

# Epidural Abscess Formation following Cervical Spine Fracture: A Case Report

Sukhdeep Bains, DO; Tova Plaut, DO; Gurpreet Sarwan, DO; Neal Rosario, MD; Hameer Thatte, DO; Daniel Scura, DO; Adam Isaacson MD

Department of Physical Medicine and Rehabilitation  
Nassau University Medical Center, East Meadow, New York



## Setting

Inpatient Medical Unit

## Patient

85-year-old-male with a C3/C4 cervical spine fracture after a fall

## Case Description

The patient sustained a C3/C4 cervical spine fracture after a fall at home. No acute surgical intervention was indicated at that time and the patient was advised to wear a cervical collar for 12 weeks. The patient completed a two-week inpatient rehabilitation program and was discharged home. Three months later, a follow-up routine C-spine MRI revealed an epidural abscess at C2/C3. The patient subsequently underwent surgical debridement of the abscess, which was further complicated by laryngeal edema leading to intubation. The abscess was found to grow *Streptococcus viridans* and *Candida*. The patient was subsequently placed on antibiotics and eventually extubated.



Figure 1: MRI of the cervical spine demonstrating formation of an epidural abscess (red arrow)

## Assessment

He was evaluated by the PM&R consult team and found to be functionally impaired requiring moderate to maximal assistance for bed mobility, transfers and ambulation. Infectious disease was consulted and the patient was continued on a total of six weeks of antibiotic therapy for complete resolution of the epidural abscess.

## Discussion

An epidural abscess is a rare infection of the central nervous system that can occur within the skull or spinal column. The accumulation of purulent material can cause severe permanent neurological deficits, including motor weakness, radiculopathy, bowel and bladder incontinence, as well as death. Epidural abscesses are more commonly seen in the spinal column than the skull with *Staphylococcus aureus* being the most common causative bacterial pathogen. Streptococci and fungi species are considered to be rarer causes as seen in this patient. Trauma and older age are risk factors for abscess development. An MRI is the diagnostic imaging of choice. Treatment involves urgent surgical decompression and drainage of the abscess in addition to four to eight weeks of systemic antibiotic therapy based on culture sensitivity.

## Conclusion

Although epidural abscesses are rare, studies have shown an increasing incidence likely due to advanced imaging and increasing age of the general population. In this case, the patient developed an epidural abscess as a result of cervical trauma. The patient could have suffered potentially devastating neurological deficits had a repeat MRI not been obtained, further emphasizing the importance of placing epidural abscesses on the list of differential diagnoses.

## References:

1. Al-Hourani K, Al-Aref R, Mesfin A. Upper Cervical Epidural Abscess in Clinical Practice: Diagnosis and Management. *Global Spine J.* 2016;6(4):383-393. doi:10.1055/s-0035-1565260

