



28th Annual Gabor Racz Advanced Interventional
Pain Conference and Workshop
Budapest, Hungary **August 25-27, 2025**

How to make your Cancer Pain Interventions more effective

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United Kingdom



Conflicts of Interest

- Medical Advisor for Biowave Corp
- Support for my work in Ukraine



What are we discussing today?

- How to select patients?
- How to select interventions?
- What patients want?

- Points to consider when planning (and executing)
- Some examples
- Summary



Points to Consider

- Complete pain relief – is it possible?
- Preservation of motor function
- Preservation of autonomic function
- Can you do what you can to mirror management of non-malignant pain?
- Is there a role of neuromodulation?
- Is there a role for ITDD?
- Do you need specialist advice? Imaging?



Points to Consider

- Diagnostic blocks vs. First line Neurolysis
- Pain relief without numbness
- Avoidance of deafferentation pain/ mirror pain
- Ideally, the procedure should outlast the patient
- Can you get patients back to oncology management or clinical trials?
- Medication management
 - Opioid toxicity
 - Opioid withdrawal
- What next?
 - Leave something in your arsenal



Pharmacological Management

- **Most pains can be effectively managed by drugs**
 - Opioids
 - Neuropathic pain medications
 - Antidepressants
- **Side-effects**
 - GI – nausea, vomiting, constipation
 - CNS – somnolence, confusion, agitation, sedation, cognitive dysfunction
 - Immunological
 - Hormonal – reduction in pain threshold and well-being
 - Tolerance/ Dependence/ Opioid-induced Hyperalgesia



Psychology/ Physiotherapy

- **Psychology**

- Anxiety and depression
- Fear of dying
- Distress projected as pain
- Family and social support

- **Physiotherapy**

- Mobilisation
- Functional restoration
- Maintaining independence
- Role of acupuncture and complimentary therapy



How to make Interventions Effective

- Why?
- When?
- Which?
- How?
- What else?
- What are you trying to achieve with interventional management?

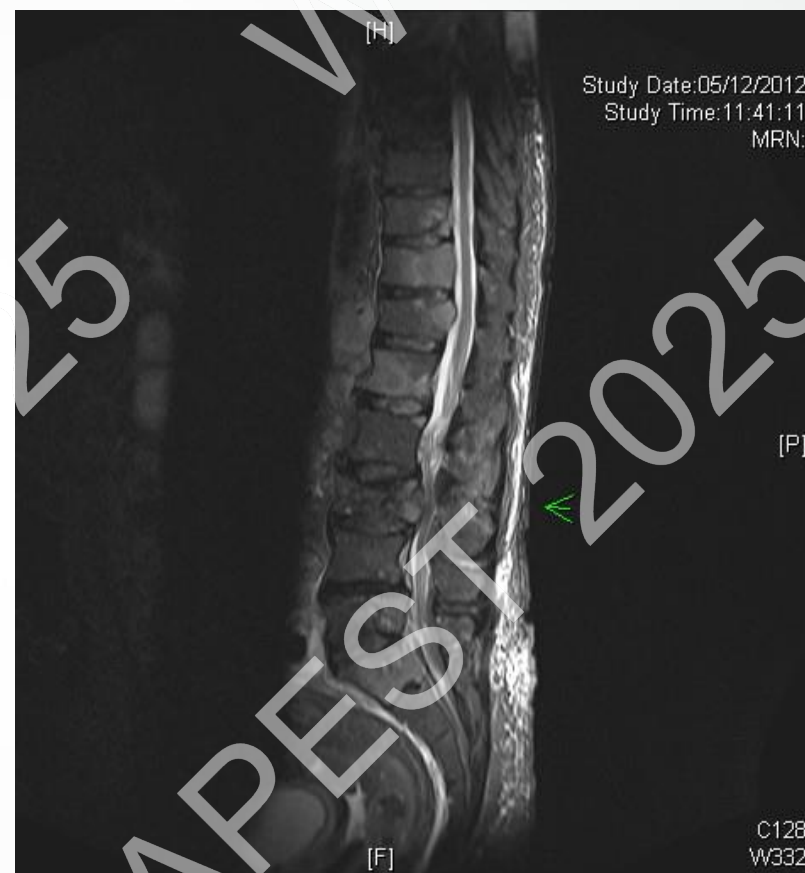


How to make your block more effective and with less side-effects?

- Up to date Imaging
- Flow patterns on Fluoroscopy/ CT/ USG
- Somatic
- Visceral



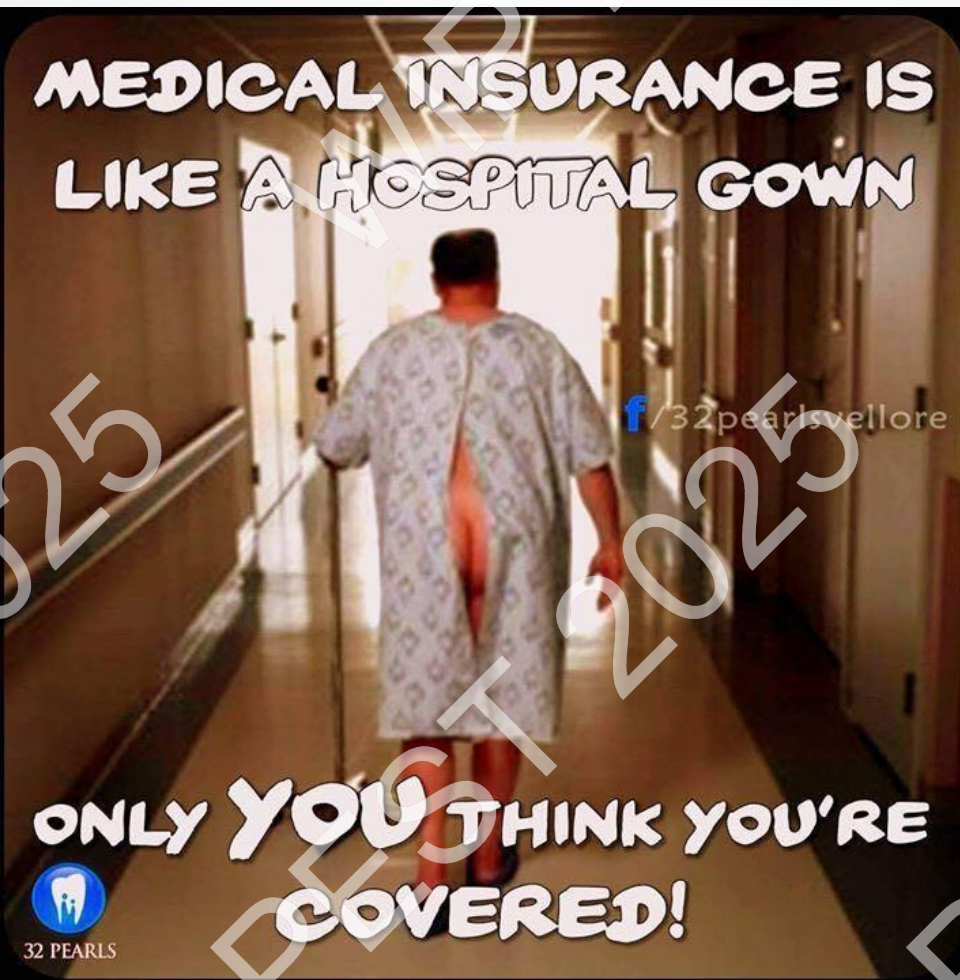
Up to date Imaging: especially if there are new symptoms





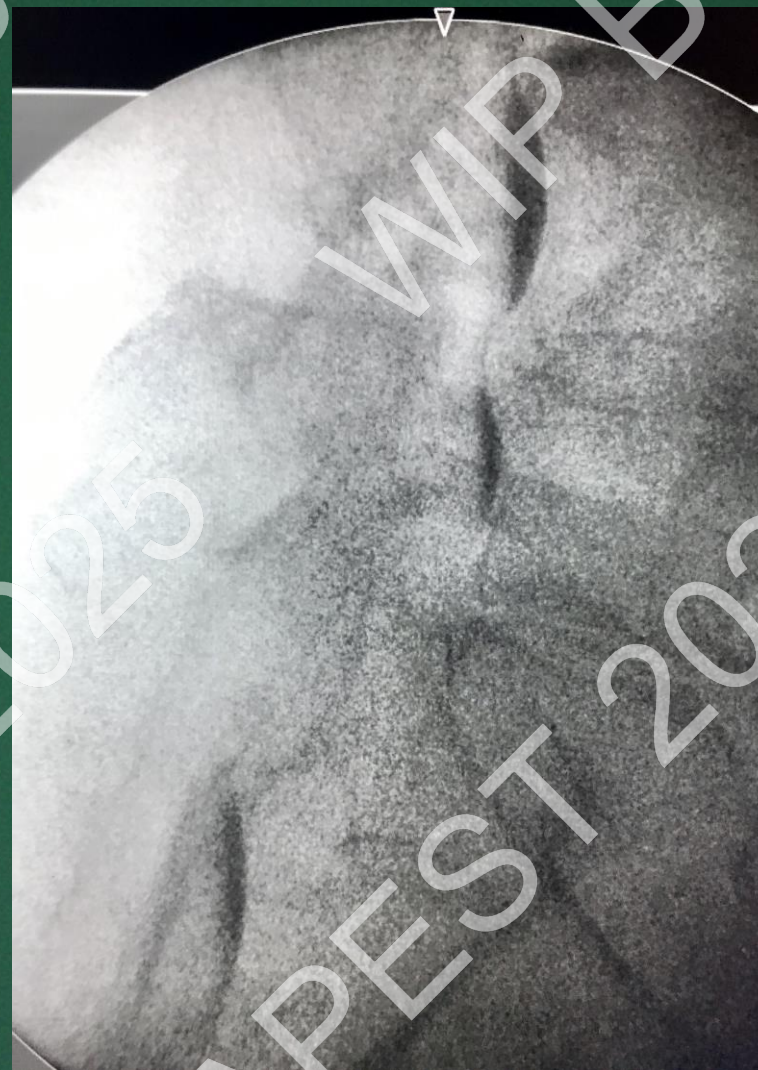
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Safety/ Indemnity/ Planning



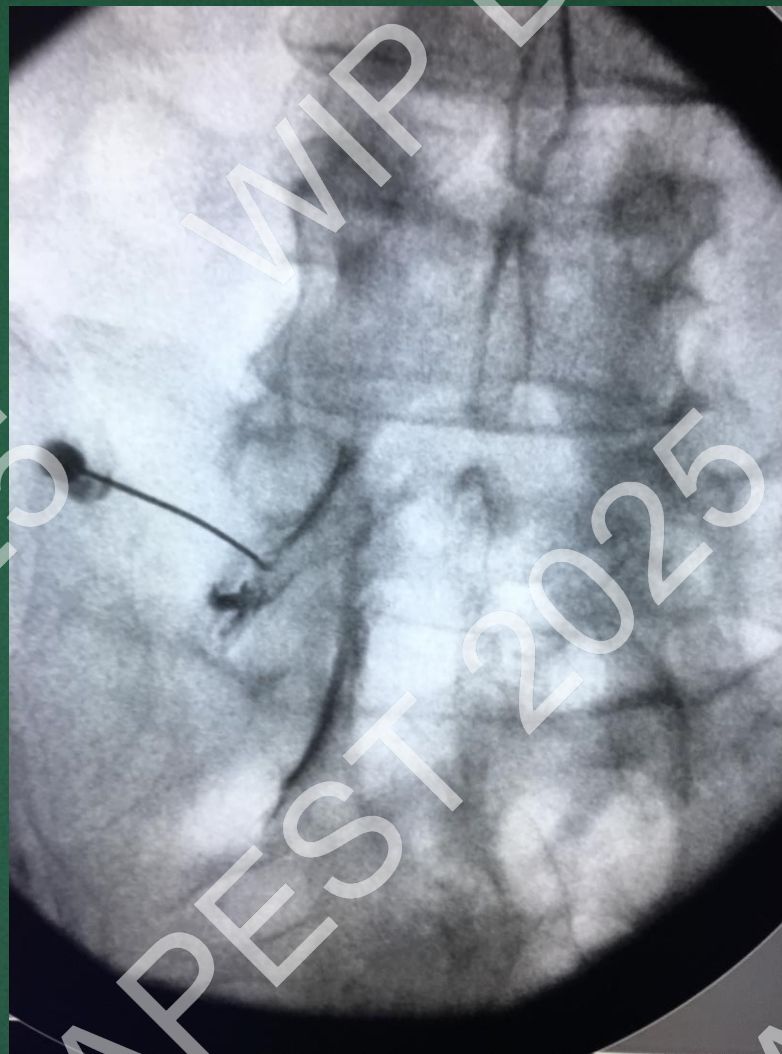
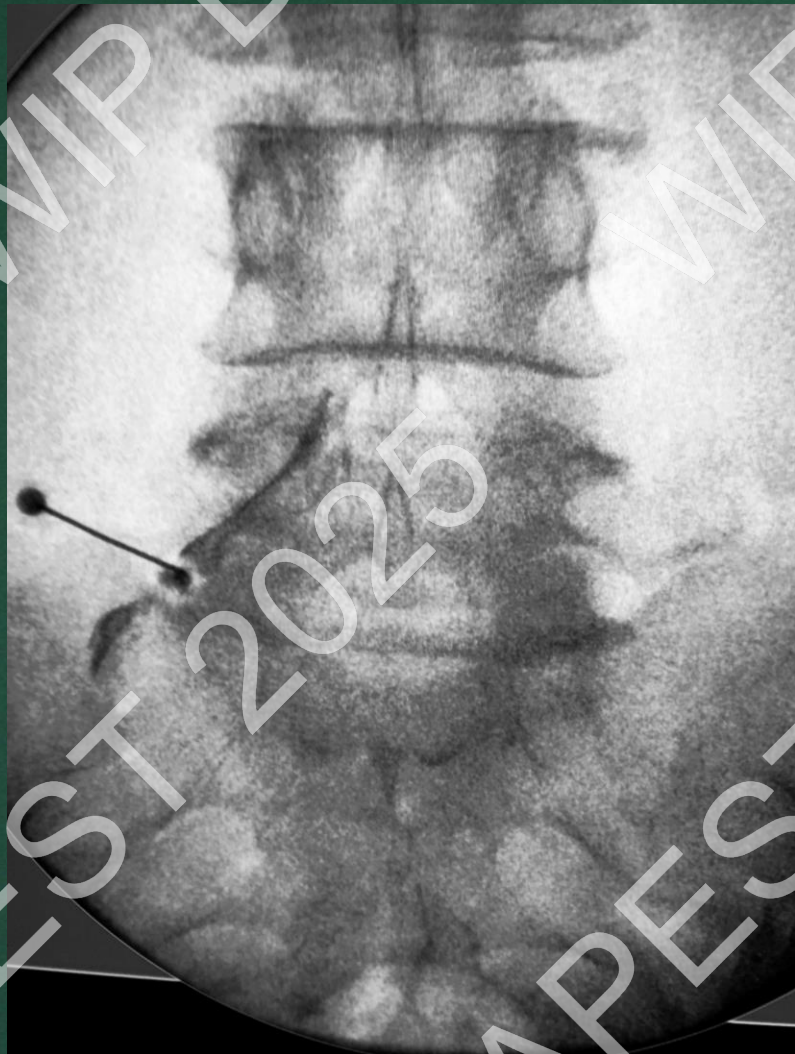


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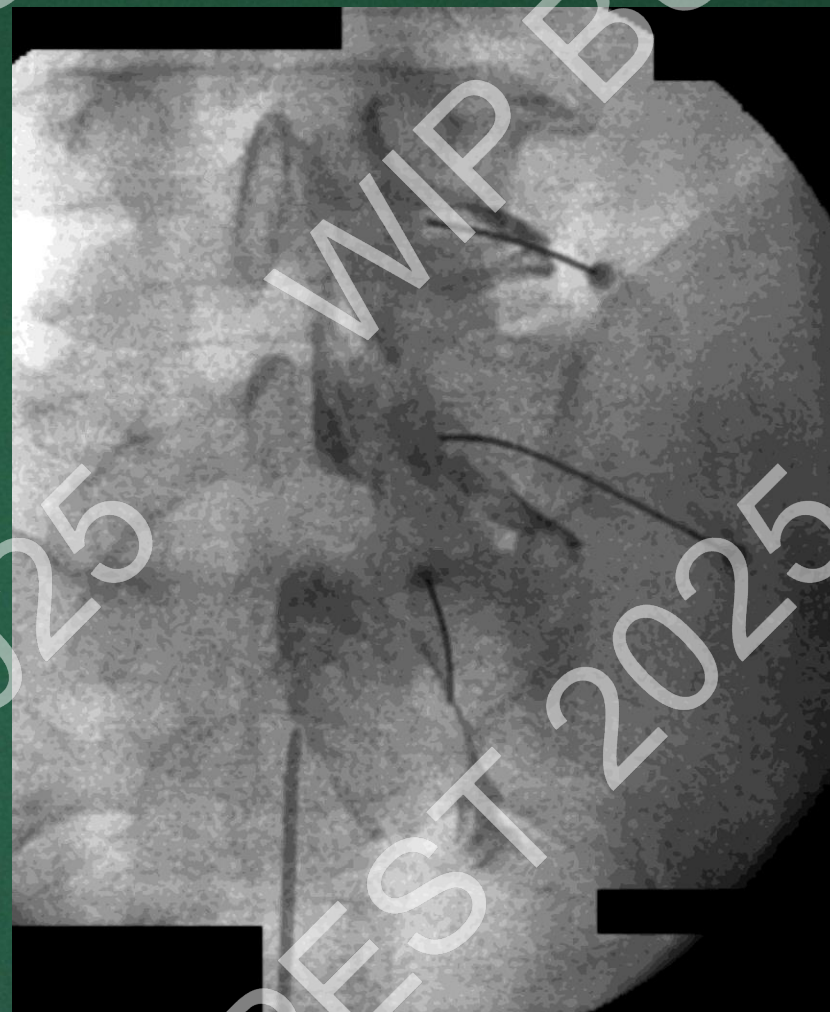


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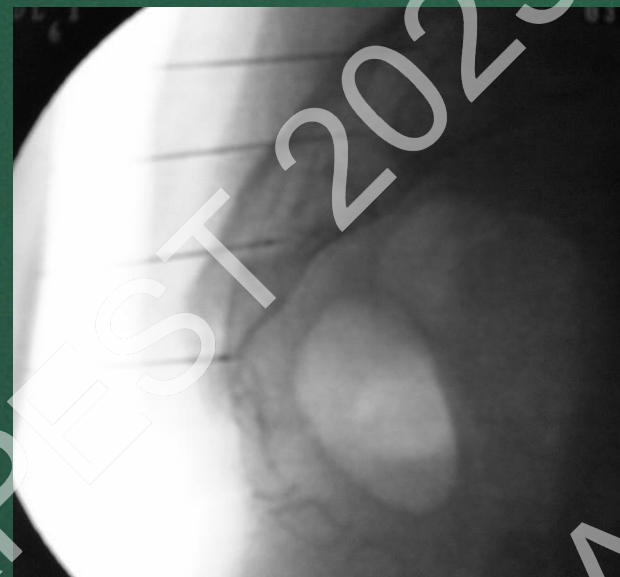
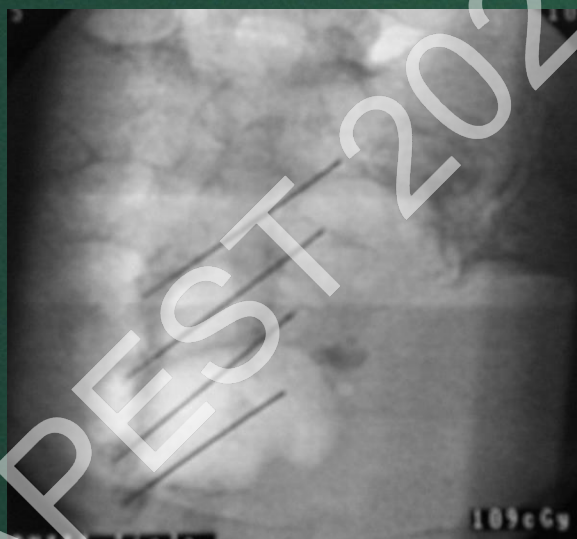
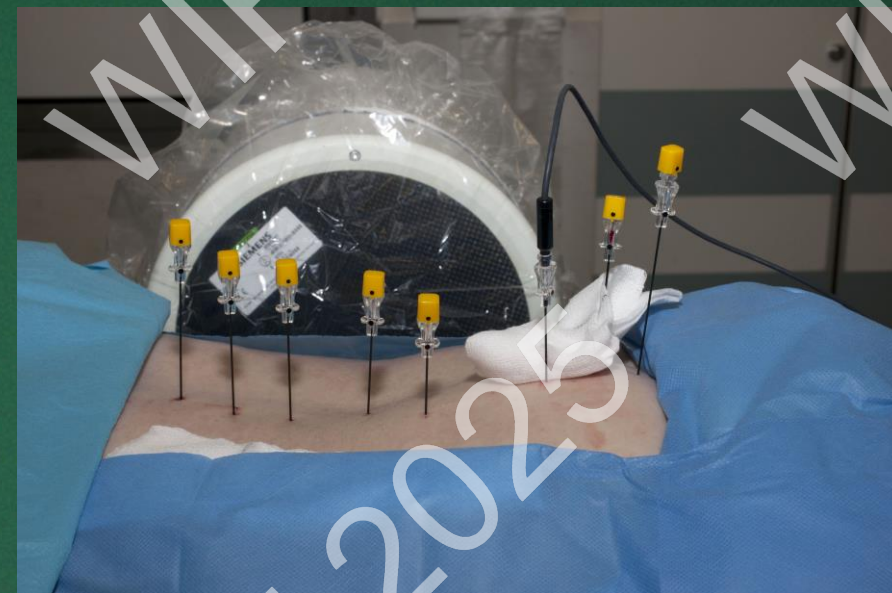
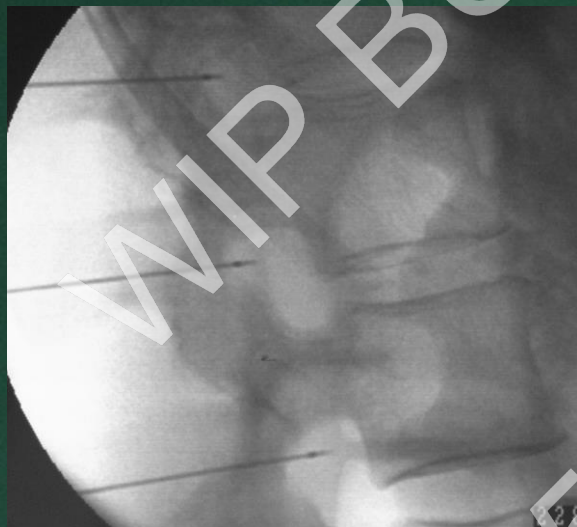


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Intrathecal Selective Sensory Neurolysis

- 45 deg semi-prone with affected side up
- Needle just deep of sensory roots
- Absolute alcohol floats up in the CSF
- Dendate ligament and cord along with the hypobaric alcohol helps avoid motor damage





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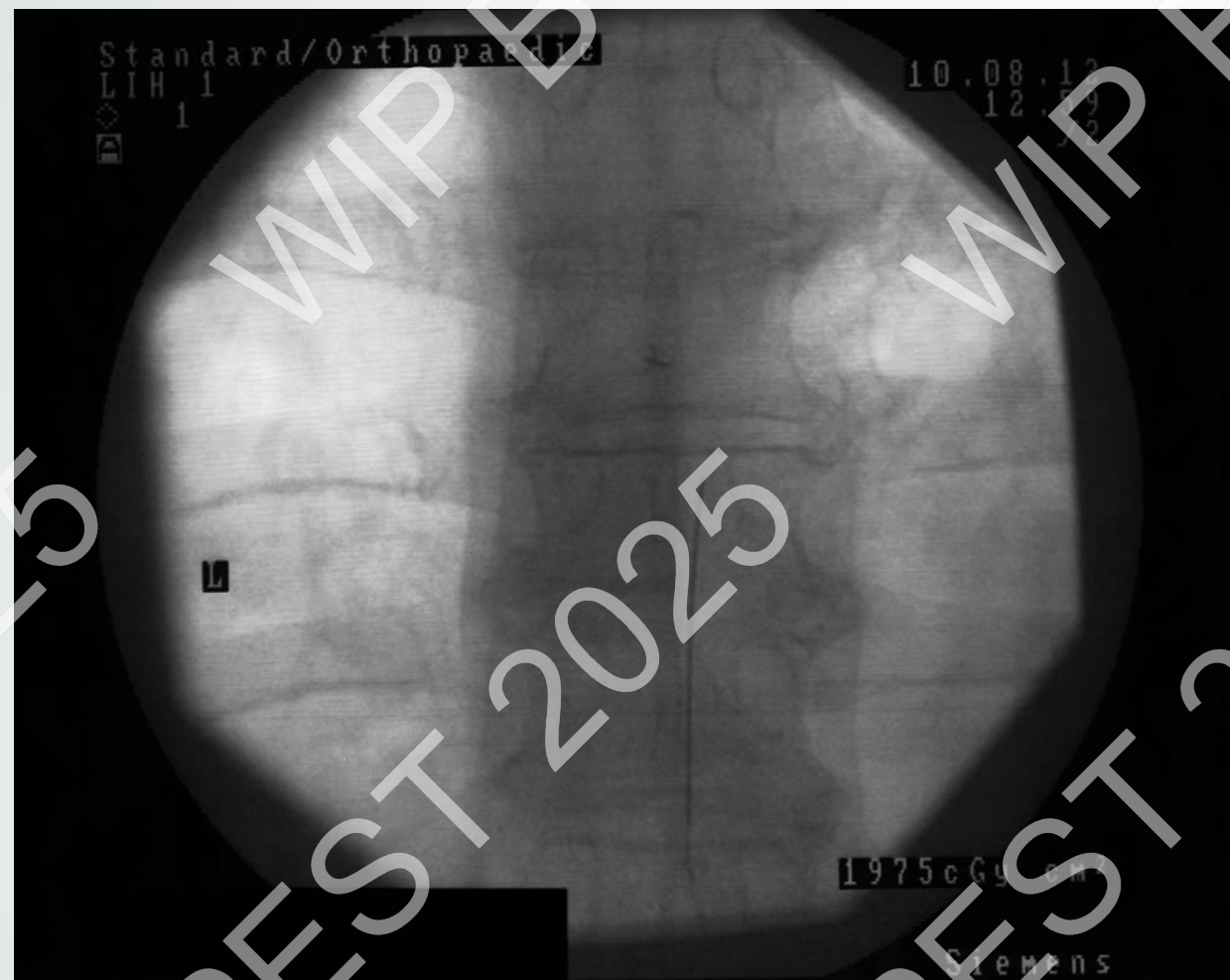


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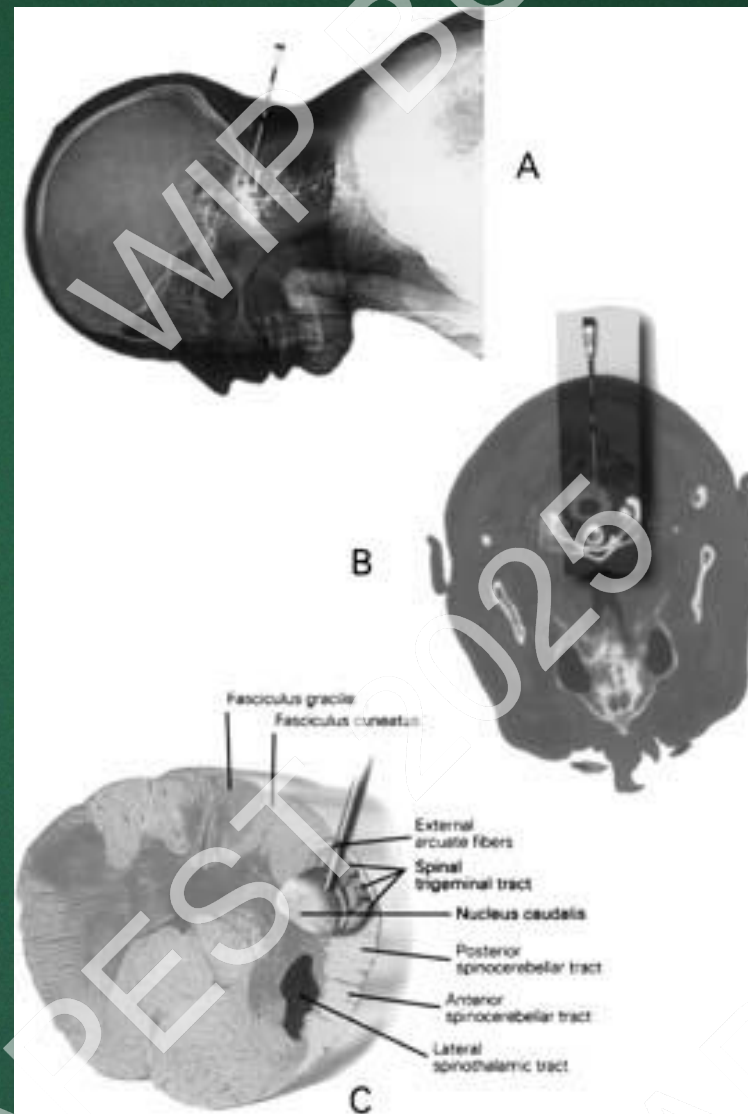
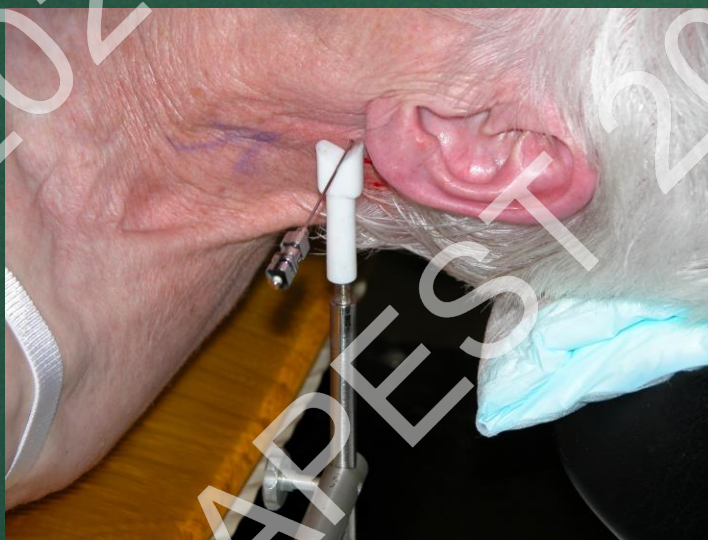
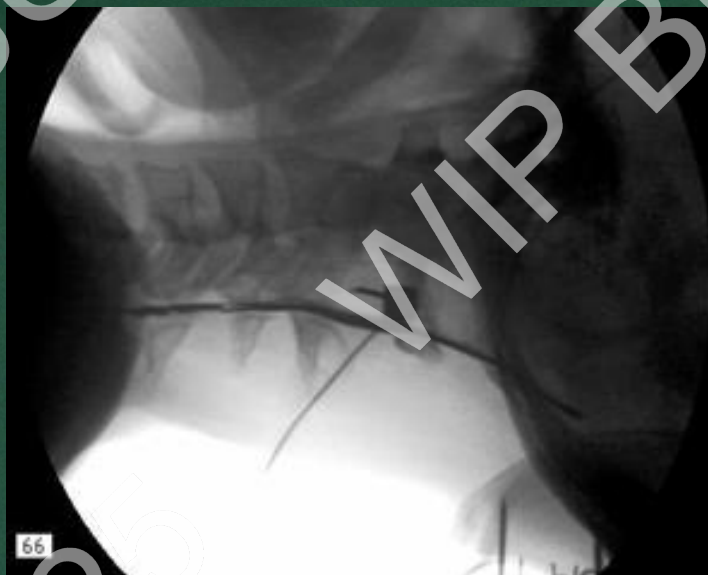


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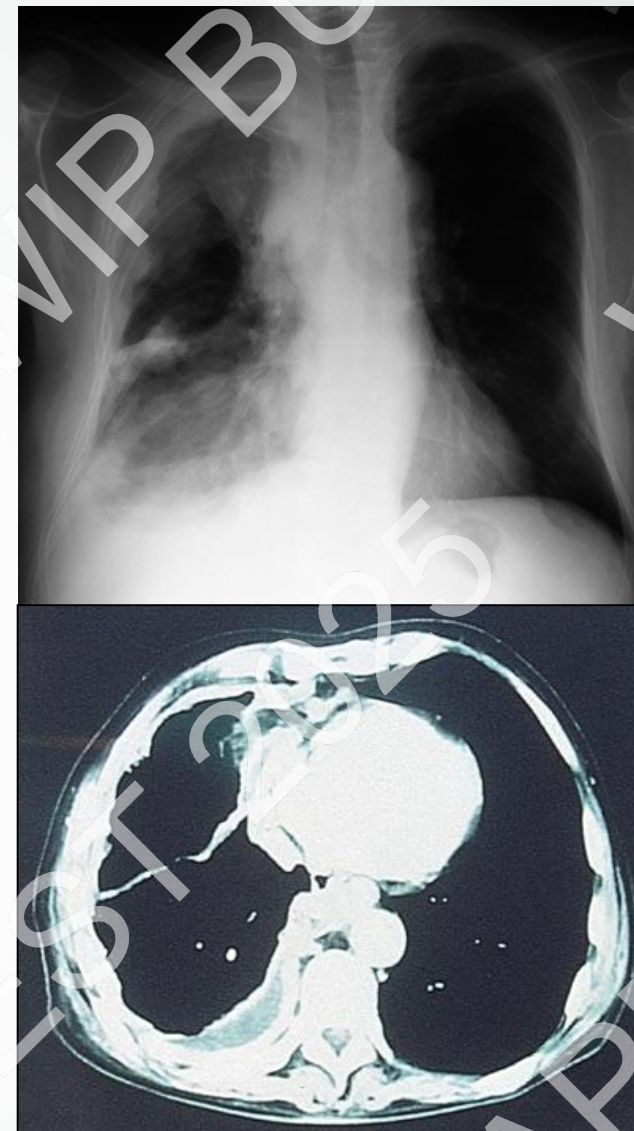


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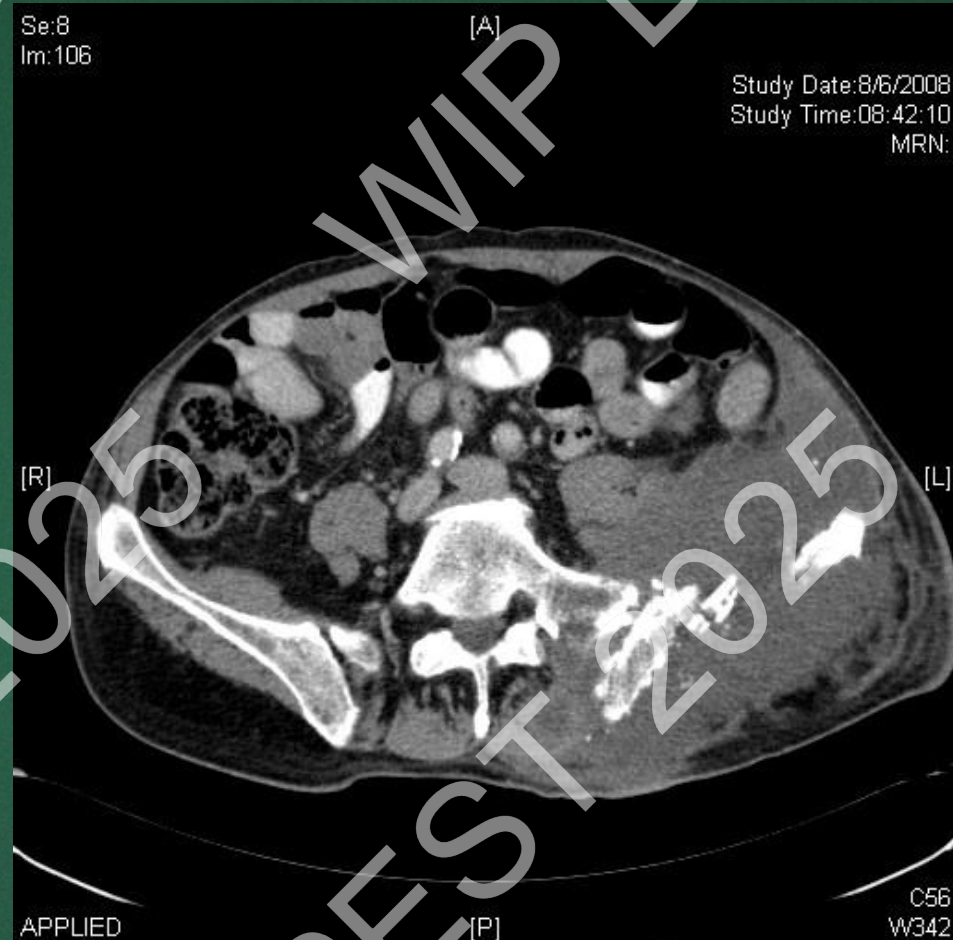
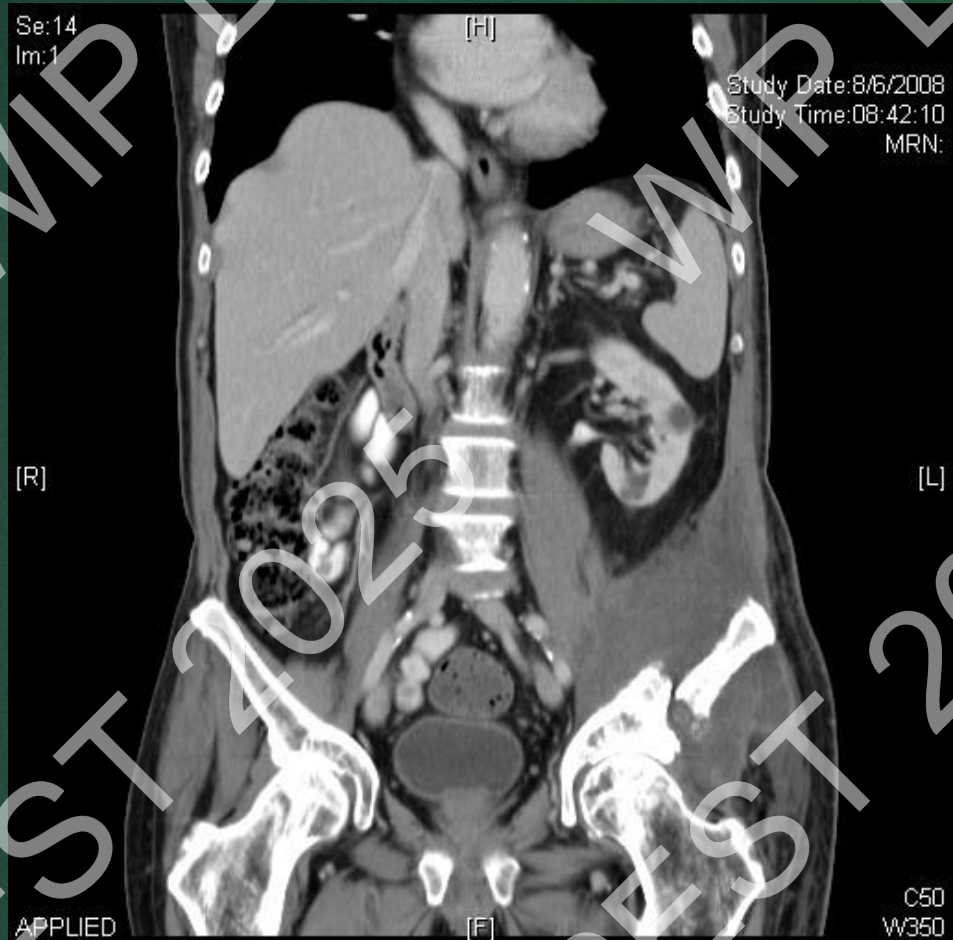
When to refer?

- Early
- Anticipate disease course
- NOT a last ditch procedure
- When patient starts to require strong opioids (pain will get worse with time)





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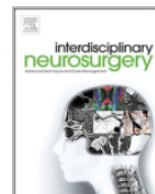
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ELSEVIER

Interdisciplinary Neurosurgery

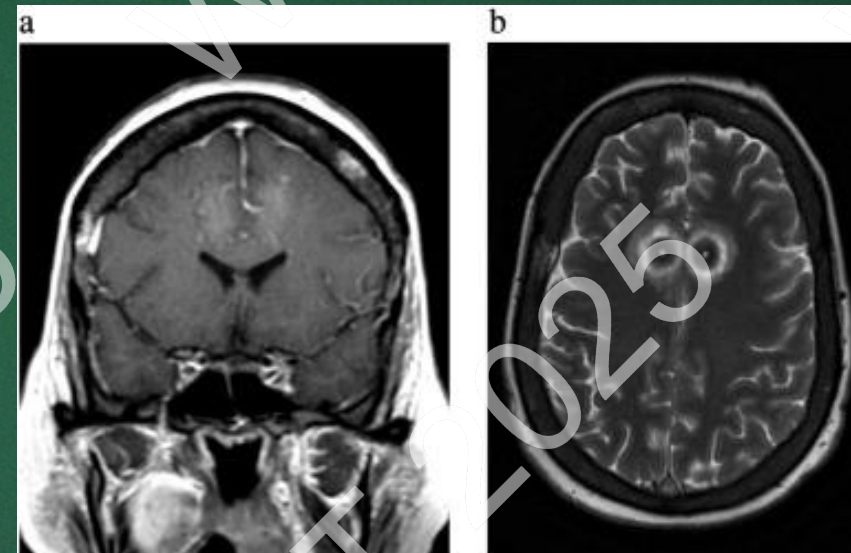
Volume 6, December 2016, Pages 80-83



Technical Note & Surgical Technique

Anterior cingulotomy for intractable pain

Nitin Agarwal MD^{a b} , Phillip A. Choi MD^a, Samuel S. Shin MD, PhD^a,
David R. Hansberry PhD^b, Antonios Mammis MD^c  





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Pain Physician 2024; 27:1-10 • ISSN 1533-3159

Systematic Review

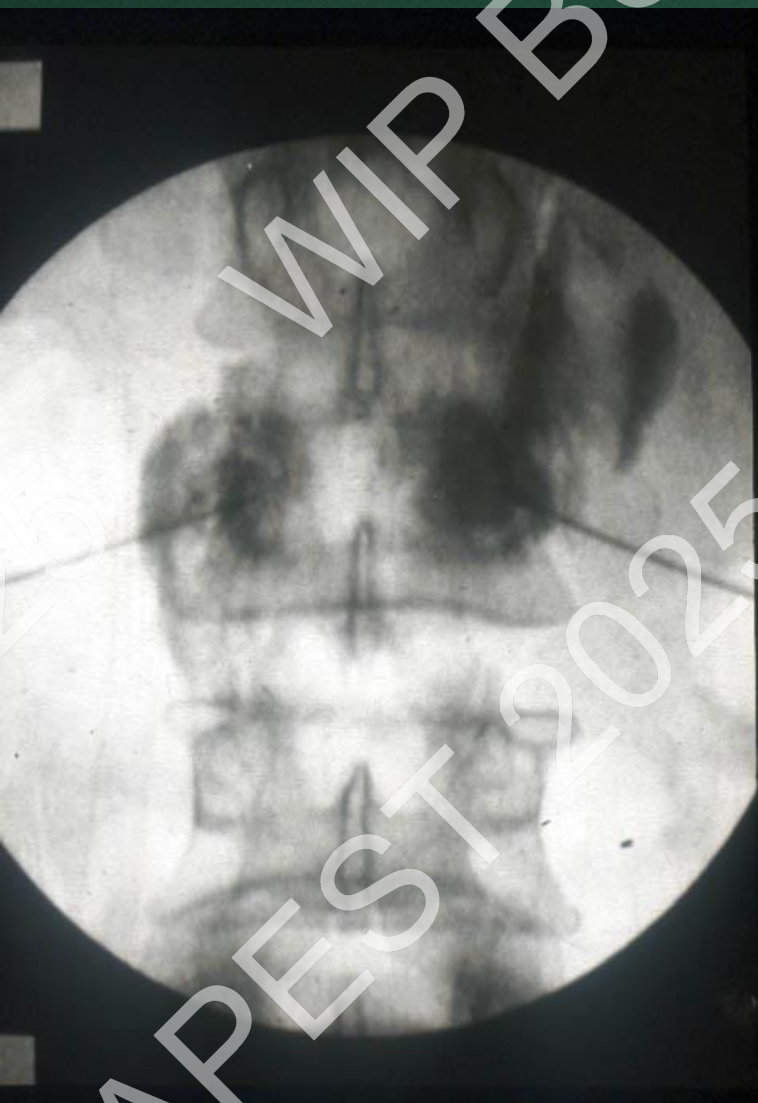
Efficacy and Safety of Celiac Plexus Neurolysis Versus Splanchnic Nerve Neurolysis in the Management of Abdominal Cancer Pain: A Meta-analysis of 359 Patients

Fan Lu, MD, PhD^{1,2}, XueHan Li, MD, PhD¹, Li Song, MD, PhD², Ling Ye, MD, PhD²,
XiaoJia Wang, MD, PhD², and RuRong Wang, MD, PhD¹



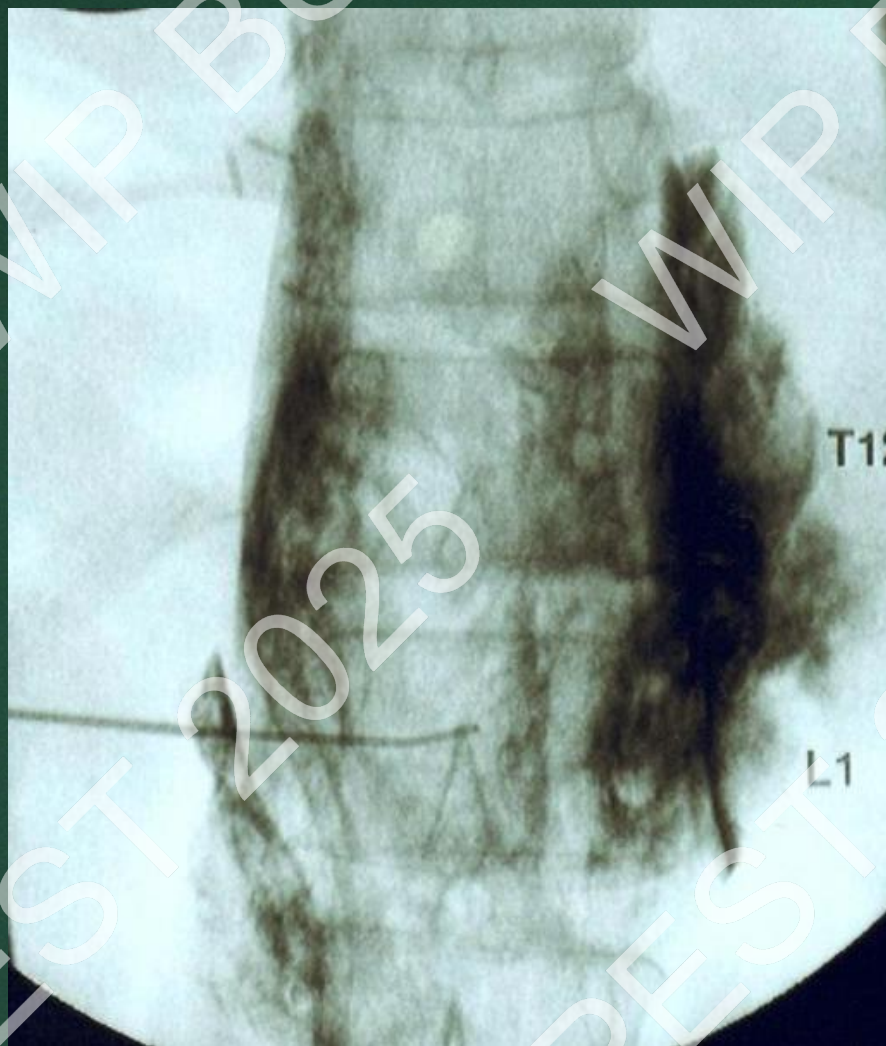
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Coeliac Plexus Block



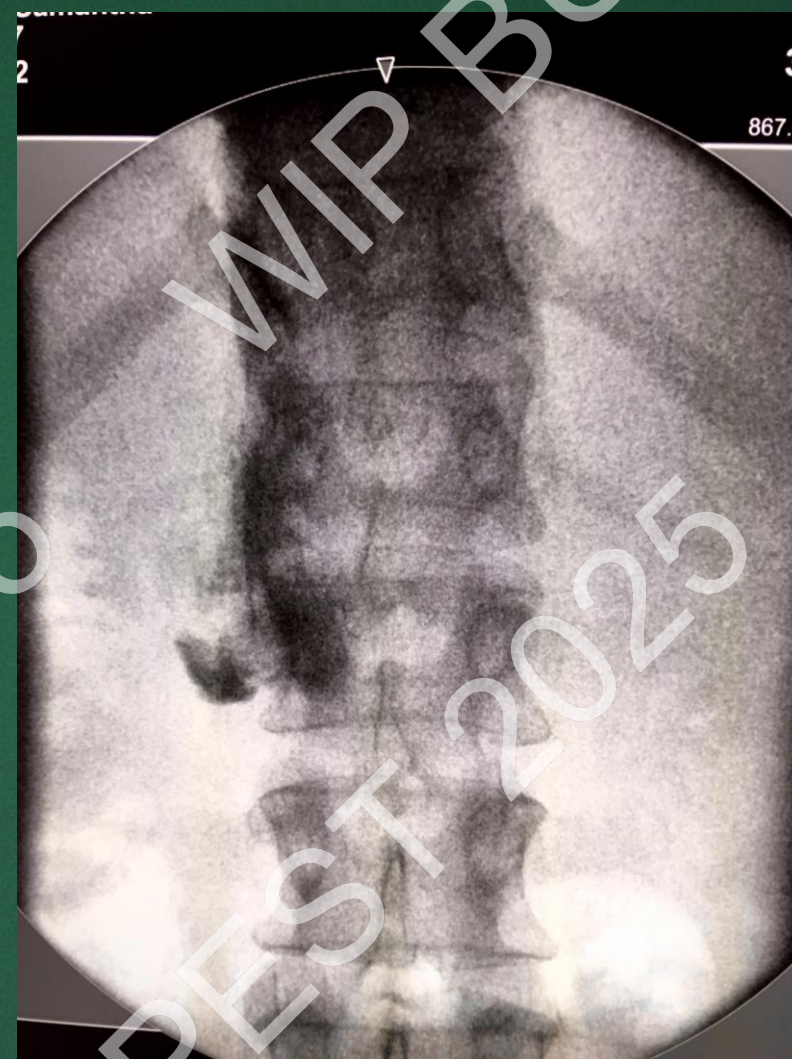


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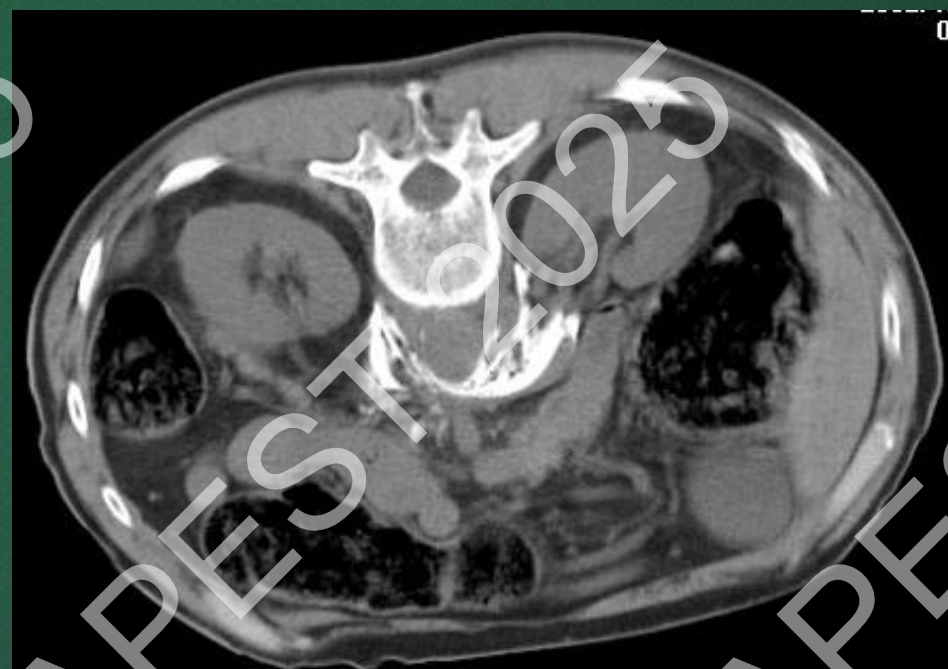


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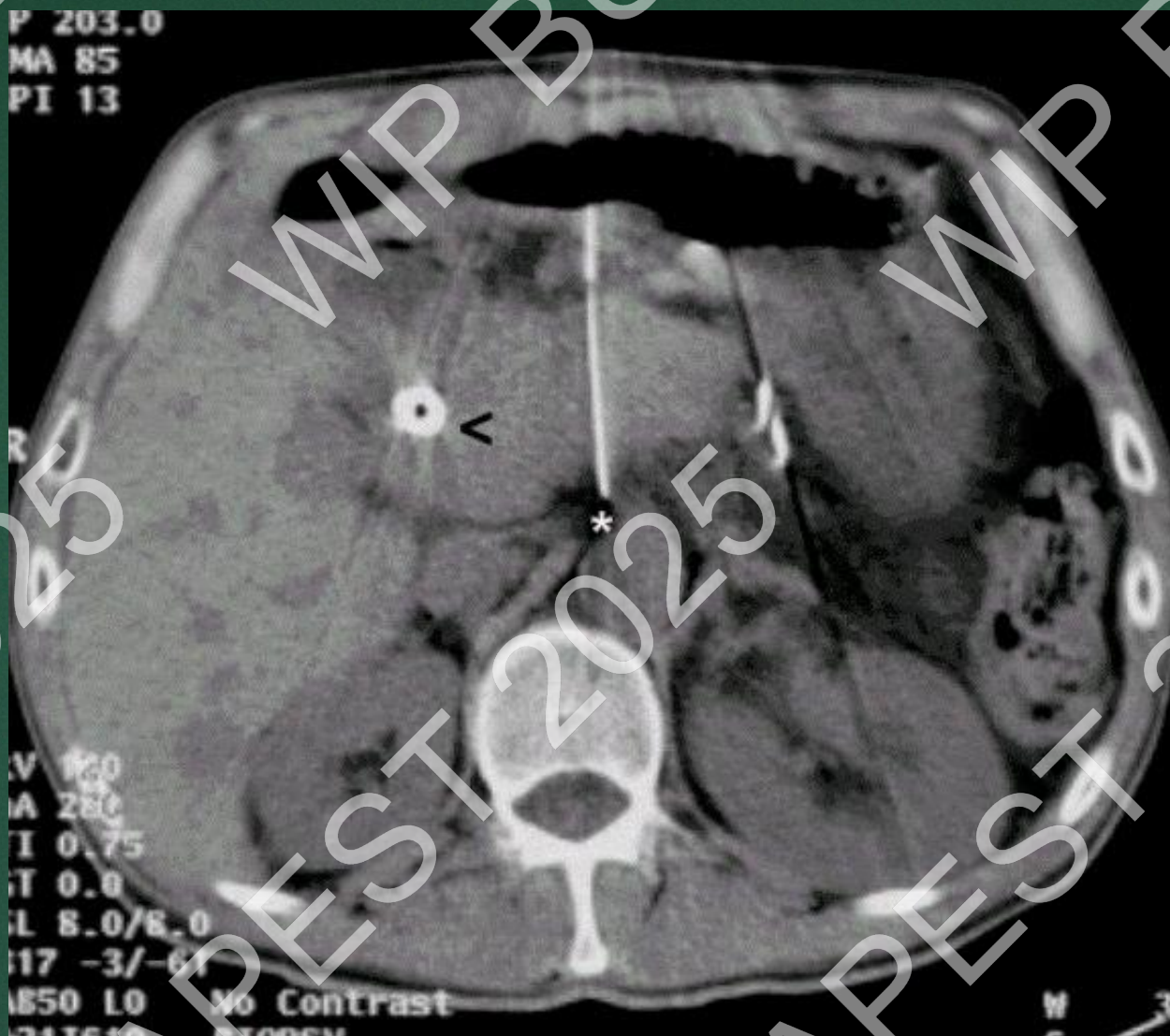
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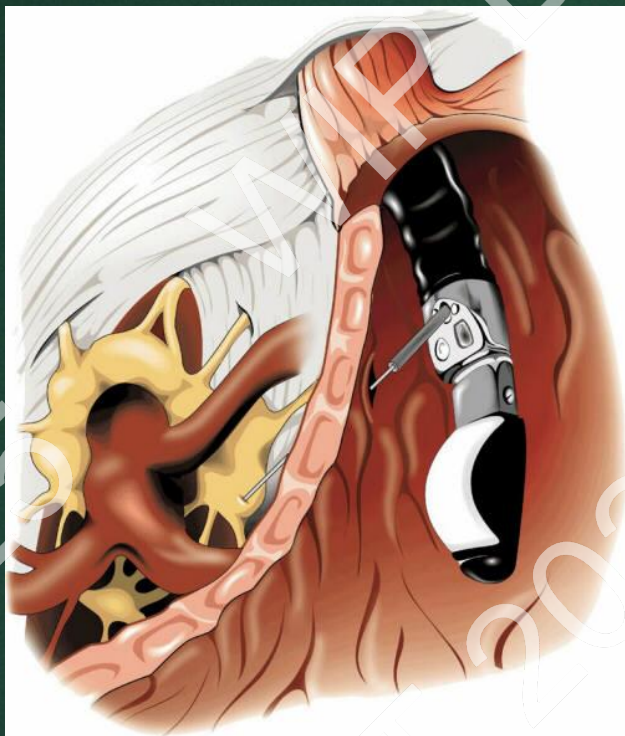


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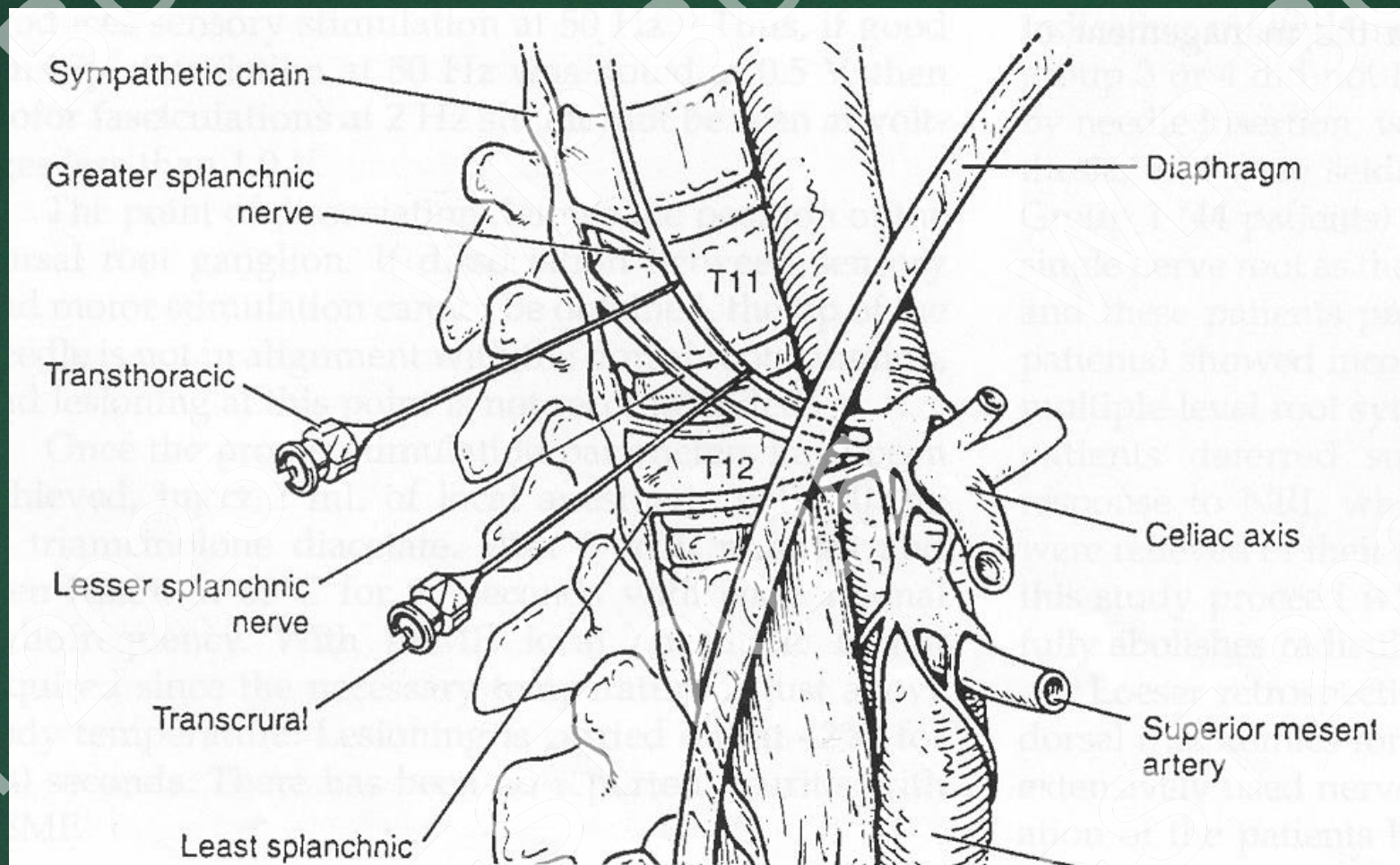


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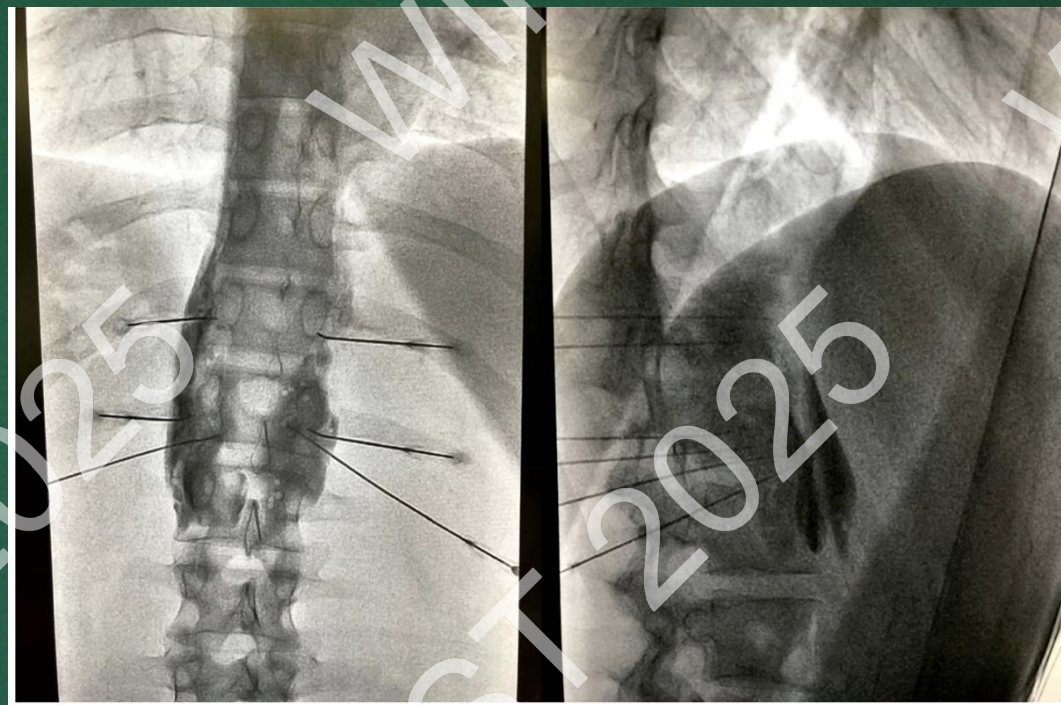
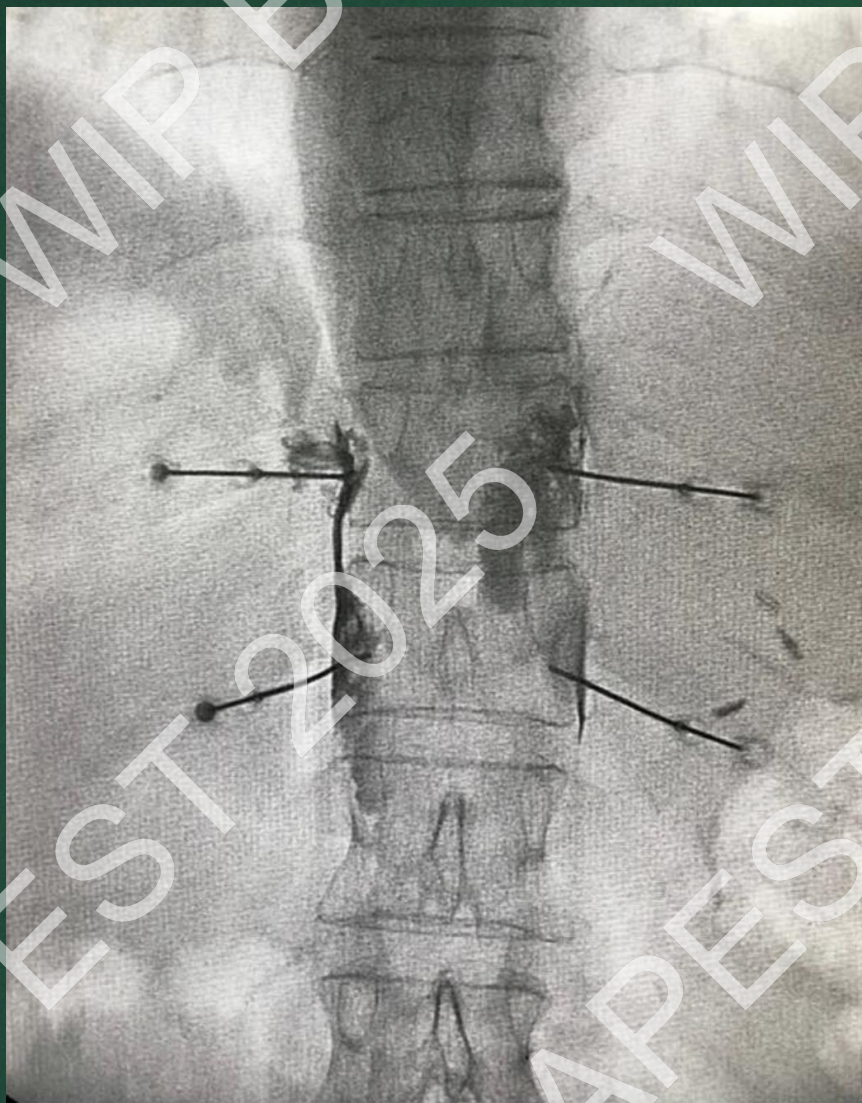
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From Raj et al *Radiographic Imaging for Regional Anesthesia and Pain Management*



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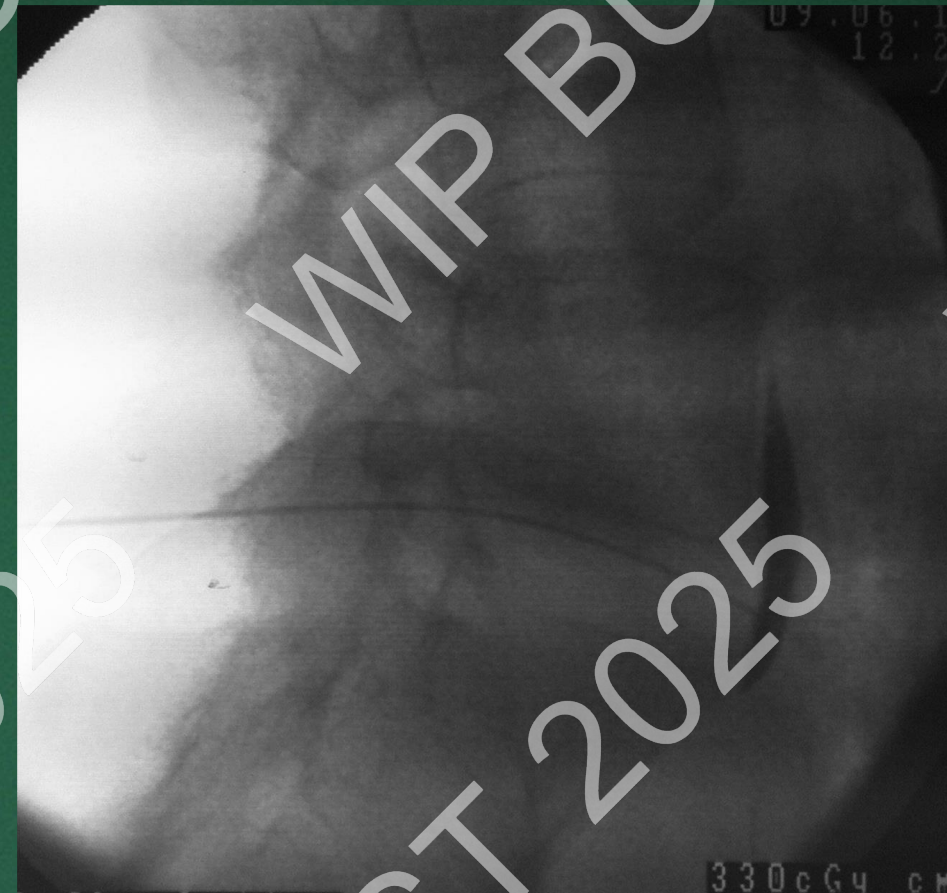
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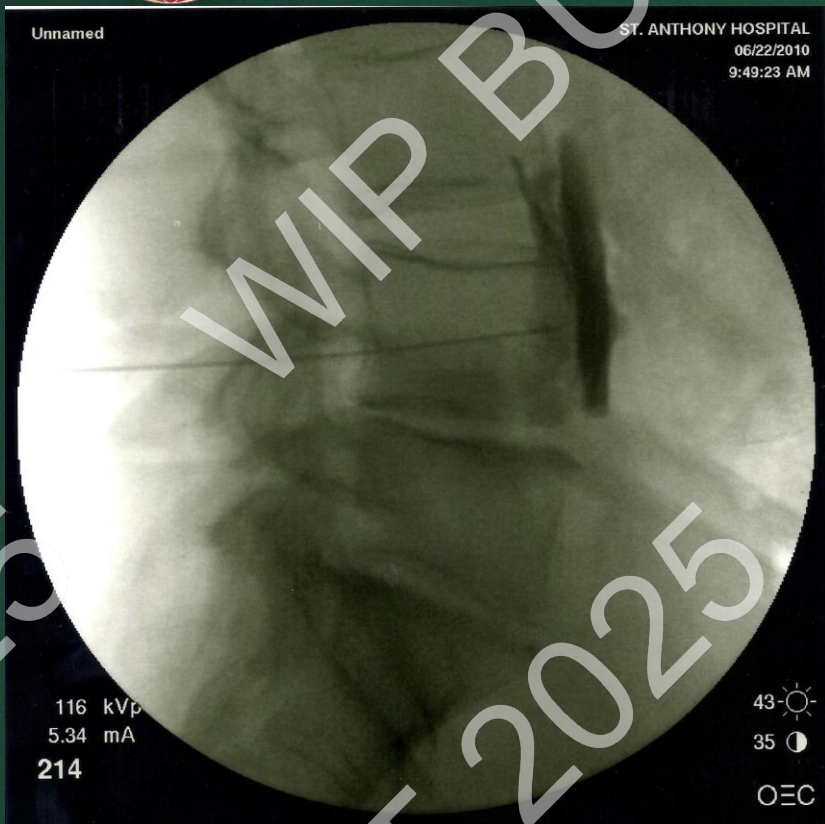
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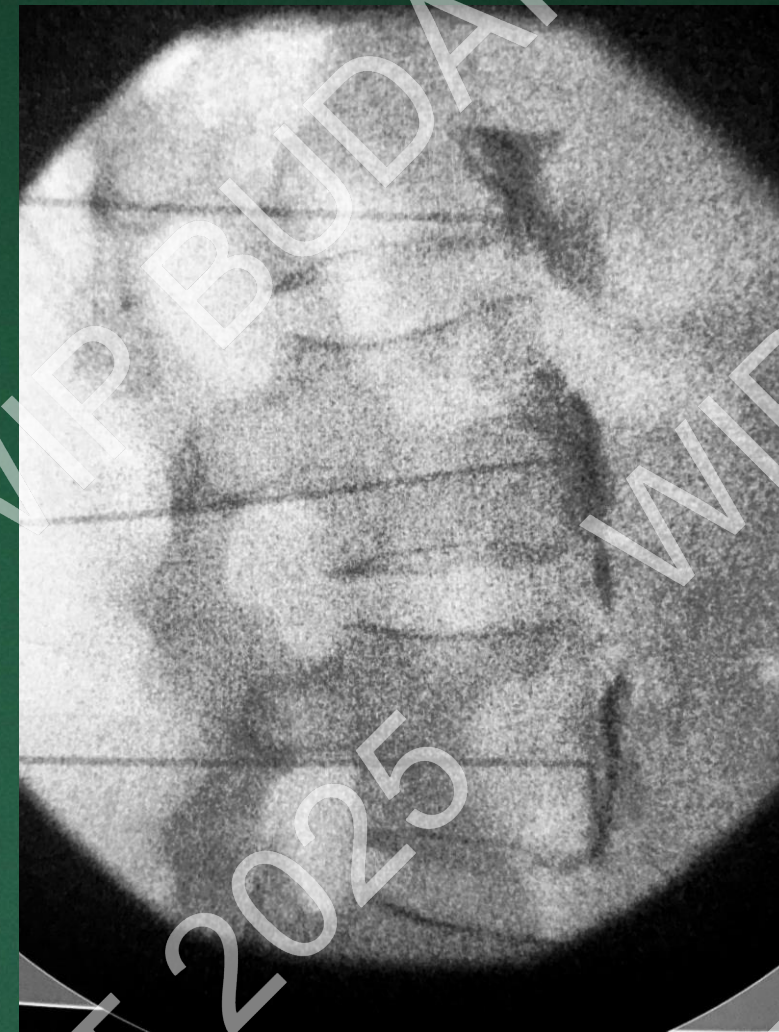
Turker, G, Basagan-Mogol, E, Gurbet, A. A new technique for superior hypogastric plexus block: the posteromedian transdiscal approach. Tohoku J Exp Med 2005; 206(3): 277–281. [Google Scholar](#), [Crossref](#), [Medline](#), [ISI](#)



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Rectal Pain



Bristow, A, Foster, JM. Lumbar sympathectomy in the management of rectal tenesmoid pain. Ann R Coll Surg Engl 1988; 70(1): 38–39. [Google Scholar](#), [Medline](#), [ISI](#)

Palliat Med. 2017 Dec;31(10):975-981. doi: 10.1177/0269216317697897. Epub 2017 Mar 1.

A systematic review of the effectiveness of palliative interventions to treat rectal tenesmus in cancer.



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[Pain Med.](#) 2020 Jan; 21(1): 176–184.

Published online 2019 Jul 5. doi: [10.1093/pm/pnz142](https://doi.org/10.1093/pm/pnz142)

PMCID: PMC7761528

PMID: [31274168](https://pubmed.ncbi.nlm.nih.gov/31274168/)

The Use of L2 and L3 Lumbar Sympathetic Blockade for Cancer-Related Pain, an Experience and Recommendation in the Oncologic Population

[Matthew A Spiegel](#), MD, [Lee Hingula](#), MD, [Grant H Chen](#), MD, [Aron Legler](#), MD, [Vinay Puttanniah](#), MD, and [Amitabh Gulati](#), MD

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Methods

We performed a retrospective analysis of patients with cancer-related pain in the back, abdomen, pelvis, or legs treated at Memorial Sloan Kettering Cancer Center between 2000 and 2018 undergoing lumbar sympathetic blockade at L2 or L3. Blocks were accomplished by injection of local anesthetic or local anesthetic with steroid under fluoroscopy. We measured numerical rating scale scores, percent relief, and relief time. The primary end point was defined as “effective” or “ineffective” pain relief. Effective pain relief was defined as $\geq 30\%$ relief for at least one day.

Results

We identified 124 data points of lumbar sympathetic blockade at L2 or L3, of which 57 were with complete data and used for analysis. Peri-injection, 42 data points had active disease whereas 15 were in remission. Lumbar sympathetic blockade was 67% effective in the back pain cohort, 82% effective in the abdominopelvic pain cohort, and 75% effective in the leg pain cohort. Seventeen data points went on to neurolysis, two to neuromodulation, and eight to intrathecal pump implantation.

Conclusions

Lumbar sympathetic blockade is effective for back, abdominopelvic, and leg pain related to cancer and its treatments. Future research should be aimed at refining its role within multimodal pain management.



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Ganglion Impar Block - indications

Coccydynia

Anal pain

Rectal pain

Radiation proctitis
Proctalgia Fugax
Post-AP resection

Chronic prostatitis and urethral pain

**Burning and Localized perineal pain
associated with urgency**





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Look at the Spread.....



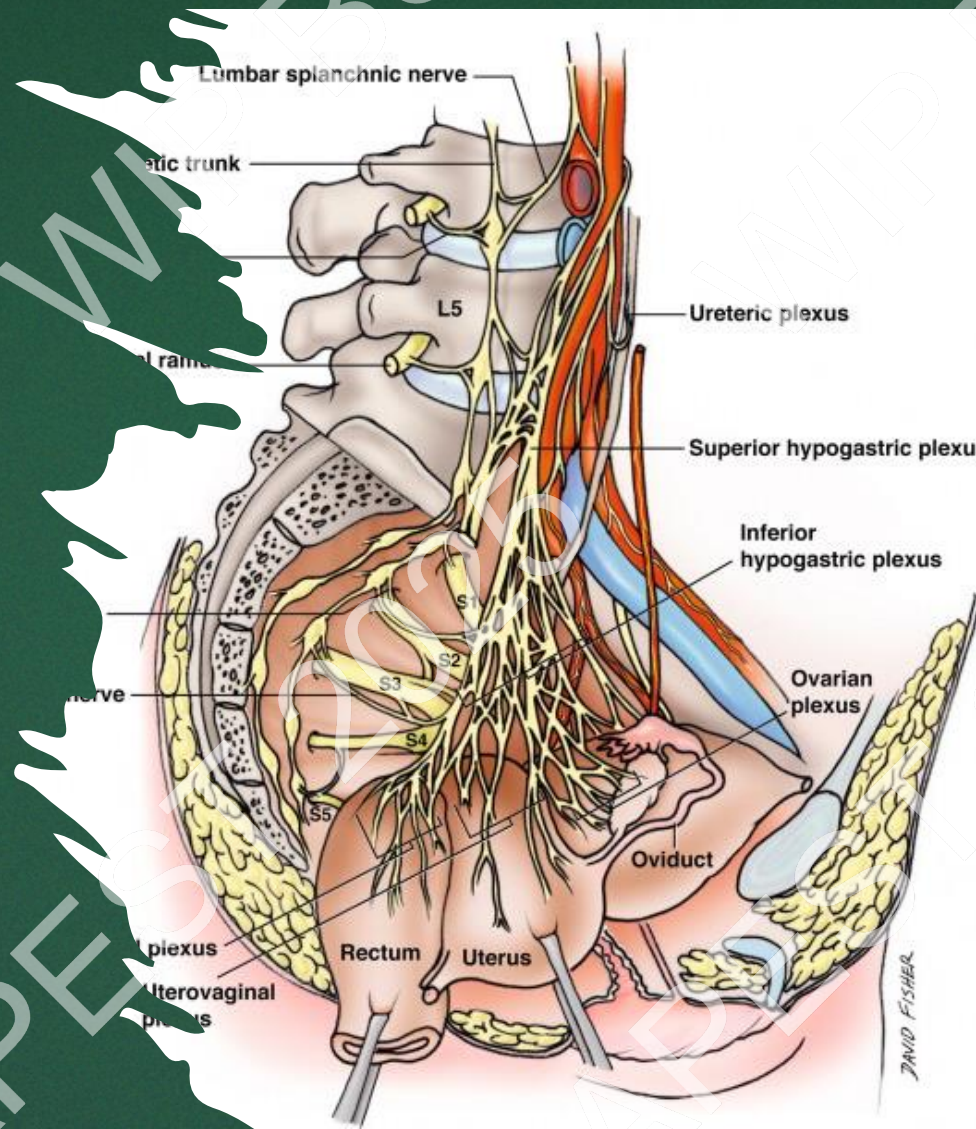


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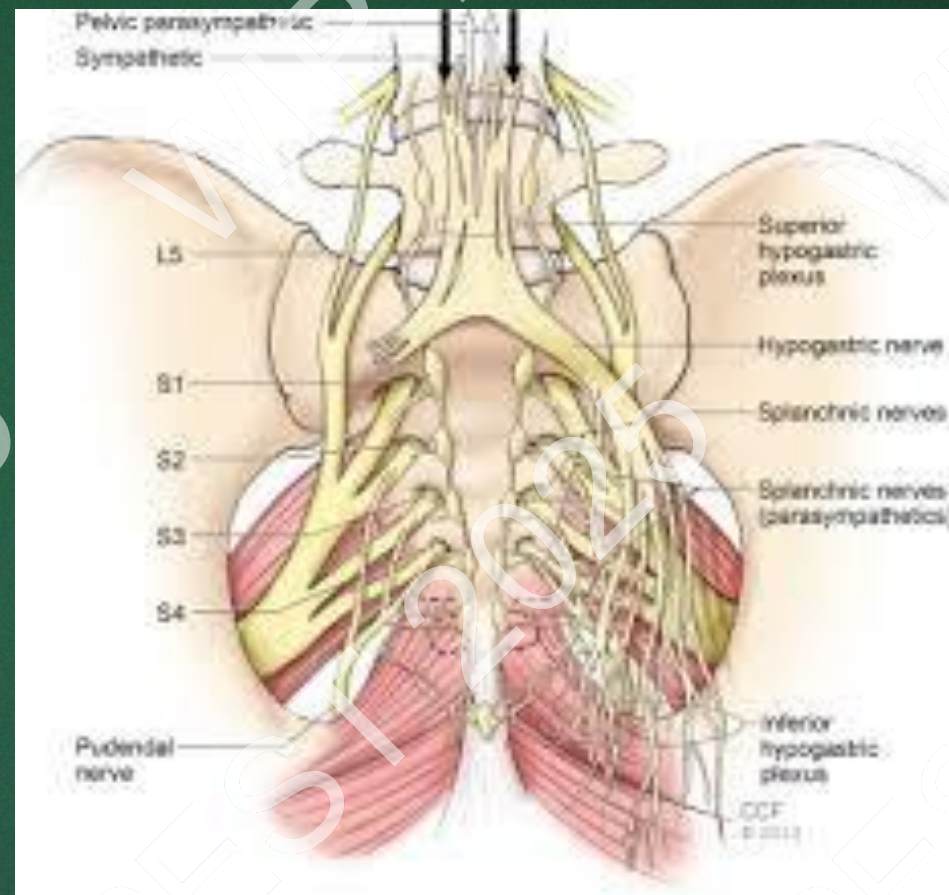
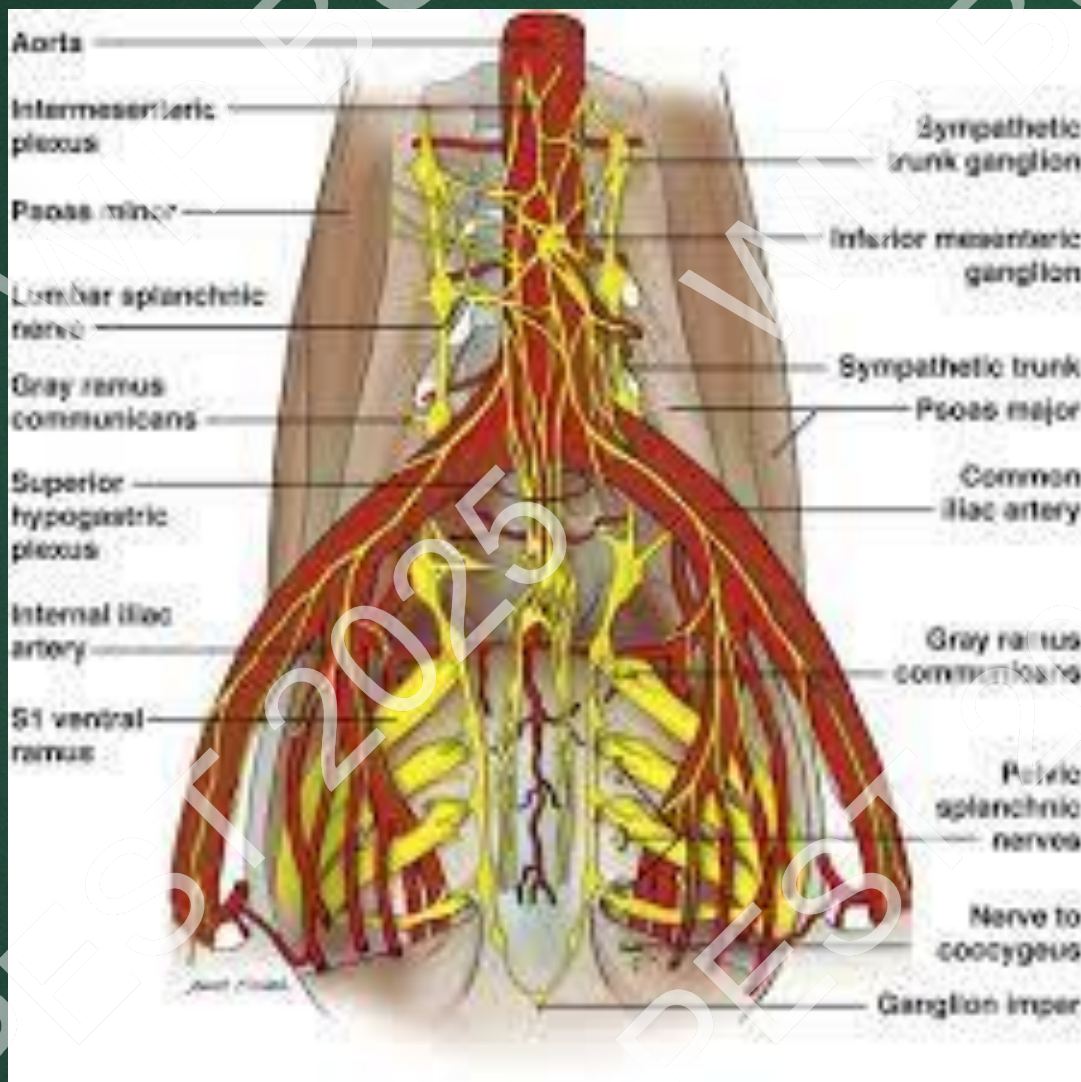


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► Science. Author manuscript; available in PMC: 2019 Jan 9.

Published in final edited form as: Science. 2016 Nov 18;354(6314):893–897. doi: [10.1126/science.aah5454](https://doi.org/10.1126/science.aah5454)

The sacral autonomic outflow is sympathetic

I Espinosa-Medina ^{1,4}, O Saha ^{1,4}, F Boismoreau ¹, Z Chettouh ¹, F Rossi ¹, W D Richardson ², J-F Brunet ^{1,4}

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PMCID: PMC6326350 EMSID: EMS81129 PMID: [27856909](https://pubmed.ncbi.nlm.nih.gov/27856909/)

Fig. 1. Sacral preganglionic neurons develop like sympathetic, not parasympathetic, ones.

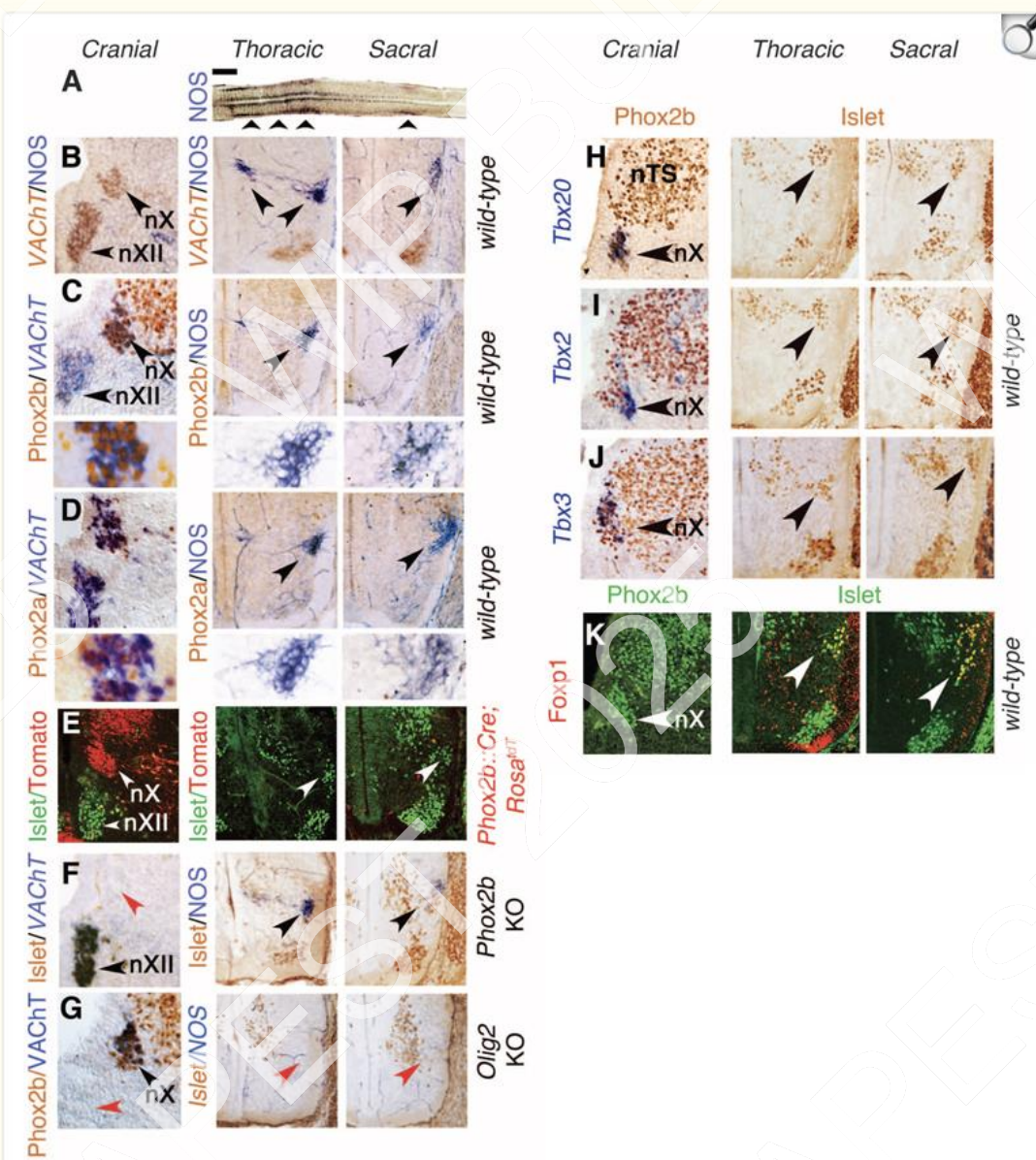
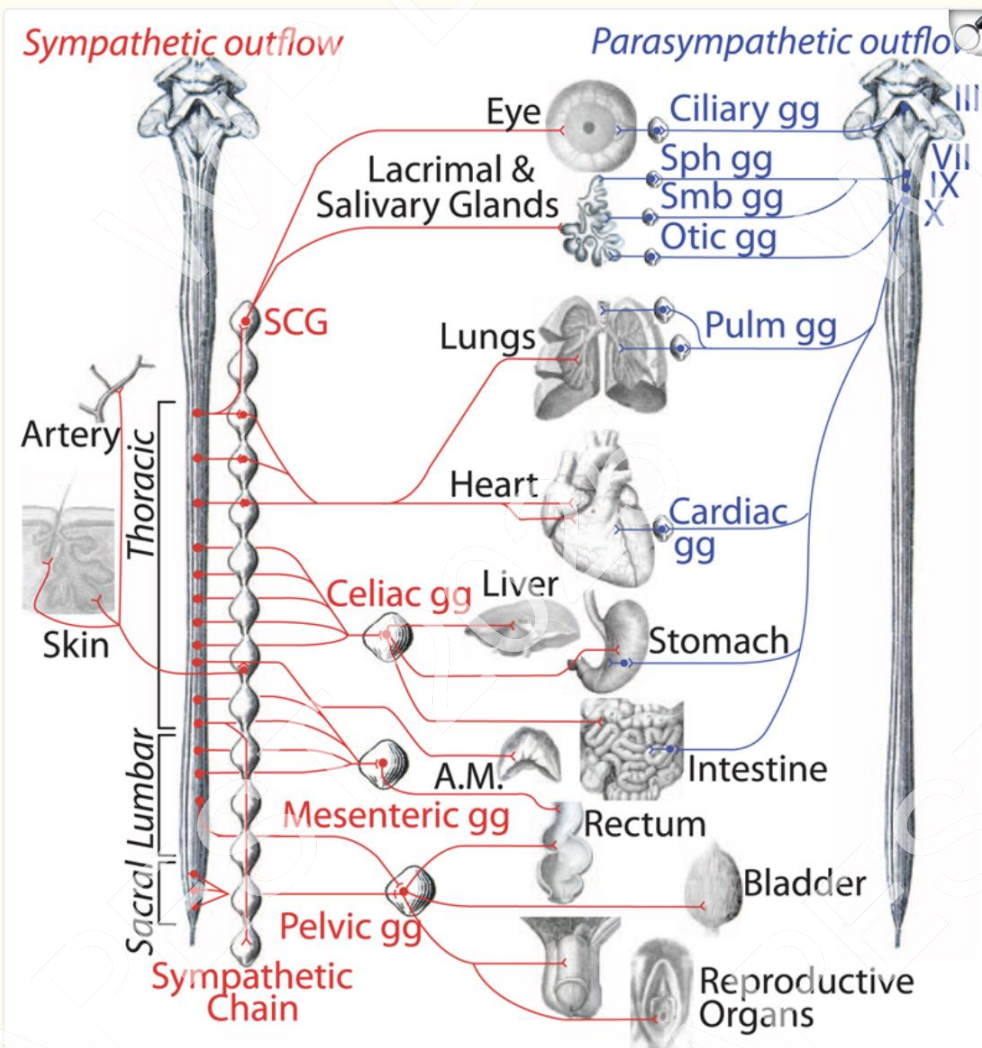


Fig. 4. Revised anatomy of the autonomic nervous system.





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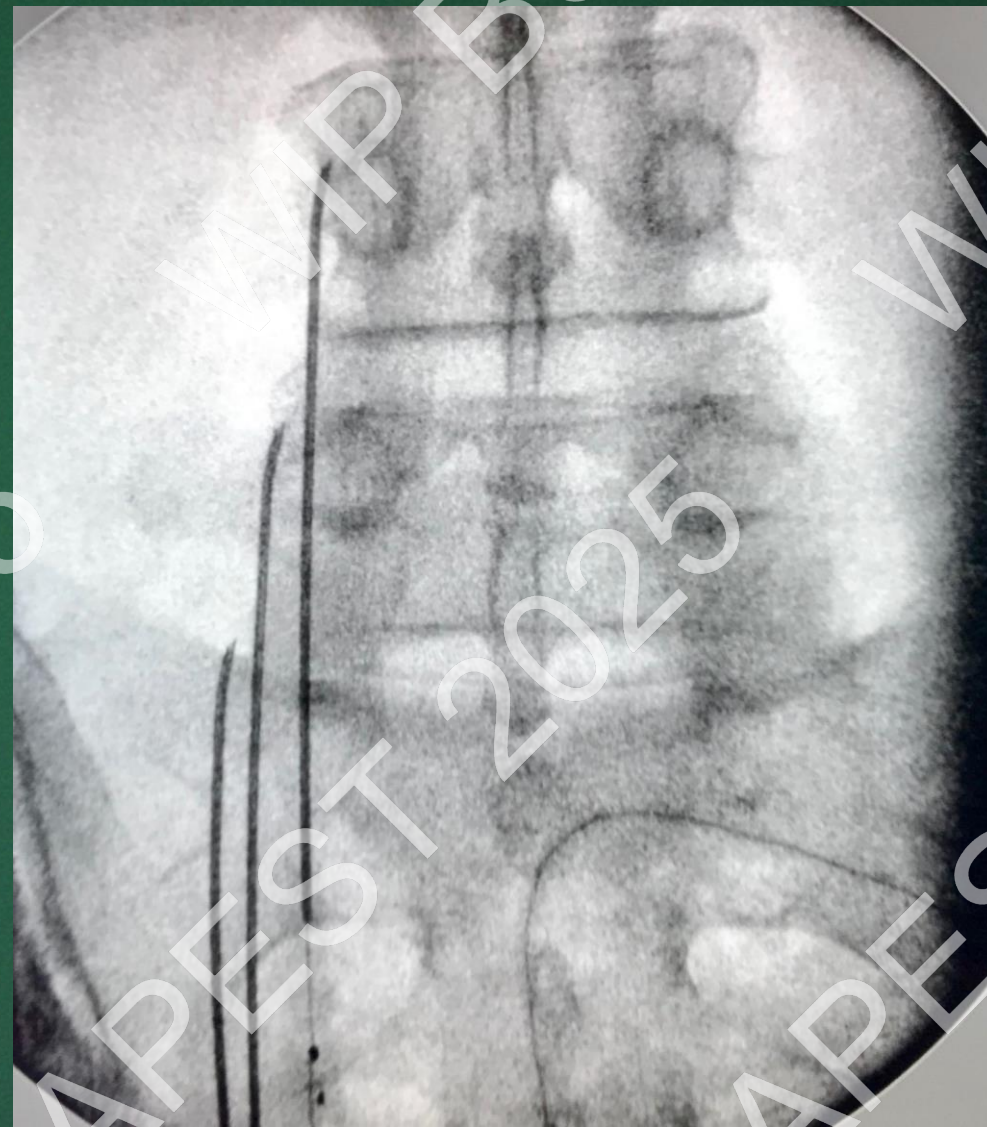
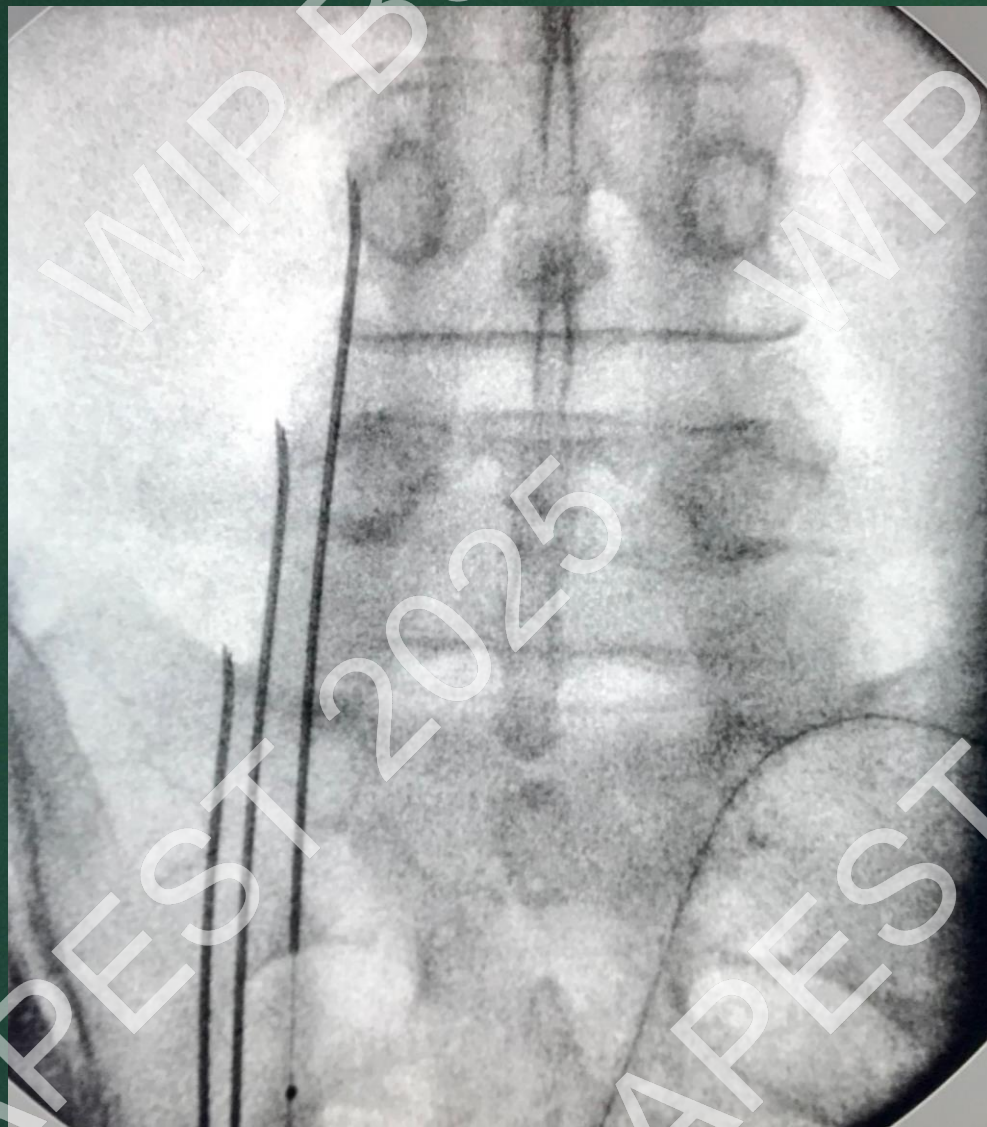


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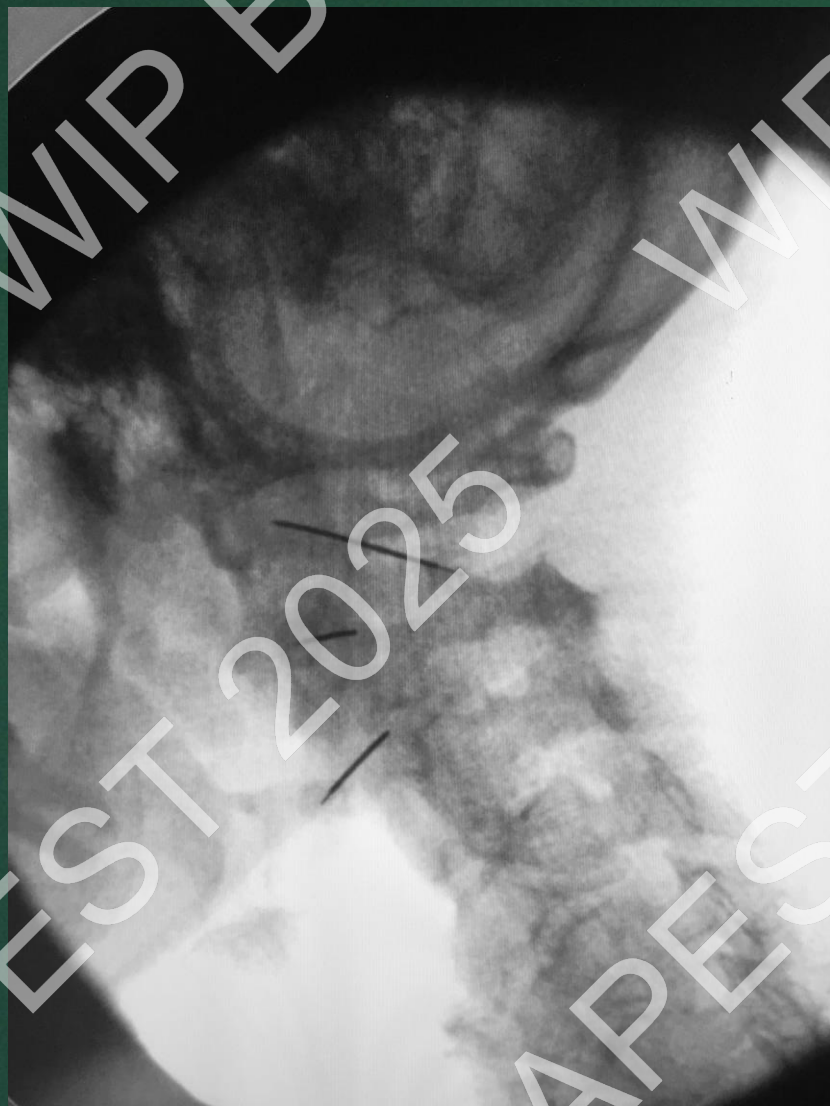


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Management of Bone Pain

- NOT just with Opioids & NSAIDs
- Irradiation
- Bisphosphonates & Calcitonin
- Steroids
- Bones are rich in nerves – so treat it like neuropathic pain with neuropathic agents
- IV Lignocaine at doses of 2-5mg/kg/hour has been used successfully for opioid resistant neuropathic pain

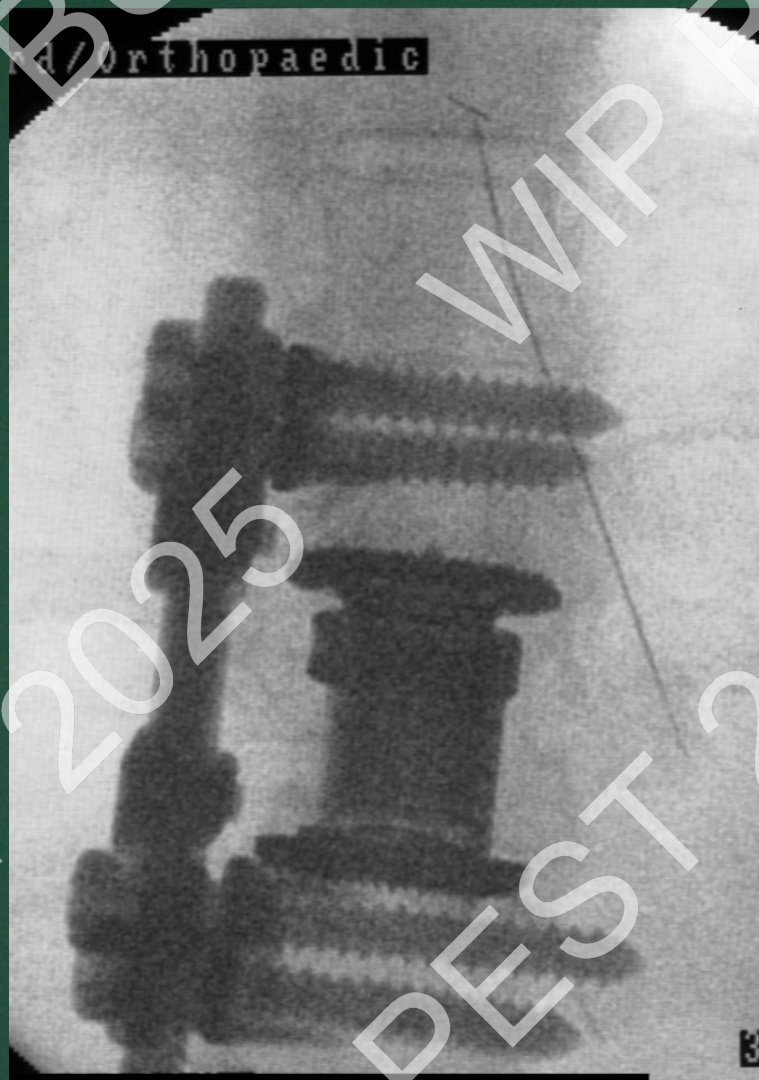


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Cancer Patient Fracture Evaluation (CAFE) Study

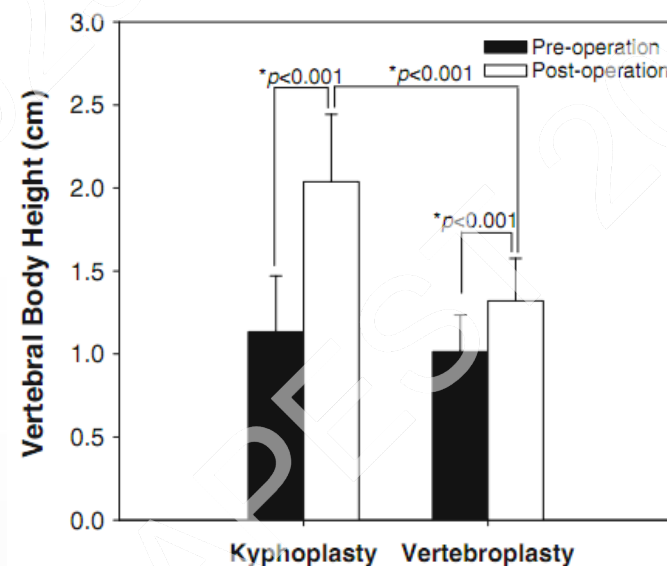
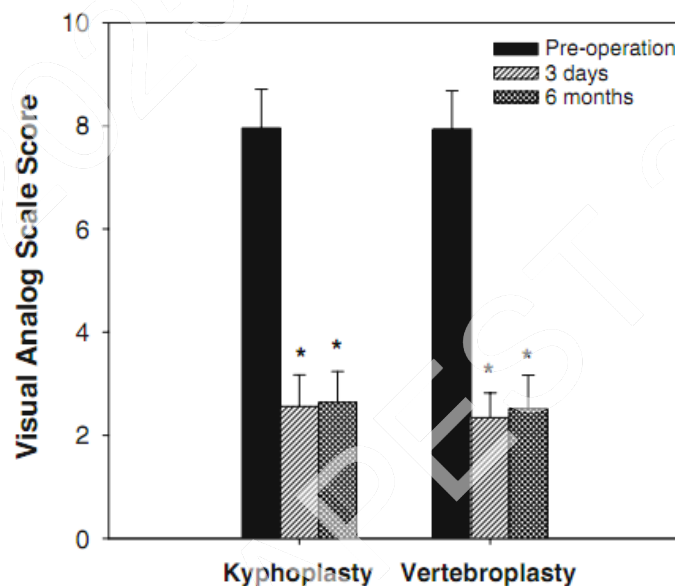
**Balloon Kyphoplasty versus Non-surgical
Fracture Management for Treatment of Painful
Vertebral Body Compression Fractures in
Patients with Cancer: A Multicentre,
Randomised Controlled Trial**

Osteoporos Int (2010) 21:359–364
DOI 10.1007/s00198-009-0952-8

ORIGINAL ARTICLE

Balloon kyphoplasty versus vertebroplasty for treatment of osteoporotic vertebral compression fracture: a prospective, comparative, and randomized clinical study

J. T. Liu • W. J. Liao • W. C. Tan • J. K. Lee • C. H. Liu •
Y. H. Chen • T. B. Lin





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Pain 105 (2003) 387–392

PAIN

www.elsevier.com/locate/pain

Topical review

Causes of pain in degenerative bone and joint disease: a lesson from vertebroplasty

David Niv^{a,*}, Michael Gofeld^a, Marshall Devor^b

^aCenter for Pain Medicine, Tel-Aviv Sourasky Medical Center, Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv 64239, Israel

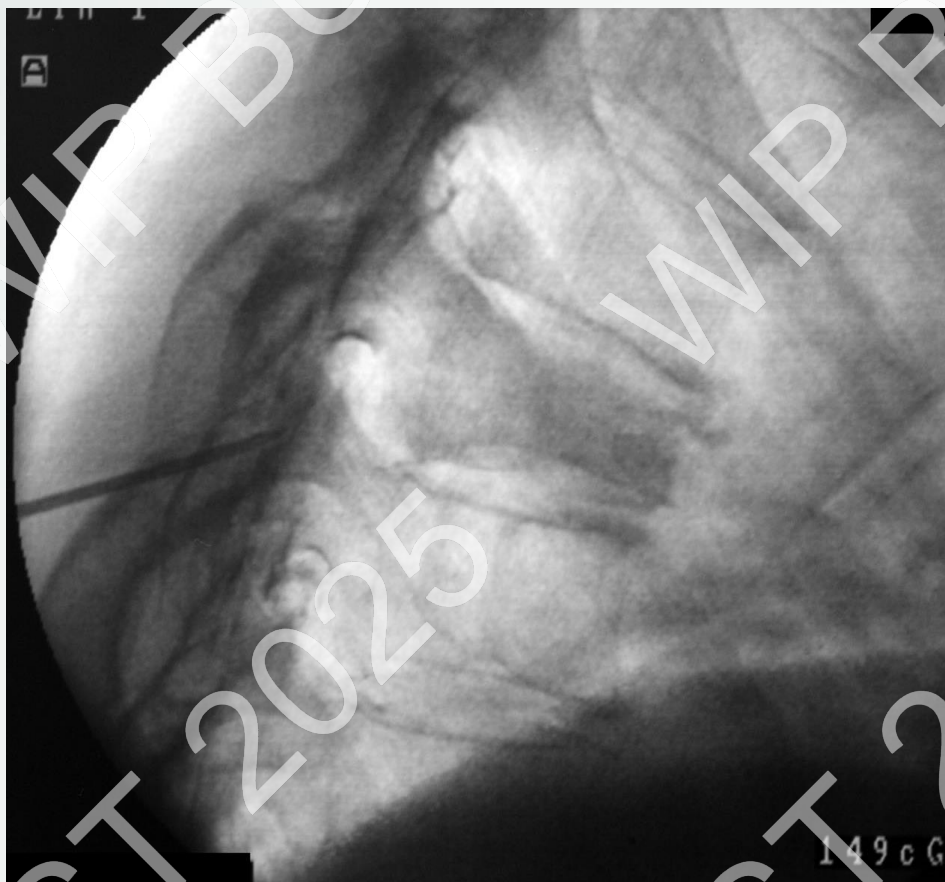
^bInstitute of Life Sciences and Center for Research on Pain, Hebrew University of Jerusalem, Jerusalem 91904, Israel

Received 24 June 2003; accepted 25 June 2003

“Probably a more important mode of analgesia,
is destruction of sensitive nerve endings within the
matrix by the PMMA cement itself”

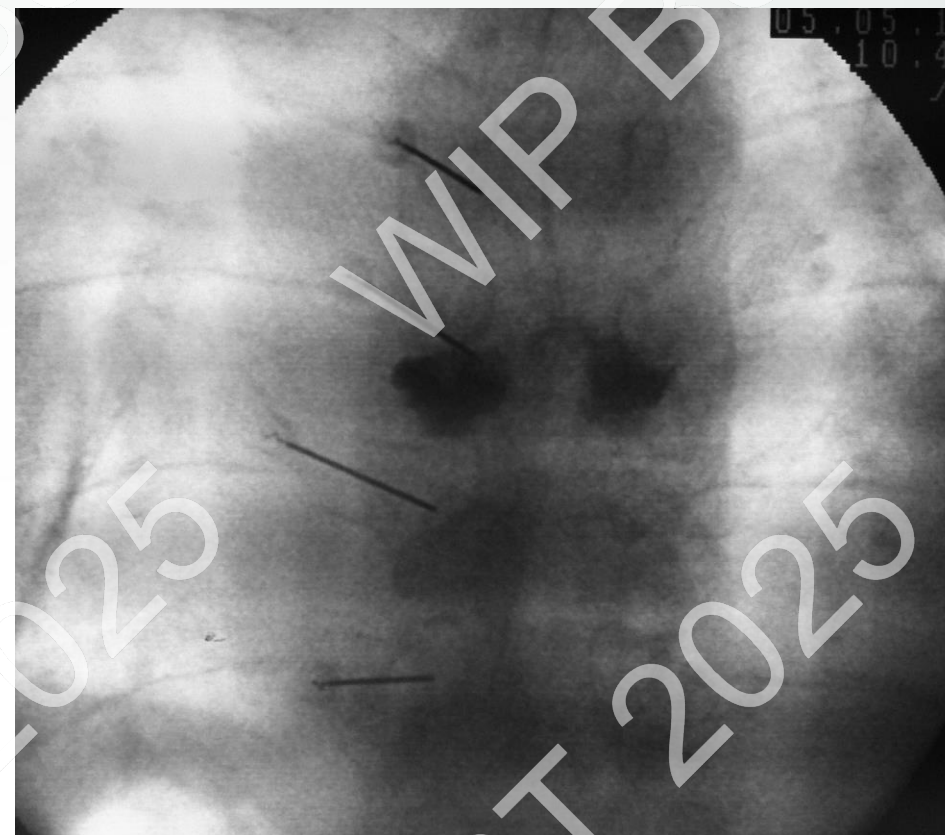


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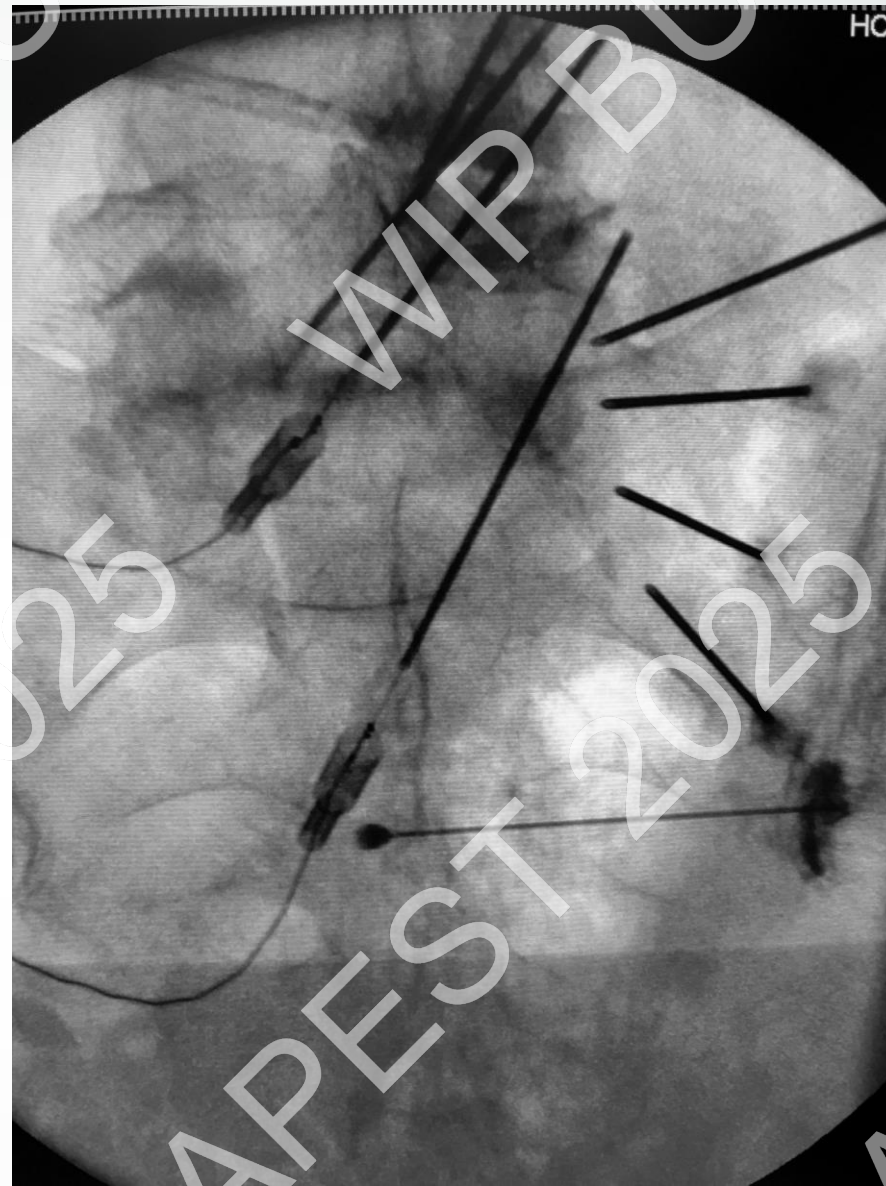
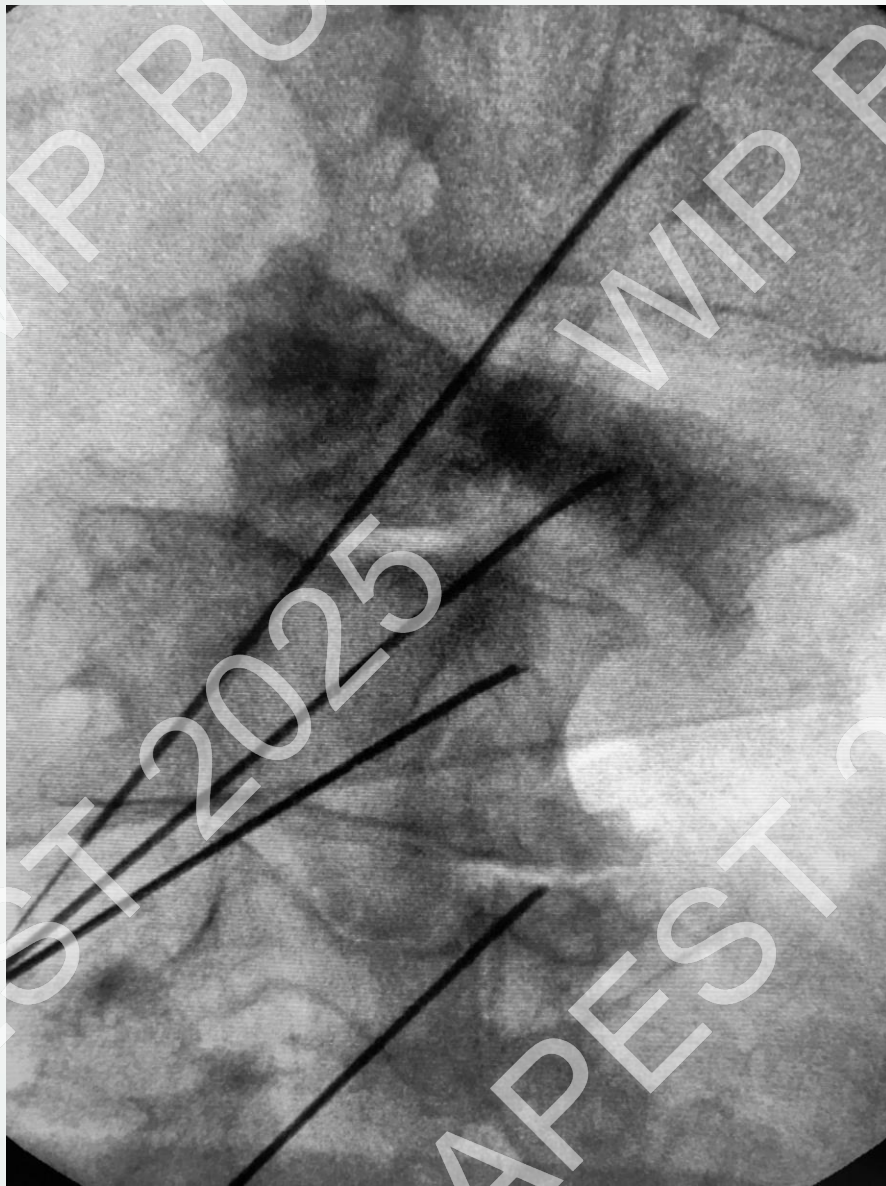


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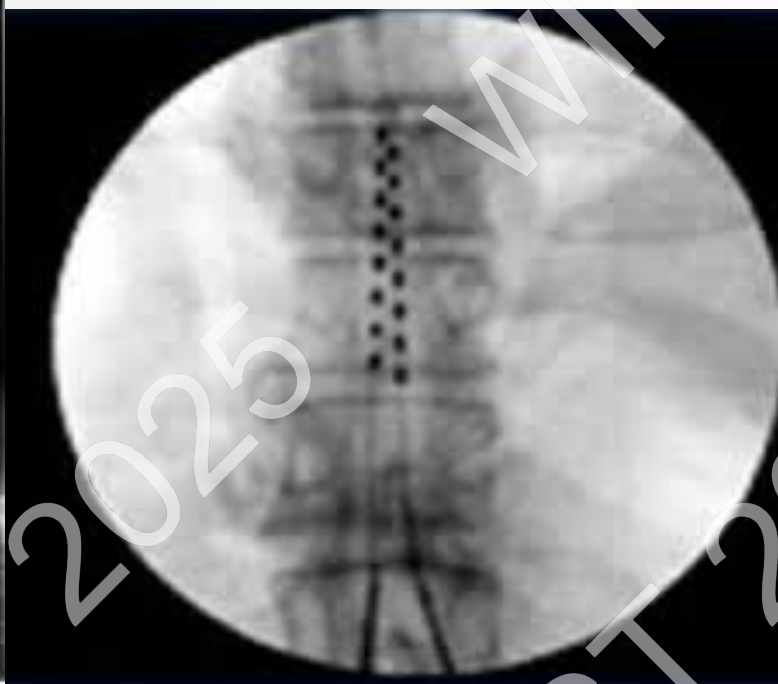


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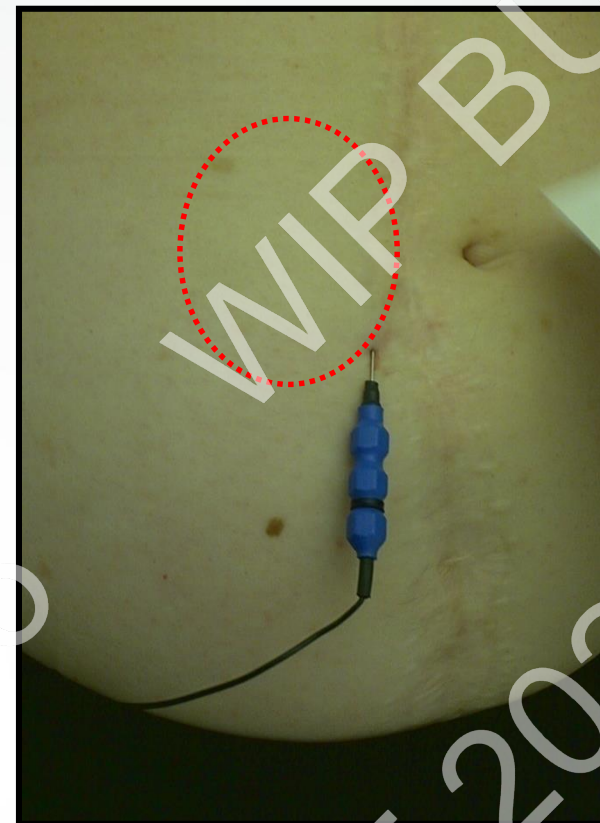


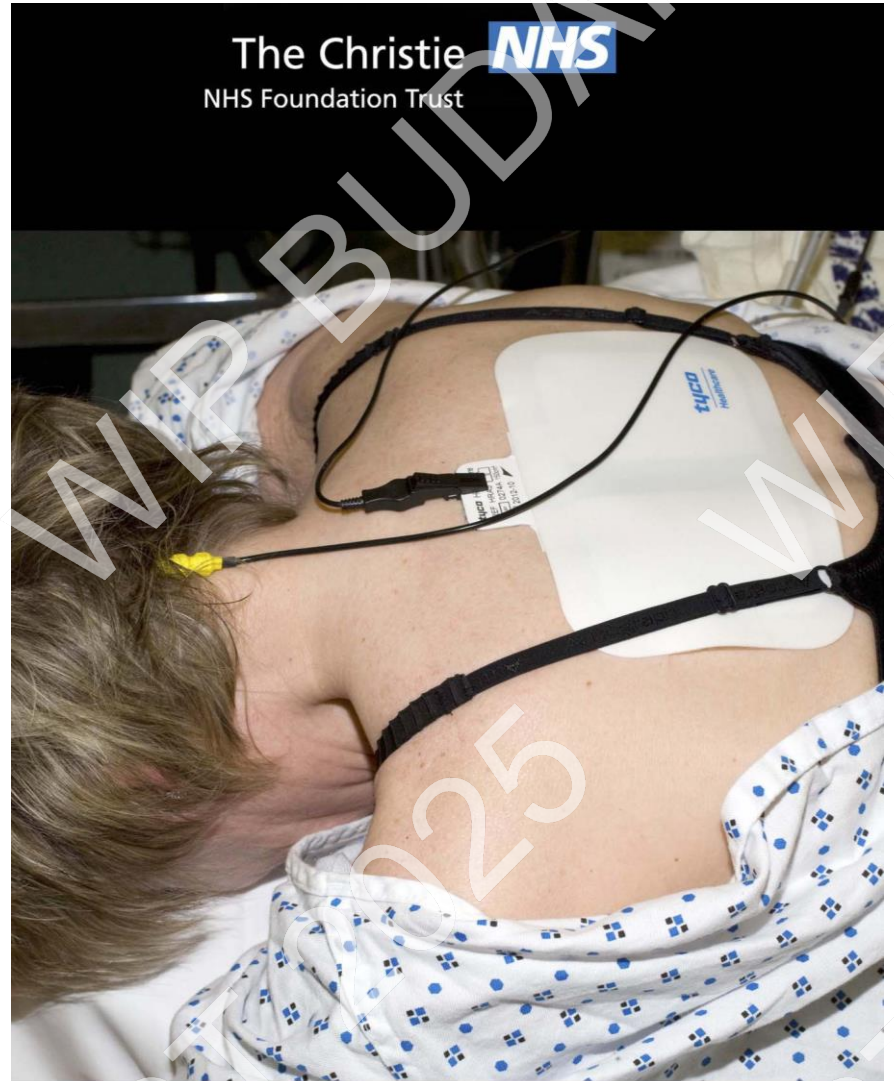
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CONSENT LEVEL:
PATIENT RECORDS and RESTRICTED
EDUCATIONAL USE BY MEDICAL STAFF

Devices



BioWave PRO

Product Code
BWP-S

☉ Clinic Use

3858hz-3980hz sinusoidal wave from alternating current
Max output 28 Volts

Compatible with

- Percutaneous electrodes B and E
- Non Invasive B and E
- Silver Wraps



BioWave HOME

Product Code
BWH-S1.2

☉ Clinic Use ☉ Home Use

3858hz-3980hz sinusoidal wave from alternating current
Max output 28 Volts

Compatible with

- Percutaneous electrodes B and E
- Non Invasive B and E
- Silver Wraps



BioWaveGO

Product Code
BWG-INTL

☉ Home Use ☉ Clinic Use during rehab

3858hz-3980hz sinusoidal wave from alternating current
Max output 20 Volts

Compatible with

- Non Invasive electrodes B and E



Pain Relief Pads



Non Invasive electrodes set B

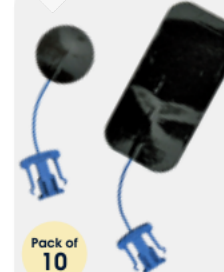
Product Code
BYEN01-B

☉ Reusable for same patient 6-8 times (until they do not stick)

2inch diameter round electrodes with hypoallergenic hydrogel

Compatible with

- PRO
- HOME
- GO



Non Invasive set E

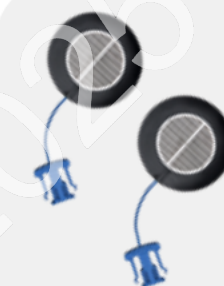
Product Code
BWEN02-E

☉ Reusable for same patient 6-8 times (until they do not stick)

1.375 inch diameter round electrode with rectangular 2 inch by 4 inch dispersive electrode. Both with hypoallergenic hydrogel.

Compatible with

- PRO
- HOME
- GO



Percutaneous electrodes Set B

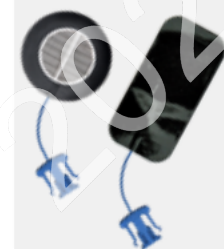
Product Code
BWEP01-B

☉ Clinic Use ☉ STERILE, single use

2.5inch diameter round percutaneous electrodes each with 1014 needles, 0.75mm in length, bypasses impedance of skin

Compatible with

- PRO
- HOME



Non Invasive electrodes set B

Product Code
BWEP02-E

☉ Clinic Use ☉ STERILE, single use

2.5inch diameter round percutaneous electrode with 1014 needles, 0.75mm in length, bypasses impedance of skin and rectangular 2 inch by 4 inch dispersive electrode with hypoallergenic hydrogel

Compatible with

- PRO
- HOME

BioWraps

FDA approved. Not available under CE.



Silver Back Wrap

Small/medium:
BWRPSILVER-BACK-SM
Large/xlarge:
BWRPSILVER-BACK-LXL

Compatibility
→ Pro
→ Home



Silver Wrap Knee

Small/medium:
BWRPSILVER-KNEE-SM
Large/xlarge:
BWRPSILVER-KNEE-LXL

Compatibility
→ Pro
→ Home



Silver Wrap Thigh and Calf

Small/medium:
BWRPSILVER-THIGH-CALF-SM
Large/xlarge:
BWRPSILVER-THIGH-CALF-LXL

Compatibility
→ Pro
→ Home



Silver Wrap Wrist and Hand

Small/medium:
BWRPSILVER-WRIST-SM
Large/xlarge:
BWRPSILVER-WRIST-LXL

Compatibility
→ Pro
→ Home



Silver Wrap Arm

BWRPSILVER-ARM

Compatibility
→ Pro
→ Home



Silver Wrap Foot and Ankle

Small/medium:
BWRPSILVER-FOOT-ANKLE-SM
Large/xlarge:
BWRPSILVER-FOOT-ANKLE-LXL

Compatibility
→ Pro
→ Home



Knee Compression Sleeve Wrap

Small/medium:
BWRPBLUE-KNEE-SM
Large/xlarge:
BWRPBLUE-KNEE-LXL

Velcro electrodes
sold separately

Compatibility
→ Velcro
electrodes
→ GO
→ HOME
→ PRO



BioWave Blue Wrap

Back brace for added support whilst
using BioWave.

Small/medium:
BWRPBLUE-BACK-SM
Large/xlarge:
BWRPBLUE-BACK-LXL

Velcro electrodes
sold separately

Compatibility
→ Velcro
electrodes
→ GO
→ HOME
→ PRO



Velcro Electrodes for Blue BioWraps

Re-useable velcro- backed non
invasive electrodes.

Compatible with Blue BioWraps only

Contains 6 electrodes

BIOWRAP-PADS



Silver Wrap Conductive Cream

BWCC
FOR USE WITH THE SILVER WRAPS



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Topicals

- Topicals work locally, as opposed to transdermals which work systemically
- Lidocaine 5% patch (Lidoderm®)
 - FDA approved 1999 for PHN
 - Should only be used on intact skin
- Capsaicin - extract of hot peppers
 - Depletion substance P
 - Cream or patch
- Menthol cream
- EMLA
- Compounded preparations – Ketamine, Gabapentin, Phenytoin, Baclofen
- **Topical Cannabis**



Peripheral Nerve Blocks

- **For Acute pain management**
 - Single shot nerve block
 - Catheters for brachial and lumbar plexus pain
 - Femoral sheath catheters for pathological fracture
- **Exceptions**
 - Greater Occipital Nerve Block
 - Suprascapular Nerve Block
 - Intercostal Nerve Block
 - Ilioinguinal/ Iliohypogastric
 - ACNES



Neurolytic Blocks - Dos & Don'ts

- Pre-procedure neurology documentation
- Strict asepsis; anti-microbial cover
- Imaging – planning and procedure
- Resuscitation support and facilities
- Aware of side-effects & complications
- Post-procedural care; opioid down-titration may be required if good analgesia is obtained
- **KNOW WHEN TO BAIL OUT**



Trouble-shooting

- Neurological sequelae
 - Pre-procedure neurology documentation
 - Awake patient whilst injecting
 - Checking movement of the limb
- Bleeding
- Intravascular needle placement
- Contra-lateral pain
- Head-ache
- Other pains
 - Usually related to patient positioning



Causes of Failure

- Wrong Diagnosis
- Wrong Target
- Failing to Hit Target
- Hitting Multiple Targets – no specificity
- **Incomplete neural pathway (blocks ineffective)**
- **Psychological factors**
- **Drug seeking behaviour** – antidepressant, anxiolytic
- **Secondary gains** - more oncological treatments



Summary

- Do what you can – but make it work
- Have a plan to do something with long term effect
- Preserve motor and autonomic function (or whatever is left of it)
- They have enough problems; try not to give them more
- Sometimes numbness is worse than pain especially on the face
- You may get only get once chance with these patients
- Get a mentor and train under their guidance
- Build a peer support group

SOMETIMES YOU CAN ONLY LEARN
IF YOU TAKE THE PLUNGE



HRX
BY AMERICAN RED CROSS



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