (CRPS 1 or 2)
- Myofascial pain
- Rib fractures
- Headaches
- Shingles/Herpes Zoster
- Diabetic Neuropathy Pain
- Vascular (ischemic) Pain
- Any Chronic Pain Syndrome

What you can expect from a pain specialist

Pain Management Specialist is valuable resource in pain physiology/ pharmacology & providing additional treatments

Not only interventions

Thorough assesment of patient

Management of all types of pain

Adjustment of dose & side effects

Definition of pain

Pain is an unpleasant sensory and emotional experience associated with actual and potential tissue damage or described in terms of such damage.

Pain is always subjective.

IASP (International Association for the Study of Pain)

Patient suffering from pain: what should we do?

- Assessment of pain(s):

☺ history
(ask patients, relatives and professional caregivers)

☺ validated assessment tools

☺ physical examination, including neurological

☺ complementary tests, if/when appropriate, in order to answer specific questions

Patient suffering from pain: what should we do?

2. Diagnose the Pain(s):
   - ☺ Origin(s):
     primary disease, treatments, other
   - ☺ Type of pain:
     nociceptive, neuropathic
   - ☺ Mecanism of pain
   - ☺ Different dimensions of the pain experience
     and other symptoms

Origin of pain in cancer patients

1. Underlying disease (78%)

2. Treatments (19%)
Chemotherapy: eg, mucositis, post-chemotherapy neuropathies
Radiotherapy: eg, post-radiation plexopathies
Surgery: eg, post-thoracotomy pain

3. No direct relationship with one or the other (3%)
Ex: postherpetic neuralgias,
inflammatory or degenerative arthropathies,
diabetic neuropathies,…

Types of pain:

Nociceptive pain:

- Results from mechanical, thermal, or chemical excitation of nociceptors
- widely distributed in skin, subcutaneous tissue, bone, muscle, connective tissue, vasculature, and viscera
- Experienced as an aching or throbbing pain, sometimes sharp
- Opioid-responsive

Neuropathic pain

- Results from actual damage to or irritation of nerve, or altered function of a nerve

- May be mediated by N-methyl daspartate (NMDA) receptors

- Pain described as burning, tingling, shooting, electric-like, etc.

- May be opioid resistant or may require higher doses of opioids

History of pain

How did the pain begin?

Localisation(s) Intensity

Temporal characteristics - Does it have a periodicity? How long?

How is the pain described: words used by the patient (gives clue to the underlying etiology/sensation and emotional component)

What improves the pain? Types of therapies tried and what benefit they had

History of pain

What makes the pain worse?

How does the pain impact the patient's life? (home, friends, work)

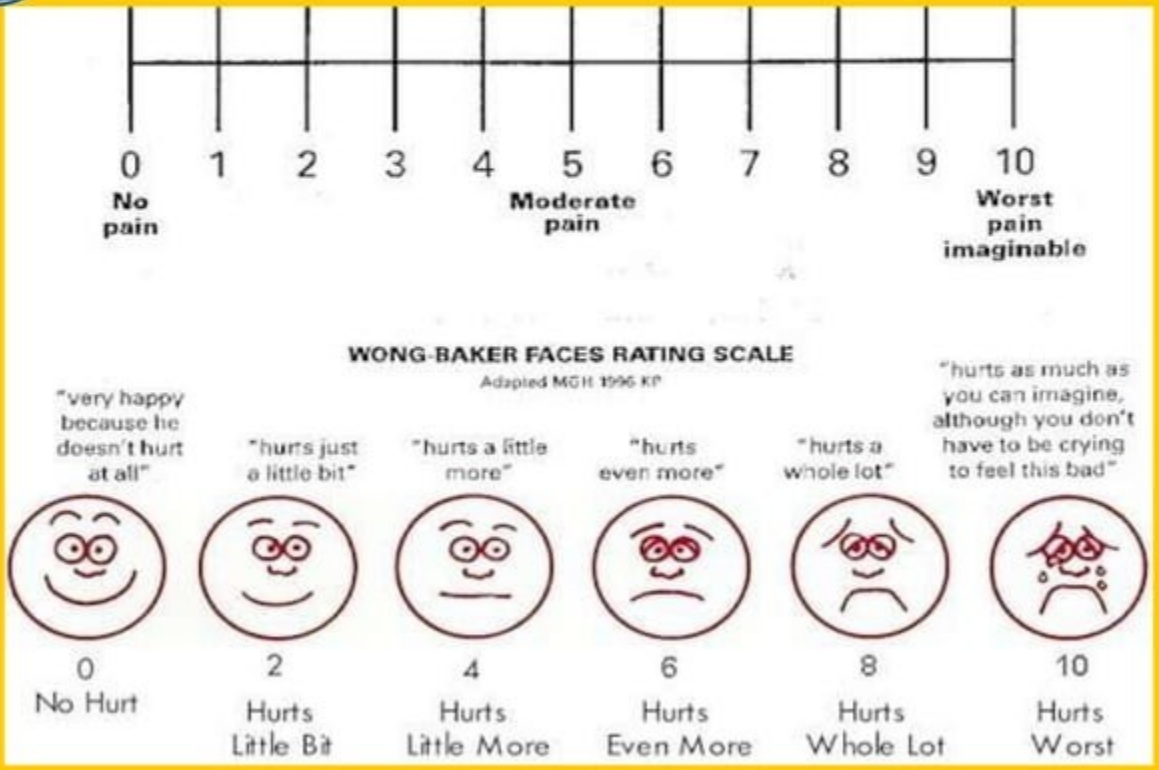
Patient's understanding of pain-Important elements in past medical and psychological history

Assessment of pain intensity

Visual analog scale:

Numerical scale:

Categorical scale:


0 1 2 3 4 5 6 7 8 9 10
No pain
Moderate pain
Worst pain imaginable
WONG-BAKER FACES RATING SCALE
Adapted MCH 1996 KP
"very happy because he doesn't hurt at all"
"hurts just a little bit"
"hurts a little more"
"hurts even more"
"hurts a whole lot"
"hurts as much as you can imagine, although you don't have to be crying to feel this bad"
0 No Hurt
2 Hurts Little Bit
4 Hurts Little More
6 Hurts Even More
8 Hurts Whole Lot
10 Hurts Worst

Benefits of a systematic pain assessement

- Identification of patients in pain, even if they don't complain
- Active role for the patient, and an attentive ear
- Prescription of effective treatments
- Monitoring of treatment effects and pain evolution
- Facilitation of communication between doctors, nurses and other healthcare professionals

Treatment of pain

- Early identification and systematic multidimensional assessment
- Symptomatic medical treatments
- Non-medical approaches
- Explanations to patients and family, patient and family education
- Communication between professionals: give the diagnosis to nurses and tell them what to look for and when to tell you what!
- Reassessments at regular intervals

WHO analgesic ladder



Step 1

Non opioid analgesics

NSAIDS

Paracetamol :

Physical therapy

Psychotherapy

Step 2: Codein

- Biotransformation into morphine by Cyt. P450.
- Iso-enzyme absent in 7-10% caucasians.
  In those cases, codein will probably be poorly effective
- Dose: 30-60 mg/4h

Step 2: tramadol

- Opioïd (week affinity for the μ recept) + noradrenergic effect (noradrenaline and serotonin)
- Peak plasma concentration: approx. 70 min, prolonged in the elderly
- T1/2 - 6 h, prolonged in liver failure
- Kidney elimination of tramadol and its metabolites
- Doses:initially: 50 mg/6-8h and 15-20 mg breakthrough(analgesc effect: 3-7h with chronic administration)
  maximal studied dose: 400 mg/d.
  In the elderly > 75 yrs: 300 mg

Step 2: tramadol

Side effects:

- Frequent nausea/vomiting
- dizziness
- sweating
- dry mouth
- constipation
- convulsions

Step 2: tramadol

Potentially dangerous drug interactions with

- antidepressants: SSRIs, tricyclics, MAOI:
- serotoninergic syndrome

Step 3: initiation of treatment

Morphine is the narcotic of first choice,

it is the most cost-effective

Give explanations to the patient,

patient and family education

- Start with a short acting substance; oral morphine
- A. Opioid naive patient:5 mg/4h to max 360 mg/day
- B. Patient previously treated with another opioid (ex.: step2):Start at least by the equi-analgesic dose!

Step 3: dose titration

- Increases by approx. 30%
- Regular doses + breakthroughs taken in 24h

$$\frac{\text{taken in 24h}}{6} = \text{new 4 hourly dose}$$

- ☺ Adjust breakthrough doses (4 hourly dose)
- ☺ Reassess if need for more than 3 breakthroughs/day

Reassess at regular intervals
Adapt doses by approx. 30%

Indications for transdermal fentanyl

- Not a first choice!
- Stable pain
- Effective dose determined by a short acting opioid
- Swallowing difficulties, alteration of drug absorption or other intolerances to the oral route

Contratindications for transdermal fentanyl

- Economical considerations: expensive +++++
- Acute pain
- Unstable pain
- Skin problems
- Generalised edema

Breakthrough pain

In terminally ill cancer patient:

While on continuous analgesics

the pain breaks through the protective blanket of analgesics, causing severe agony to the patient

This bout of severe pain usually lasts for 30-60 minutes and thereafter subsides

Breakthrough pain

- Fentanyl OTFC (oral transmucosal fentanyl citrate)

OTFC medicated lozenge promptly aborts the bout of breakthrough pain and significantly improves quality of life of cancer patients

- OTFC lozenges come in the convenient form of a `lolly-pop''
- OTFC contains 200 mcg of fentanyl
- pleasantly tasting too
- starts acting immediately as it has a rapid onset of action & a short duration of effect

Morphine: feared effects

– Addiction

Almost never in a well managed pain treatment

– Physical dependence

Means withdrawal when medication abruptly stopped or

in the case of administration of an antagonist

– Tolerance

Need to increase doses in order to maintain the same effect- Almost never a problem in clinical practice

Morphine: side effects

Classical:

- nausea, vomiting (prevent)
- constipation (systematically prescribe laxatives)
- drowsiness
- Sometimes also:

  Sweating, itching, urinary retention

Morphine: side effects

- Nausea/vomiting: prevent
  for eg. Metoclopramide

- 10 mg po if occasional episodes (breakthrough only)if necessary, 10 mg/4h + 10 mg breakthrough

- alternative: haloperidol
  1 mg po if occasional episodes if necessary, 1 mg/12h + 1 mg breakthrough

- NB: both metoclopramide and haleperidol can be given sc

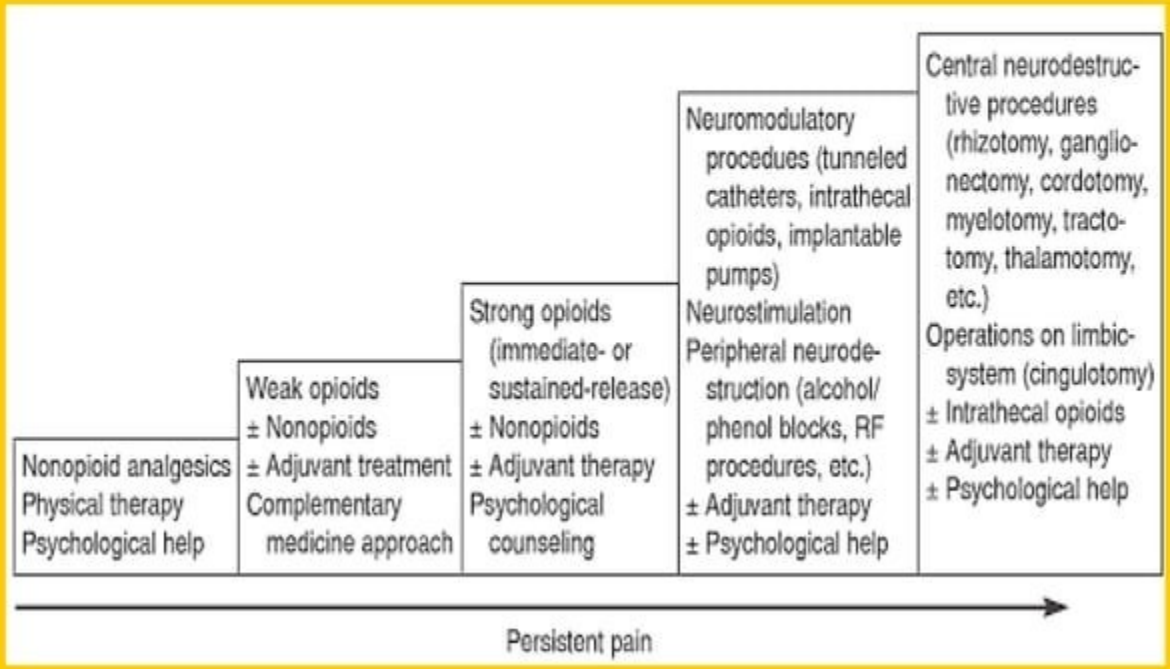
Morphine: side effects

Constipation: to be systematically prevented:
stimulant laxative:
eg: Na picosulfate 10 drops morning + evening,
to be adjusted

alternatives: bisacodyl, senne derivatives +

osmotic:eg. lactilol: 10 mg tds
reassess min. twice a week and adjust

Approach for Cancer Pain Management-interventions



Advanced Treatments

- Intraspinal opioid administration
- Radiofrequency ablation
  - Intralesional
  - Specific nerves / ganglion
- Vertebroplasty/kyphoplasty
- Neurolytic blocks

Intraspinal Opioids

- Intrathecal vs epidural opioid administration
- Dose conversion intrathecal to po 1mg : 300mg
- Implanted programmable pump with several programming options
- Fewer side effects

Intraspinal Opioids

Patient Selection:

- Intractable pain >5/10
- Daily PO MSO4 equivalent of > 200mg w/ or w/out intolerable SEs
- Intolerable SEs @ lower doses

Life expectancy : > 4-6 months





Radiofrequency Ablation intralesional

- High frequency, alternating current emitted through electrode placed within tumor via probe
- Tissue heated to 113° for 10-15 min
- 1st reported 1990
- Liver, lung, kidney, bone, heart, breast, adrenals
- Leads to cell death through heat

Radiofrequency Ablation

- Local tumor debulking with pain relief
- Percutaneous guided
- Outpatient
- No bone marrow exposure to external beam radiation
- Minimal SEs

Radiofrequency Ablation

- Patient Selection:
- Liver: <3-4cm, no multiple metastases
- Kidney: <4cm, one kidney, poor surgical candidate
- Lung: 3cm; 1-2 tumors
- Bone: 1 or 2 sites

Radiofrequency Ablation specific nerves/ganglion

- Selective block
- High precision
- Minimal side effect

But

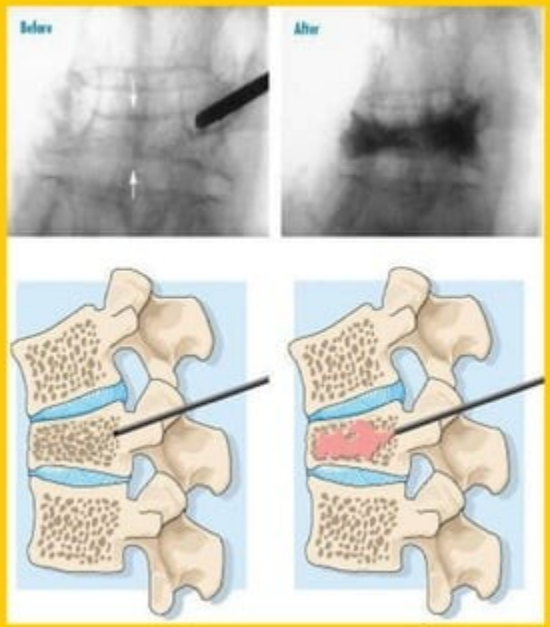
- Cost
- Delay onset



Vertebroplasty

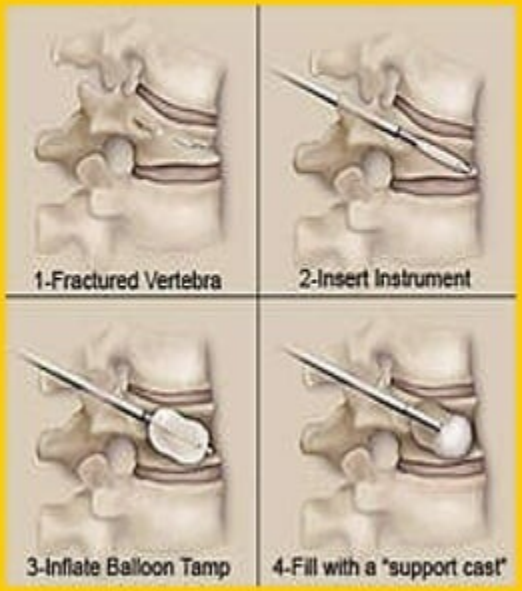
- Used to treat painful vertebral body collapse/fracture caused by osteoporosis or tumor

- Vertebroplasty vs kyphoplasty: same procedure except kyphoplasty helps restore the height of the vertebral body



Kyphoplasty

- • Center of vertebral body accessed with a tube
- • Balloons inserted through the tube and inflated
- • Cavity formed and balloons removed
- • Cavity filled with cement



Vertebroplasty/Kyphoplasty

- Patient Selection:

Patient with back pain secondary to fracture
from
bone metastases/tumor with unstable spine

Neurolytic Blocks

Injection of alcohol or phenol to deaden the nerve causing pain

- Celiac plexus block
  (pancreatic CA, CA of upper abdomen)
- Ganglion impar block
  (perineal pain)
- Superior hypogastric plexus block
  (pelvic tumors)

Example:

Management of

Upper Abdominal Pain

Coeliac plexus block

Etiology of Upper Abdominal Cancer Pain

- Obstruction and distension of hollow viscera
- Autonomic plexus or vessel infiltration
- Somatic sensory nerve infiltration
- Peritoneal seeding
- Inflammatory reaction from tissue invasion

Celiac Plexus Neural Blockade

- Celiac Ganglia

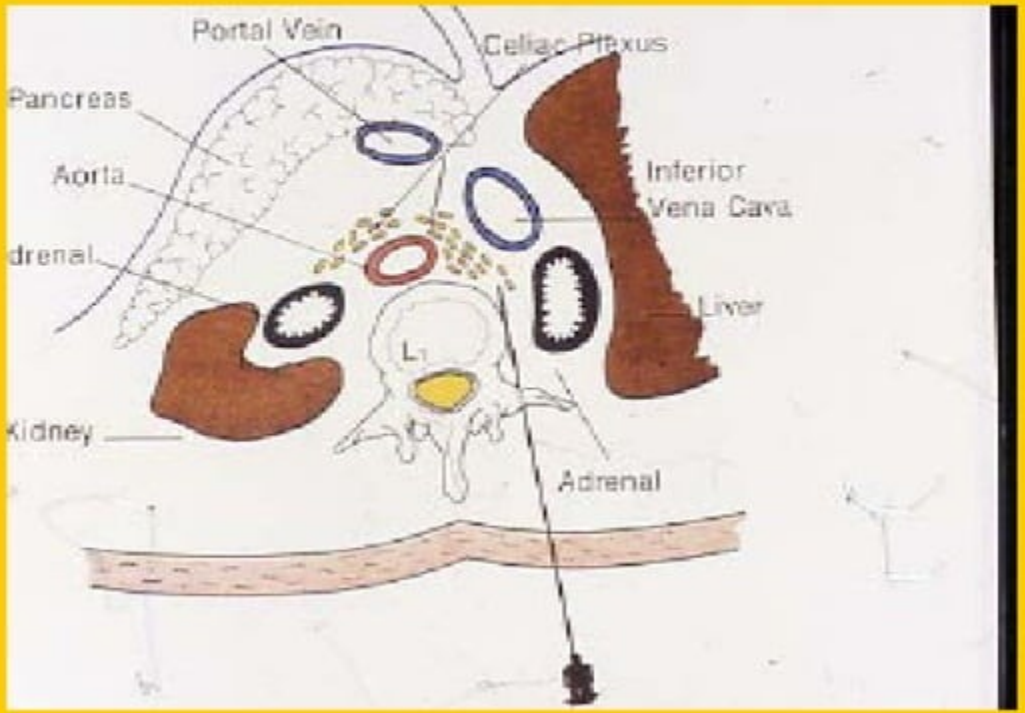
- Two sets of ganglia. The average number are one to five
- Left side ganglia are lower than right side on average less than a vertebral level
- Size on both sides vary between 0.6-0.9cm below the celiac artery
- Size of ganglion varies between 0.5-4.5cm

- Ward et al. ,Anesth. Analgesia 58:461 1978

Celiac Plexus

- Largest part of the sympathetic nervous system at prevertebral level of body of 1st lumbar vertebra
- Innervate abdominal viscera
- Contain visceral afferent and efferent fibers
- Also contains parasympathetic fibers from Vagus nerve
- Does not contain any somatic fibers
- Right sided ganglion lies medial to inferior vena cava,left side lies anterior to abdominal aorta

Anatomical location of Celiac Plexus



Indication for Celiac Plexus Neural Blockade

- Intra abdominal visceral analgesia

Upper abdominal surgery combining intercostal block and celiac block

- Intra-abdominal malignancy

Cancer of stomach
Pancreatic cancer
Gall bladder ca.
Adrenal mass
Common bile duct ca.

Indications

- Chronic pancreatitis
- Diagnostic neural blockade
- Abdominal pain due to active intermittent porphyria
- Palliation of pain and jaundice
- Sclerosing cholangitis

Technological support for Celiac Plexus Block

- Radiological –Fluroscopy/ C-Arm
- CT guidance
- Ultrasonography
- MRI Guided
- Endoscopic

Techniques of Celiac Plexus Block

- Posterior approach (Kappis)
- Anterior approach
- Trans aortic approach
- Trans-intervertebral disc approach
- Intra-abdominal
- Retrocrural
- Transcrural celiac plexus block
- Continuous block via catheter

AP and Lateral view of Celiac Plexus Block





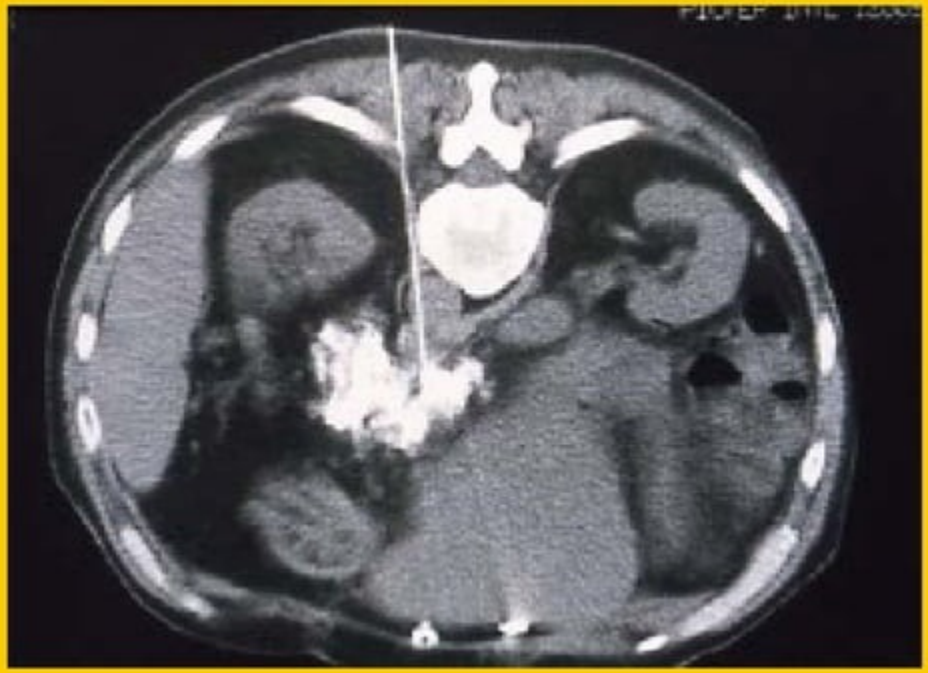
AP View with contrast



CT Guided Posterior Approach



CT Guided Trans-aortic approach



Trans-discal approach



Complications of Celiac Plexus Block

- Orthostatic hypotension
- Transient shoulder pain
- Paraplegia
- Pericarditis
- Paraparesis
- Disulfiram-like reaction (Anesthesiology 1987)
- Splenic Necrosis
- Chemical Peritonitis

Complications of Celiac Plexus Blockade

- Visceral Injuries
- VRenal pelvis
- RUretral
- UAdrenal
- AGastric
- GHepatic
- Vascular injuries
- VAortic, Celiac, Superior mesenteric
- AInferior vena cava
- I Renal

Complications of Celiac Plexus Block

Neurological injuries

Paraplegia,hemiplegia

Somatic neuritis

Sexual dysfunction

Musculoskeletal and cutaneous injuries

Discal perforation

Periosteal reaction

Tract deposition of neurolytics

Backache

Complication of Celiac Plexus Block

- Superior mesenteric venous thrombosis
- Chronic Diarrhea
- Corticosteroidinduced mania
- Anterior spinal artery syndrome
- Chylothorax
- Aortic dissection
- Urinoma
- Discitis
- AorticPseudoaneurysm
- Retroperitonealfibrosis

Summary

- • Utilize your local pain management specialists to help your patients with cancer pain

- • Think outside the box of conventional medical management



NO ONE
should live or die
in pain



Thank you