

Doubling Down: Novel Use of Dual Epidural Catheters to Treat Acute on Chronic Pain in a Post-Esophagectomy Patient

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INTRODUCTION

- Incorporation of neuraxial techniques into multimodal analgesia regimens has been shown to
 - Reduce postoperative pain management
 - Reduce postoperative pulmonary complications
 - Lower oral and systemic opioid requirements
 - Decrease systemic analgesic side effects
- In complex patients with chronic pain, optimization of neuraxial techniques for anticipated surgical pain can enhance a multimodal approach when escalation of current pharmacologic therapies is unattainable.

MATERIALS AND METHODS

This case report was conducted in accordance with institutional guidelines and ethical standards. Written informed consent was obtained from the patient for the publication of this case report. Identifying details were removed to protect patient confidentiality.

CASE

- 34-year-old female internationally transferred for surgical treatment of recurrent obstructions.
- PMH pertinent for Ehlers-Danlos syndrome complicated by numerous abdominal surgeries including open laparotomies, Whipple, and multiple hernia repairs with mesh.
- **The Inpatient Pain Service was consulted for management of acute on chronic pain, anticipated surgical pain, and an indwelling tunneled T7-8 epidural catheter.**
 - Fentanyl 5mcg/mL + Bupivacaine 0.075% @ 5mL/hr).

CASE

- **On Day 7, the patient underwent exploratory laparotomy and esophagogastroduodenoscopy.**
 - Admitted to the ICU for uncontrolled, postoperative pain.
 - Dexmedetomidine infusion (≤ 1.5 mg/kg/hr).
- **On Day 9, patient underwent defunctioning esophagectomy and jejunostomy.**
 - **L3-4 epidural catheter placed for post-operative pain control.**
 - Fentanyl 5mcg/mL + Bupivacaine 0.075% @ 8mL/hr
 - Remained intubated and sedated post-operatively due to concern for pain crisis and limited pharmacological therapies available.
- Pharmacologic pain regimen included (daily dosages)

Methadone
IV (140mg)

Hydromorphone
IV (40mg)

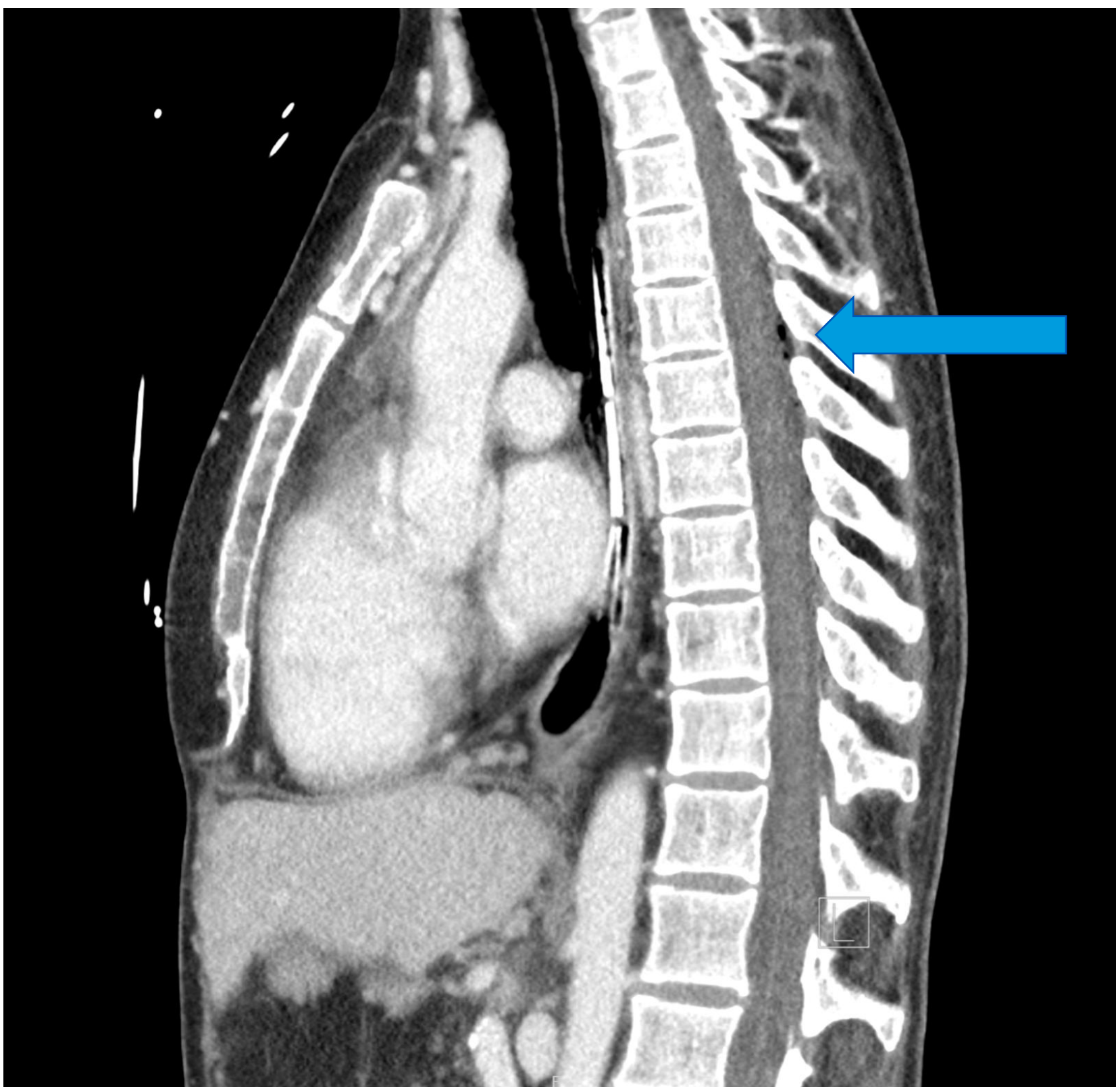
Clonidine Patch
(0.1mg/24hr)

Ketamine
Infusion
(0.4mcg/kg/hr)

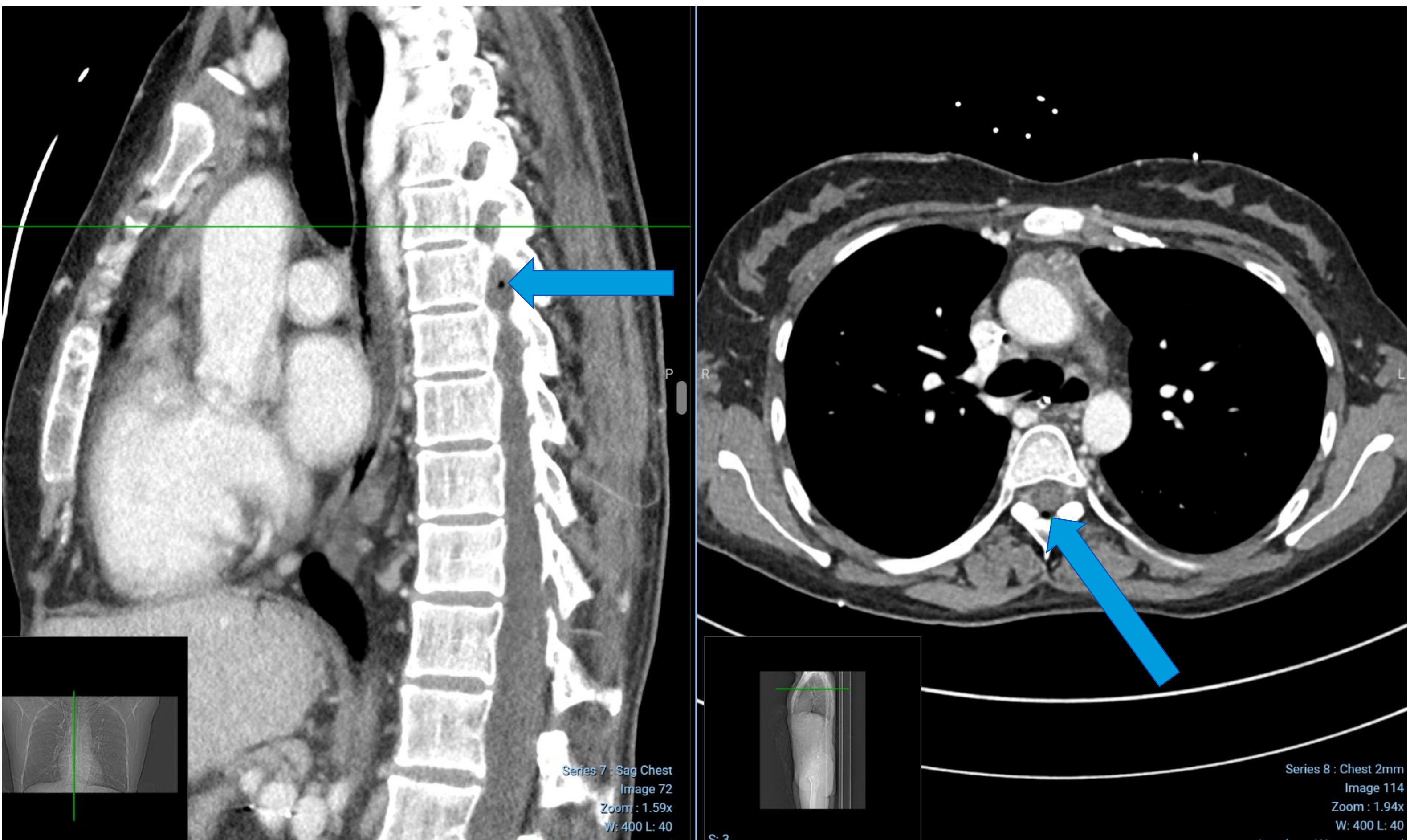
Acetaminophen
IV (1000mg)

Diazepam
(2.5mg PRN)

- Daily morphine milligram equivalents approximated 5,500.
- **On Day 11, patient extubated with 3-4/10 pain.**
- **On Day 12, lumbar epidural infusion discontinued.**
- **On Day 15, tunneled epidural catheter removed with concern for infection.**
- Over the next several months, the patient's pain regimen was deescalated.



Figures 1 & 2
Tunneled
indwelling T7-
T8
catheter (blue
arrows)
located in the
epidural
space.
CT image
obtained prior
to placement
of second
epidural.



DISCUSSION

- The acute postoperative period can be challenging for patients with chronic opioid use, especially with concerns for hyperalgesia and allodynia at baseline.
- Neuraxial techniques, including dual epidural catheters, have been shown to decrease pain and postoperative complications after complex surgeries.
- While risks include neuraxial bleeding, infection, intrathecal tap, and failure of placement, epidural and tunneled epidurals have been shown to improve outcomes in pain control, especially in patients with refractory pain.
- Despite high opioid needs, dual epidural catheters contributed to this patient's significant post-operative pain control while minimizing systemic opioid escalation.

CONCLUSION

Neuraxial anesthesia, particularly epidural catheter analgesic administration, is an effective, yet underutilized modality of multimodal analgesia for alleviating postsurgical pain without significantly increasing systemic opioid requirements.

REFERENCES

