



Facilitating Extubation With Bilateral Continuous Erector Spinae Plane Catheters After Thoracoabdominal Surgery

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Introduction

- Thoracic epidural analgesia is standard for open thoracoabdominal surgery but may be contraindicated in patients with coagulopathy, hemodynamic instability, or infection.
- The erector spinae plane (ESP)** block is a novel ultrasound-guided alternative offering multi-dermatomal analgesia with a safer profile.
- This case highlights bilateral continuous ESP catheters in a high-risk, opioid-tolerant patient where epidural was deferred.
- ESP placement enabled respiratory improvement and extubation in the immediate postoperative period.

Case Description

- 40-year-old man with GE junction adenocarcinoma underwent a **20-hour total gastrectomy** with colonic interposition, enterolysis, partial colectomy, and right thoracotomy.
 - Intraoperative resuscitation included 9 L crystalloid, 1.5 L albumin, and 3u PRBCs (EBL ~1 L).
- He was **septic** with an **elevated INR** and **positive blood cultures**, so **epidural analgesia was deferred** due to risk of bleeding and infection.
- Course was notable for **hypovolemic shock** requiring dual vasopressors (norepinephrine, phenylephrine), **coagulopathy**, **high opioid requirement (MME>1000)** and **four chest tubes**, preventing extubation.
- On POD 0, Bilateral T4 ESP catheters were placed** with 30 mL 0.25% bupivacaine per side under ultrasound guidance as rescue analgesia.
- This resulted in improved respiratory mechanics, reduced sedation needs, and **extubation on POD 1**.

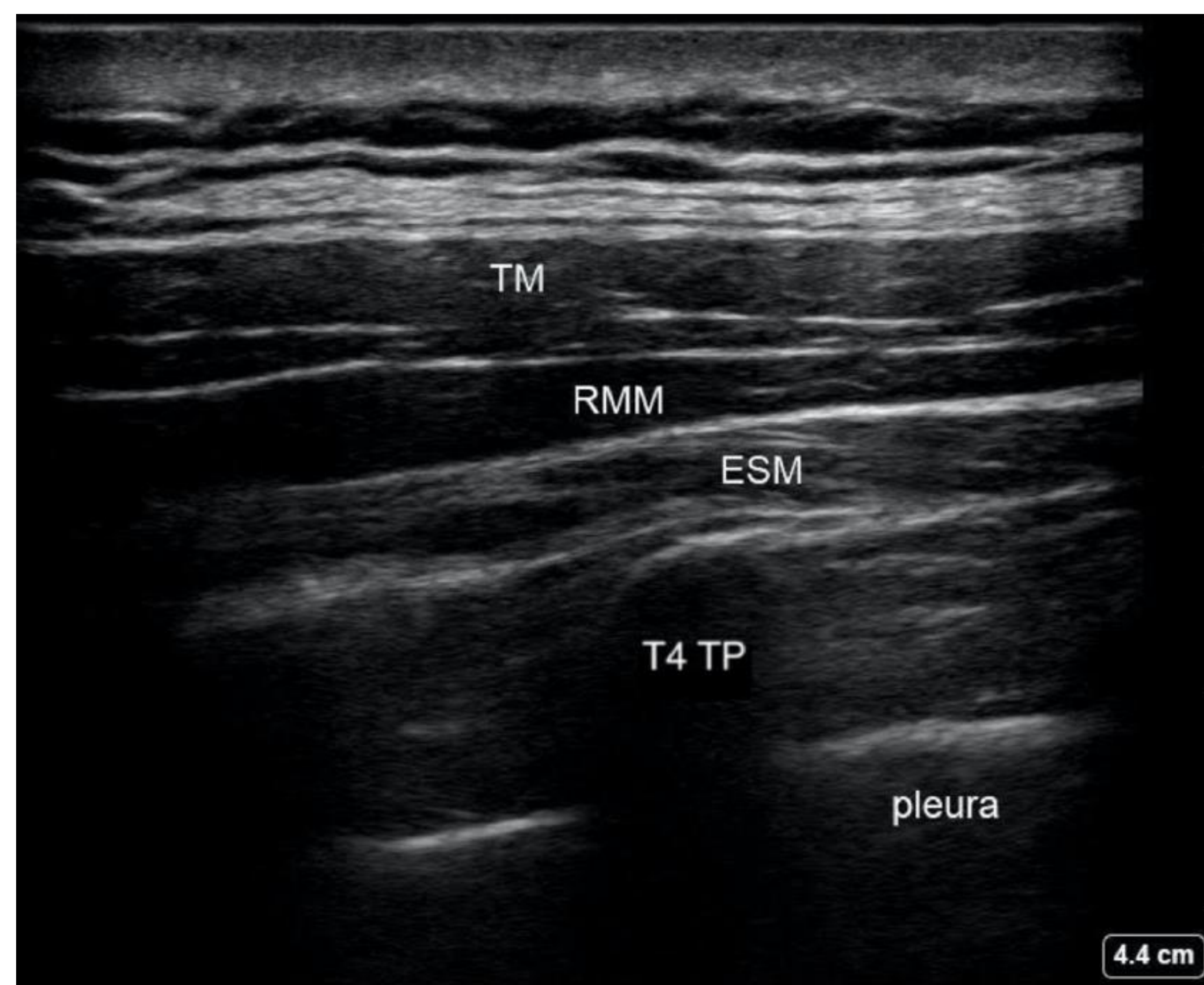


Figure 1. Ultrasound anatomy for ESP block at T4. TM: trapezius, RMM: rhomboid major, ESM: erector spinae, TP: transverse process.

Adapted from: de Haan JB et al. *Cureus*. 2019;11(10):e6237.

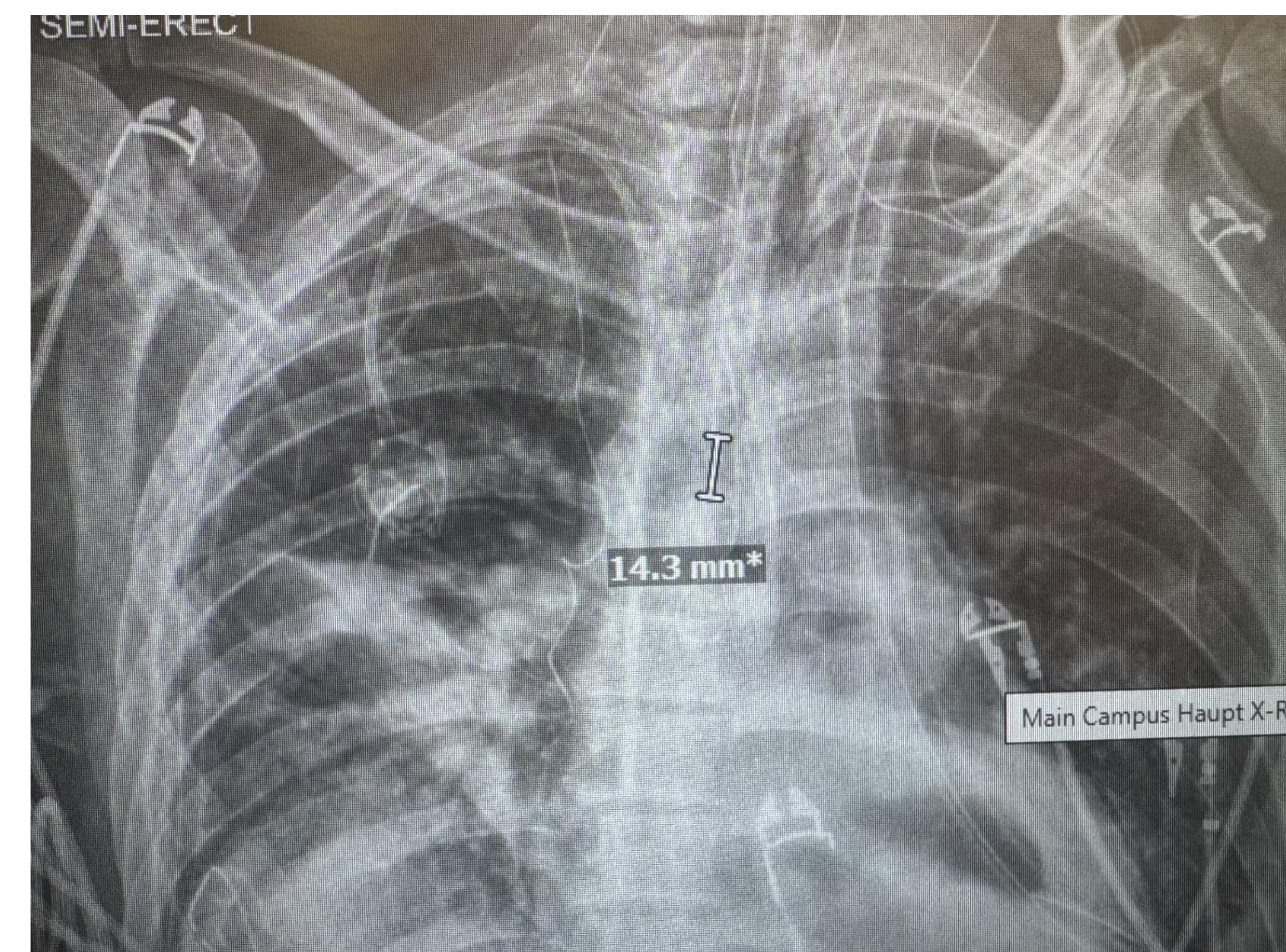


Figure 2. Chest radiograph demonstrating bilateral thoracic erector spinae plane catheters placed at the T4 level.

Discussion

- ESP blocks provide an alternative to thoracic epidural in patients with coagulopathy or hemodynamic instability.
- This patient was not a candidate for neuraxial anesthesia due to bleeding risk and vasopressor use.
- Bilateral ESP catheters **provided effective analgesia, reduced sedation needs, and enabled extubation**.
- ESP may serve as rescue analgesia in high-risk surgical patients when epidural is contraindicated.

Conclusions

- Bilateral continuous ESP catheters enabled extubation in a high-risk, opioid-tolerant patient after major thoracoabdominal surgery.
- This case supports the **use of ESP when epidural is contraindicated**.
- Early ESP intervention may facilitate recovery and improve outcomes in complex surgical patients.

Literature Cited

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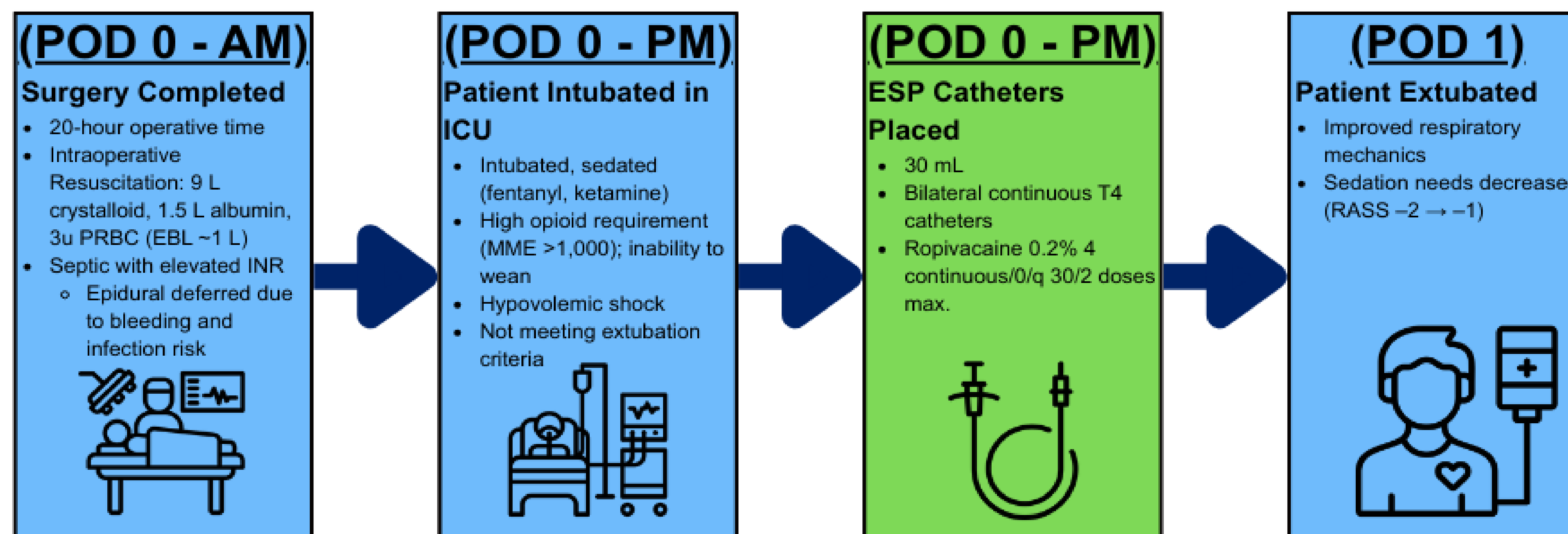


Figure 3. Timeline of surgical and analgesic interventions. ESP = erector spinae plane. Intervention on POD 0 resulted in improved respiratory effort and extubation by POD 1.