

When Infection, Instability, and Opioid Use Disorder Collide: A Pain Management Challenge

Donatine Afful DO, Damilola Gbadebo MD, Josiah Wenck DO, Karen Luna MD, Jennifer Quilter DO
Eastern Virginia Medical School at Old Dominion University, Department of Physical Medicine and Rehabilitation, Norfolk, VA

Background

- Spinal epidural abscess and/or vertebral osteomyelitis are common sequelae among patients with intravenous drug use.
- Pain in these patients is multifactorial and involves various mechanisms like inflammation, neuropathy, and muscle spasms.
- Pain management is further complicated in the presence of opioid use disorder, where opioid tolerance, hyperalgesia, and relapse are balanced against the need to provide adequate pain relief to promote recovery and rehabilitation.

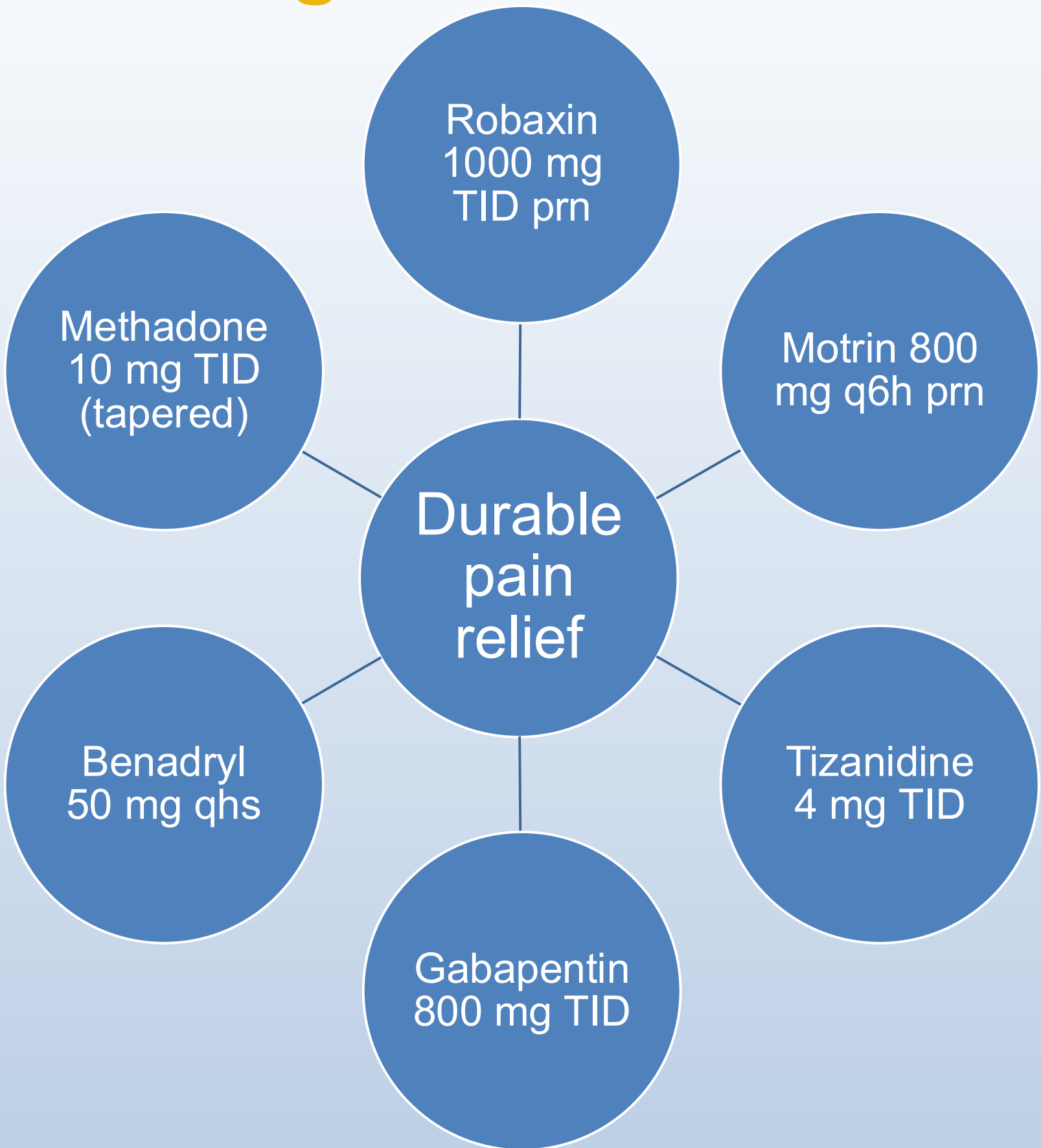
Case Presentation

A 37-year-old patient with history of IV fentanyl and cocaine abuse presented with thoracic back pain and progressive bilateral lower extremity weakness. Imaging revealed a thoracic epidural abscess causing compression of the spinal cord, as well as T4-T5 discitis and osteomyelitis. The patient underwent thoracic laminectomy and evacuation of the abscess (+ for MRSA) and treated with IV antibiotics. Despite treatment, the patient developed collapse of the T4 and T5 vertebral bodies resulting in severe axial thoracic pain. The patient underwent T1-T8 posterior spinal fusion and T4-T5 corpectomy. Her postoperative course was complicated by recurrent infection and vertebral body destruction from T3-T6.

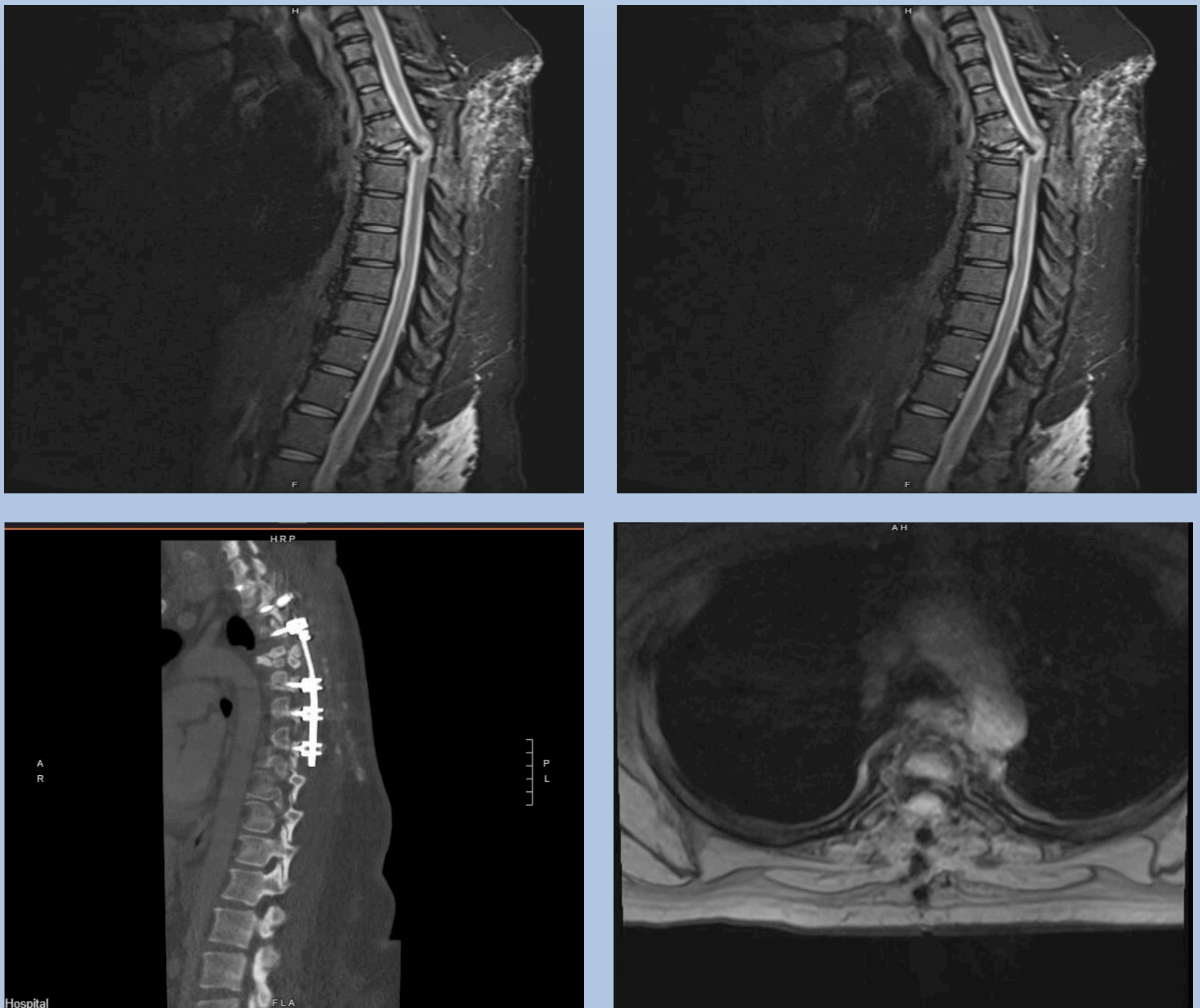
Methods

This case report is based on the retrospective review of the patient’s inpatient medical record, surgical reports, pain assessments, and rehabilitation reports.
As the case report is devoid of patient identifiable information, it is exempt from IRB review requirements as per EVMS/ODU policy.

Medication Regimen



Imaging



Results

- The patient experienced significant pain relief with the regimen. At eight-month follow-up, pain was reported as 3/10 with only occasional flares to 6/10. Functional outcomes improved dramatically, with
- **Oswestry Disability Index scores decreasing from 46% at baseline to 10%, and subsequently to 2%.**
- The patient reported substantial improvement in daily activities, sleep quality, and overall quality of life,.

Conclusion

The case illustrates the difficulties of pain management in a patient with recurrent spinal infection, neurologic injury, and opioid use disorder. **A mechanism-based, multidisciplinary, and opioid-sparing approach can offer effective pain relief** while facilitating rehabilitation and minimizing opioid-related harm.

References

King C, Fisher C, Brown PCM et al. *Time-to-completed-imaging, survival and function in patients with spinal epidural abscess: Description of a series of 34 patients, 2015–2018*. BMC Health Serv Res. 2020.

L Erbeltinger L, Martens B, Urman RD et al. *Opioid use following spine surgery: Strategies for a multimodal approach to pain management*. Curr Pain Headache Rep. 2026.

Multimodal analgesia in pain management after spine surgery. *J Spinal Surg*. 2019.