



Stanford
Anesthesiology,
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A Case of Epidural Hematoma After Thoracic Surgery Discovered During Evaluation for Regional Anesthesia

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Introduction

Incidence of epidural hematoma is rare. We report a case of an epidural hematoma in a patient undergoing video-assisted thoracic surgery (VATS) who required conversion to open thoracotomy, for whom an intraoperative consult for regional anesthesia was placed. Upon evaluating the patient for a postoperative epidural, signs and symptoms raised suspicion of neurological compromise consistent with spinal cord compression which was later confirmed to be an epidural hematoma.

Material and Methods

Patient provided informed consent for reproduction of their medical or surgical condition or treatment for research and education as part of their preoperative consent process. As this case report is devoid of patient identifiable information, it is exempt from IRB review requirements as per Stanford Health Care policy.

Tables - Neuro Exam

Table 1: Neurology Exam 11:13 AM, POD1

Muscle Group	Right	Left
Hip Flexion	5	0
Hip Extension	5	0
Knee Flexion	5	0
Knee Extension	5	0
Ankle Dorsiflexion	5	4+
Ankle Plantarflexion	5	4+

Table 2: Orthopedic Surgery Exam 12:28 AM POD 2

Muscle Group	Nerve Root	Right	Left
Hip Flexion	L2	0/5	0/5
Quads	L3	0/5	0/5
Tibialis Anterior	L4	0/5	0/5
Extensor Hallucis Longus	L5	0/5	0/5
Gastrocnemius–Soleus Complex	S1	0/5	0/5
Flexor Hallucis Longus	S2	0/5	0/5
Rectal Tone	S3/4	Not intact	Not intact

Case Report

A 40-year-old female with history of severe bronchiectasis was scheduled for left VATS lower lobectomy. Due to surgical challenges, the approach converted to open thoracotomy. Of note during the conversion, the left posterior 6th rib was shingled. The regional anesthesia service was consulted to place a post-operative thoracic epidural for pain control.

Evaluation for neuraxial placement was deferred until POD-1 to allow time for the patient to recover after general anesthesia, be fully assessed and provide consent.

The regional anesthesia team evaluated the patient on POD-1 when the patient reported thoracotomy pain and new onset weakness in her left lower extremity. A decision was made to obtain formal neurology evaluation and MRI before performing any regional anesthetic technique. Neurology evaluation showed significant left leg motor deficit.

MRI revealed an epidural hematoma at the left T4-5 neural foramen, with fluid extending superiorly and inferiorly from T1-T9, approximately 17 cm. The epidural hematoma extends from the left paraspinal space adjacent to the chest tube through the left T4-5 neural foramen, possibly reflecting injury to the left intercostal artery at this level.

Her motor deficit rapidly progressed to bilateral lower extremity 0/5 motor exam from L2-S4. Simultaneously, her sensory exam progressed to include saddle anesthesia and diminished sensation L3-S5, rectal tone not intact. Emergent T4-5 laminectomy was performed revealing dramatic lateral compression centered around the left T4-5 foramen.

The patient’s post-operative course was complicated by pulmonary infection and difficulty weaning from mechanical ventilation, necessitating tracheostomy placement, as well as ongoing paraplegia with sensory deficit to T4.

Discussion

Literature on epidural hematoma after thoracic surgery focuses almost exclusively on cases related to epidural analgesia. Less is known about the rate of epidural hematoma after thoracic surgery in the absence of neuraxial techniques. **Fortunately, the rates of epidural hematoma after epidural analgesia remain extremely low <0.1%,** and cases requiring surgical laminectomy are even rarer. Our case highlights how surgically-induced epidural hematomas may confound risk of complications from neuraxial analgesia/anesthesia post-operatively if both surgical and regional procedures are performed.

Figure 1: Sagittal MRI of epidural hematoma 09:53pm POD 1



Figure 2: Axial MRI of epidural hematoma 09:53pm POD 1



References

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