

# Interventional Pain Management for Cancer Pain

Dr Naeem Ahmed

MBBS, FRCA, FCARCSI, DPM, FFPMRCA

Consultant in Pain Medicine & Anaesthesia

Poole Hospital NHS Foundation Trust

- **Complex Neurophysiology**
  - Inflammatory, neuropathic, ischaemic, compressive mechanisms
- **WHO Pain ladder not always effective**
  - Requires mechanism based multimodal treatments
  - Tailored to the individual's requirements

# Treatment options

- Radiotherapy, Chemotherapy
- Hormonal treatments
- Bisphosphonates
- Surgery
- Pharmacological
- Non-pharmacological
  - Psychological
  - Physical

# Interventions

- Intrathecal drug delivery
- Cordotomy
- Vertebroplasty
- Coeliac plexus blocks
- Epidural infusions
- Nerve blocks
  - Neurolytic
  - LA intermittent or continuous

- Destructive procedures
  - Phenol
  - Alcohol
  - Radiofrequency procedures
- Non Destructive procedures
  - LA Infiltrations
  - LA & Steroid blocks
  - Intrathecal infusions

# Peripheral Nerve Blocks

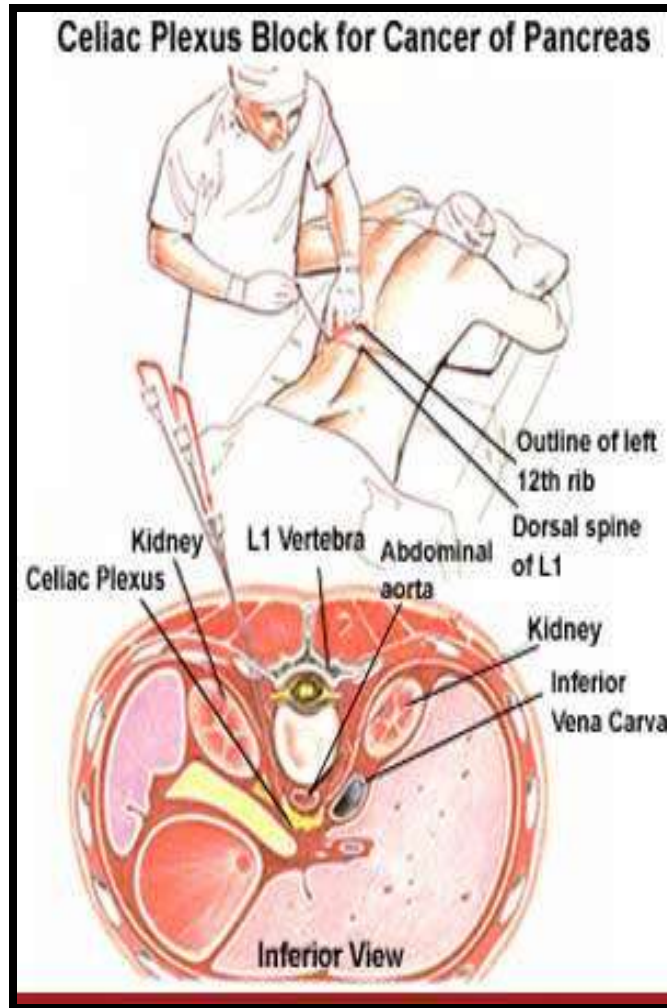
- Intercostal nerve blocks
  - LA & Steroid
  - Phenol
- Suprascapular nerve
  - Radiofrequency procedures
- Continuous infusions
  - Brachial plexus
  - Lumbar Plexus
  - Femoral nerve

# Autonomic nerve blocks

- Coeliac plexus block
  - Indications
    - Pancreatic cancer
    - Visceral involvement in upper Abdomen
  - Complications
    - Hypotension
    - Diarrhoea
    - Neurological – paraplegia, leg weakness, sensory deficits

# Celiac Plexus Neurolysis

## : Technique



Percutaneous:  
Fluoro/CT

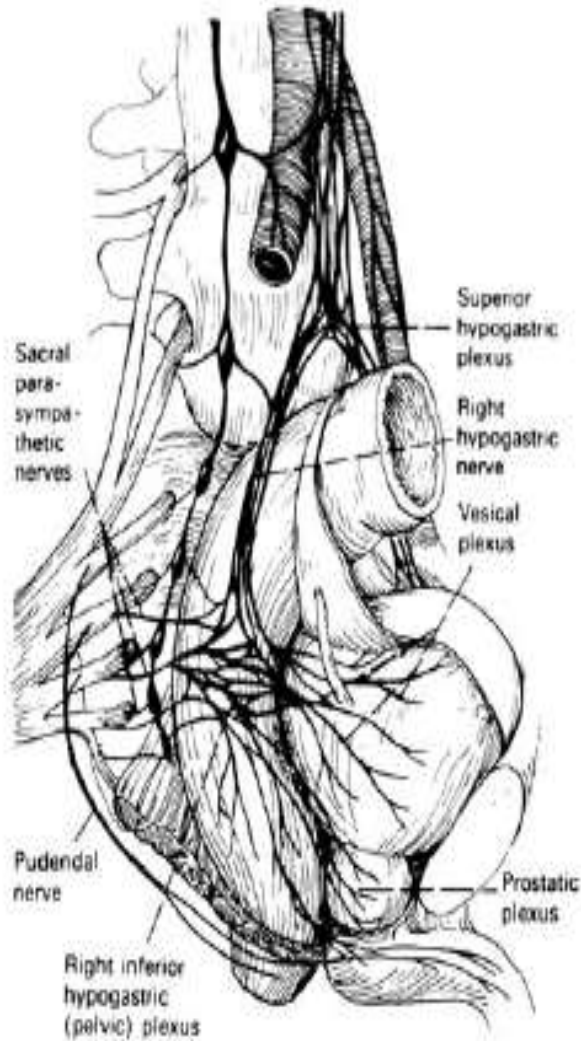
- 1) Radio contrast dye is used to confirm placement of needle
- 2) Diagnostic block with local anesthetic
- 3) Injection of neurolytic agent

Endoscopic by GI



- Hypogastric Plexus block
- Ganglion Impar block

# Superior Hypogastric Plexus : Lower Abdomen/Pelvic Organs

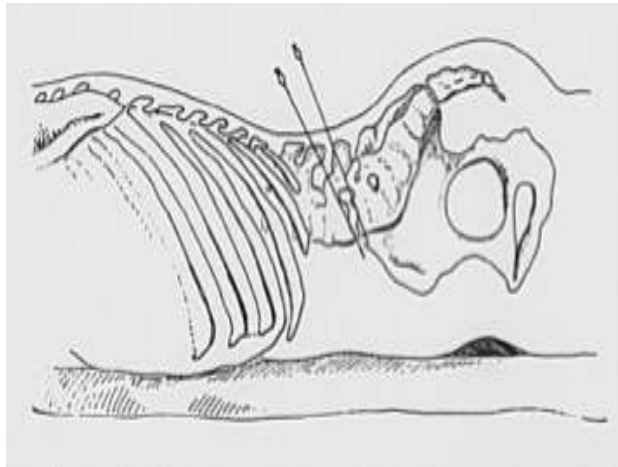


Anterior to sacral  
promontory at L5-S1

Innervates:

- Descending Colon to Rectum
- Bladder/Prostate/Gonads
- Uterus/Vaginal Fundus
- Some Input from Perineum/Anus

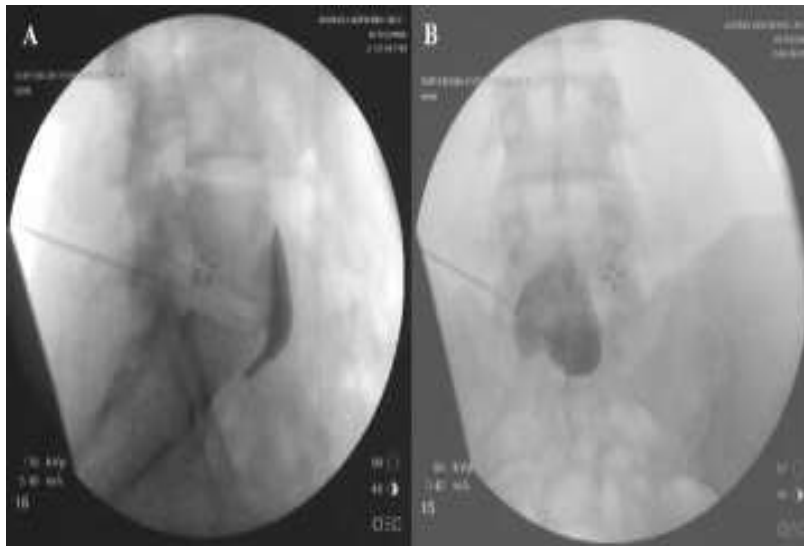
# Superior Hypogastric Plexus Block



- 1) Needles advanced anterior to L5/S1
  - Bilateral
  - Unilateral Transdiscal

- 2) Radio contrast dye is used to confirm placement of needle

- 3) Diagnostic block with local anesthetic  
or  
Neurolytic block with alcohol or phenol



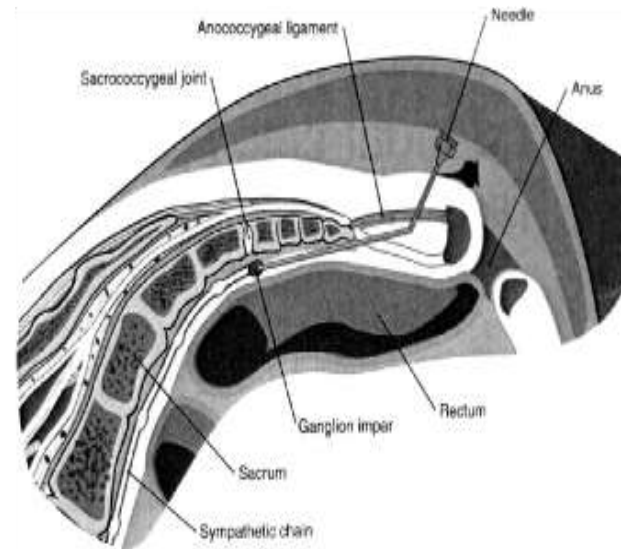
# Ganglion Impar

Aka “Ganglion of Walther”

Sits just anterior to sacrococcygeal junction

Provides Innervation to:

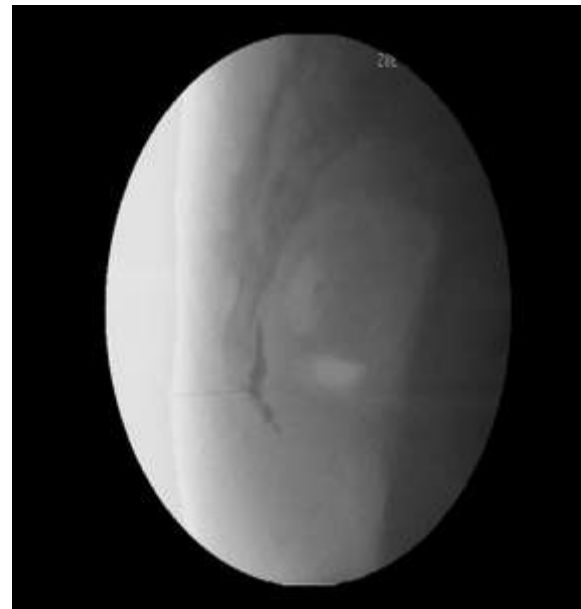
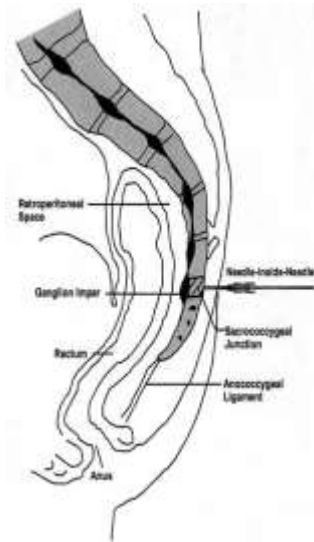
- Perineum\*
- Distal Rectum/Anus
- Distal Urethra
- Distal 1/3 Vagina
- Vulva



**Figure 13.** Ganglion impar and surrounding structures. Source: Waldman S: Atlas of Interventional Pain Management, 2nd edition, p. 421, Elsevier, 1998. Reprinted with permission.

# Ganglion Impar Neurolysis

- Trans-Sacrococcygeal Approach

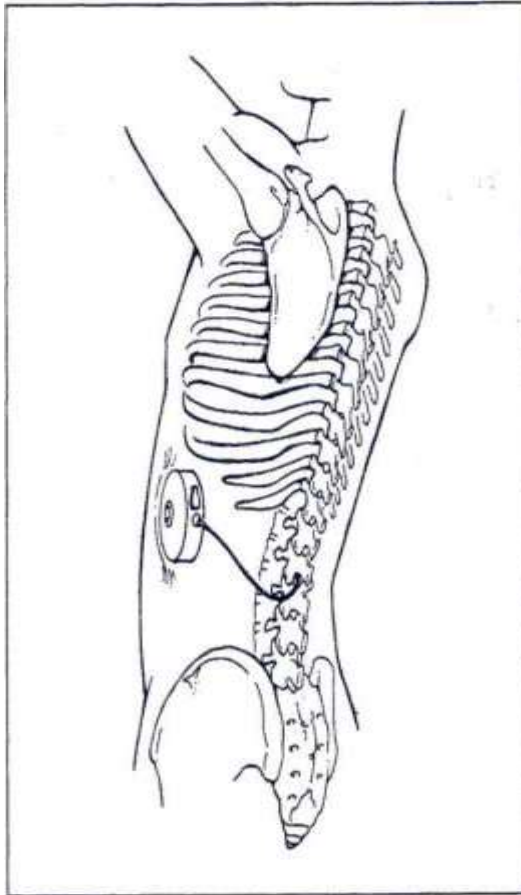


- Neurolysis
- Radiofrequency ablation

# Neuraxial Blocks

- Epidural Infusions
- Intrathecal infusions
  - Implanted vs external
  - Implanted systems more cost effective after 3 months of therapy
  - LA, Opioids, Clonidine, Ziconotide
- Neurolytic saddle block
- Intraventricular opioids

# Implantable infusion pump



- Catheter:
  - Tunneled under the skin
  - Attached to the pump
- Pump:
  - Implanted in a subcutaneous pocket in the abdomen
- 2 types of pump
  - Constant flow rate
  - Multiple flow rate, Programmable



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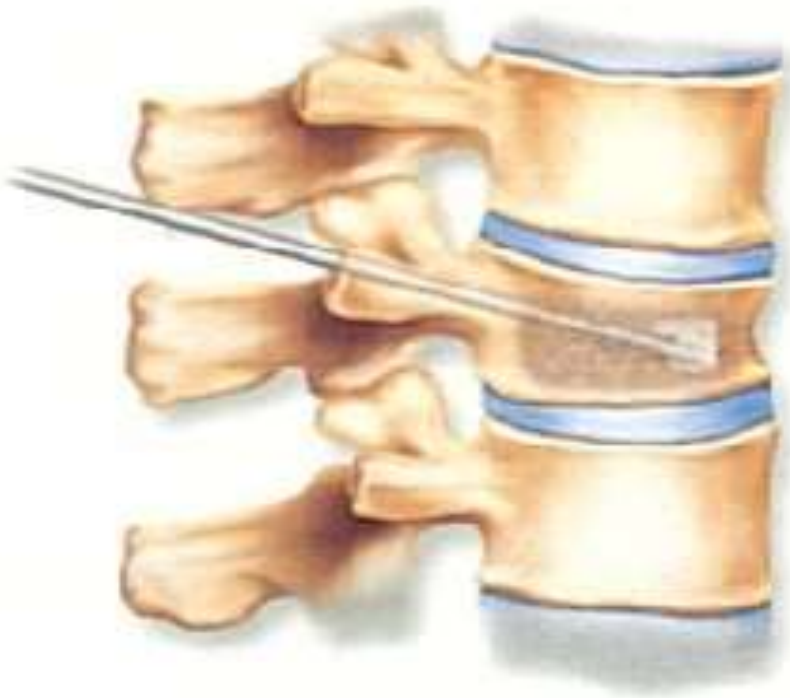


# Percutaneous Cordotomy

- Done for pain on the opposite side below C5
- Procedure done at C1-2 level using Radiofrequency lesioning
- Mesothelioma & Lateralized pain
- Complications
  - Contralateral leg weakness
  - Painful Dysasthesia
  - Fatal sleep apnoea if done bilaterally

# Vertebroplasty

- Pathological fractures of vertebrae
- Myeloma & Metastatic cancers
- Most effective within the first 8 weeks of fracture
- Cement Vertebroplasty
- Kyphoplasty



- Case Study 1
- Case Study 2

- Current provision of cancer pain services
- Unmet need
- Often Pain services not involved or called in too late
  - Lack of proper referral mechanisms
  - Lack of engagement
    - Organisational
    - Individuals
  - Lack of appropriate resource & training

- Questions?