

Epidural Hematoma Following Epidural Catheter Placement in Patient on Anticoagulation Despite Adherence to Guidelines

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Introduction

- ❖ Epidural hematomas are a rare but serious complication of neuraxial anesthesia that can lead to permanent neurologic sequelae such as paraplegia and even death.
- ❖ They classically present as acute back pain progressing to focal neurologic deficits which can become permanent without timely intervention.
- ❖ Diagnosis is made with MRI, after which surgical intervention within 8-12 hours of symptom onset is required to minimize chances of permanent neurological complications.
- ❖ Although rare with recent studies estimating the overall incidence of epidural hematomas to be around 1:18000, several factors can place patients at increased risk including increased age, female sex, spinal pathology, and most importantly coagulopathy, whether physiologic or iatrogenic.
- ❖ Therefore, organizations such as ASRA have developed guidelines regarding neuraxial anesthesia in the setting of anticoagulant use.
- ❖ The most current ASRA recommendations at the time of this case were the 2018 (fourth edition) anticoagulation guidelines

Here we present a case of a patient who developed an epidural hematoma following epidural placement despite adhering to former ASRA guidelines.

Case Report

An 87 year old female with history of hypertension, hyperlipidemia, and atrial fibrillation presented to the hospital following a mechanical fall and was found to have **6th to 11th left-sided rib fractures** and was admitted to the ICU. **Acute pain consulted for uncontrolled rib fracture pain.**

Because of recent Eliquis dose, patient was ineligible for epidural and received a **serratus plane block**. Patient was started on a heparin infusion for AFib.

3 days later

Heparin infusion was held for 9 hours and a normal PTT of 24.7 was confirmed. **Epidural was placed at T6-T7**. Heparin infusion was restarted 2 hours after placement.

12 hours later

Patient reported **new onset lower extremity weakness**. Heparin drip was held, epidural catheter removed, neurosurgery consulted, and patient sent for MRI of lumbar and thoracic spine.

MRI showed **epidural hematoma** from T7 to T12 with cord compression.

Emergently taken to OR for **T8-T11 laminectomy** with neurosurgery.

Patient regained full strength in her lower extremities.

1 day later

Intubated for hypercapnic respiratory failure

5 days later

Patient decided to make herself **DNR/DNI** and to withdraw life-sustaining care. **She was extubated to BiPAP and passed away the next morning.**

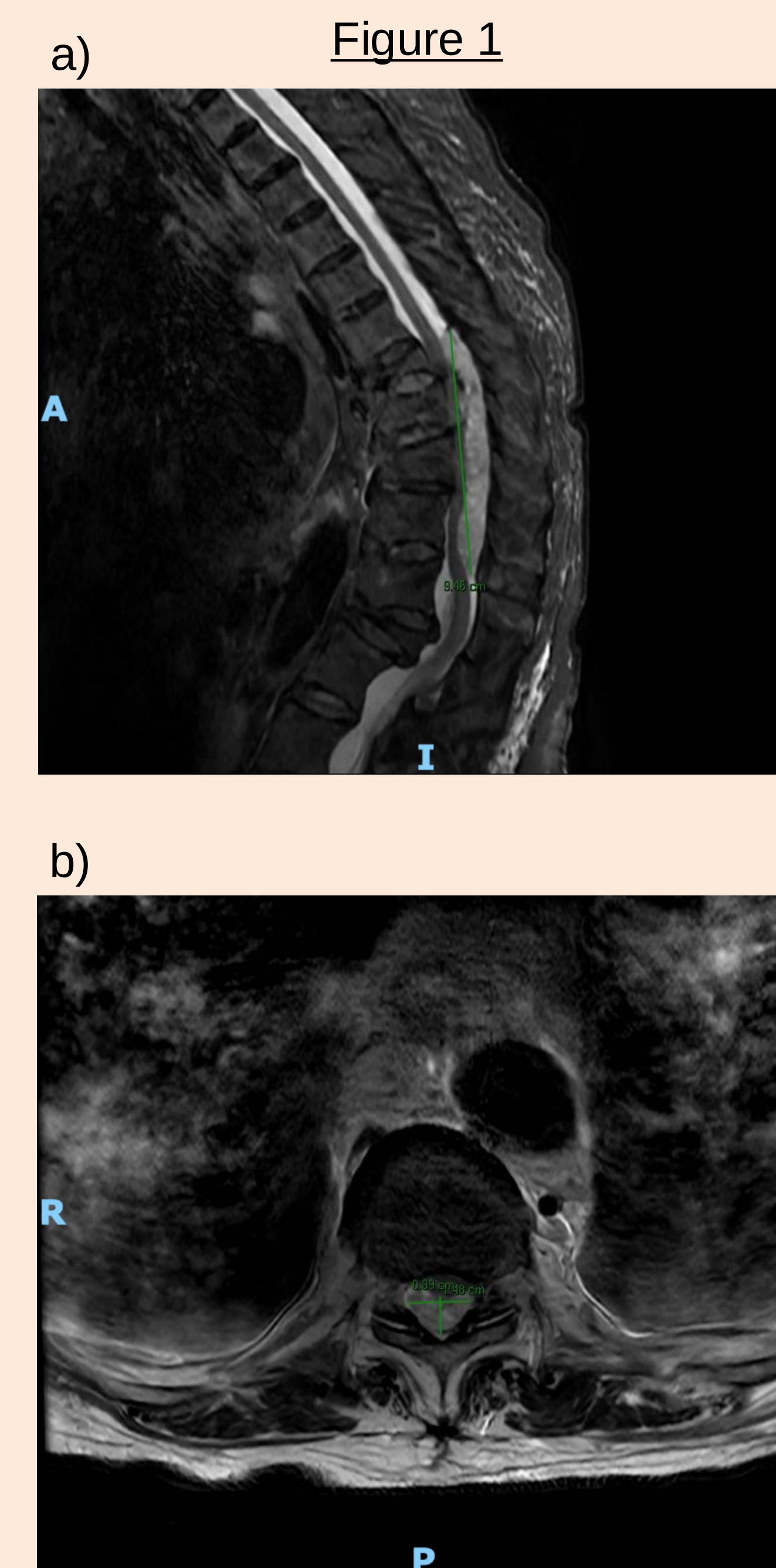


Figure 1: MRI thoracic spine showing epidural hematoma extending from T7-T12 superimposed on multilevel chronic compression fractures and degenerative changes with associated multilevel severe spinal canal stenosis/thecal sac narrowing
a) Sagittal view
b) Axial view

Discussion

- ✓ Previous ASRA guidelines recommended stopping IV heparin 4-6 hours prior to a neuraxial procedure and waiting 1 hour after placement to resume infusion. **Newly published 2025 (fifth edition) guidelines now recommend against maintaining neuraxial catheters in the setting of IV heparin infusion.**
- ✓ Notably, in addition to the patient's anticoagulation status, she also had additional known risk factors such as advanced age, female sex, and spinal stenosis.
- ✓ This case highlights the importance of weighing the risks and benefits of anticoagulation and neuraxial procedures.
- ✓ This case also highlights the importance of being highly vigilant after performing neuraxial procedures in high risk patients. Although this patient ultimately passed away, immediate recognition of her symptoms facilitated prompt neurosurgical intervention.

References

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