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Sunil Munakomi, Binod Bhattarai

ABSTRACT

Introduction: Cervical epidural abscess (CEA) is a rare entity with varied clinical presentations. This can lead to significant delay in the timely diagnosis.
Case Report: We report a rare case of sudden onset progressive tetra paresis in a 54-year-old male. Magnetic resonance imaging of cervical spine was suggestive of acute cervical spinal epidural abscess. Emergent surgical evacuation of the abscess resulted in gradual improvement of the neurological status in the patient.
Conclusion: Spinal epidural abscess may present with constellation of signs and symptoms. Timely diagnosis and intervention may prevent permanent deficits to the patients.

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Keywords: Epidural abscess, Tetraparesis, Spine

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INTRODUCTION

Cervical epidural abscess (CEA) is a rare entity with varied clinical presentations. This can lead to significant delay in the timely diagnosis and early management of this devastating condition [1]. It invariably leads to permanent neurologic deficits if early surgical treatment is not timely undertaken [2]. Therefore, this entity should be considered in every patient presenting with fever, localized back pain and showing progressive neurologic deficits such as quadriparesis, sphincter dysfunction, and a detectable sensory level [3].

Early diagnosis with improved imaging techniques, prompt surgical intervention, and effective antibiotics have led to a gradual trend towards improved mortality rates, but high mortality rates of 5–33% are still reported in some series [4–10].

CASE REPORT

A 54-year-old male from a remote village in Nepal presented to emergency department with a history of rapid progression of weakness of both his upper and lower limb (lower limbs more than the lower limbs) over last five days. There was a history of him being hit by a log of wood at the back of his neck 3 months back. There was no weakness at that point. Since that time, the patient had periodic low grade fever that used to settle after taking some antipyretics and over the counter antibiotics available in the village. His bladder and bowel habit was normal. There was no high grade fever with chills and rigor. There was no significant past medical or surgical illnesses. There was no history of any illicit drug abuse.

During examination, patient was conscious and well oriented to time, place and person. His higher mental function (HMF) test was normal. All cranial nerves were intact. His vital parameters were within normal range. Neck rigidity was absent. His power on upper and lower limbs were 2/5 and 1/5 respectively (British medical council grading). His upper and lower limb reflexes were

diminished with upper level at biceps. Sensory level was at T2 level .Single breath count (SBC) was 22.There was no ptosis. Plain X-ray cervical spine revealed collapse of C5 and C6 vertebras. MRI (magnetic resonance imaging) cervical spine T2 sequence showed evidence of signal changes within end plates of C5 and C6 (Figure 1) with loss of disc height with hypointense lesion in the anterior subarachnoid space behind C5 and C6 bodies intending the cord. There was significant contrast enhancement within the lesion (Figure 2). All these radiological findings were suggestive of an epidural abscess. Baseline investigations were normal except for raised ESR of 67mm/hr. Chest X-ray was normal. Monteux test was not significant. Sputum for Acid Fast Bacilli (AFB) was negative. Serology done for HIV (Human immunodeficiency virus) and HCV (Hepatitis C virus) were negative. So the diagnosis of progressive tetraparesis due to cervical epidural abscess was made. Patient party was thoroughly counseled regarding the disease condition and early need for operative evacuation of the abscess. Anterior cervical approach was taken, C5-6 median corpectomy, C5-6 discectomy and evacuation of the thick turbid pus was done from the epidural space. Iliac graft was placed for in-situ fusion. No implants were placed in the setting of infective bed. Post operatively patient was placed in hard cervical collar and strict bed rest for 6 weeks. He was started on IV antibiotics (ceftriaxone, metronidazole and amikacin) for 2 weeks followed by oral cefixime for added 4 weeks. He was started on limb physiotherapy. Histopathology revealed presence of collagenous tissue with infiltration with neutrophils and lymphocytes. There was no evidence of granulomatous lesion or malignancy. Pus culture was negative for any bacterial growth. AFB staining was negative. Repeat X-ray spine at 7 weeks revealed good fusion and proper alignment of the anterior and posterior spinal lines as well as the spinolaminar lines (Figure 3).The power improved to 5/5 in upper limbs and 4/5 in the lower limbs at 5 months, when patient followed up walking with support in the outpatient clinic. The patient was advised for regular physiotherapy and 6 monthly follow up.

DISCUSSION

Cervical epidural abscess (CEA) is a very rare neurological infectious with the incidence between 1 in 70,000 and 1 in 400,000 admissions at major academic teaching hospitals in USA [3]. Mostly it affects the age group of 30s to 70s [11].

The most common location of SEA was the lumbar epidural space [4, 10].

Staphylococcus is the most common causative organism [1]. The most common risk factor is diabetes mellitus, followed by trauma, intravenous drug abuse, and alcoholism among others [11]. Pathogens gain access to the epidural space via contiguous spread or hematogenous dissemination from a remote source. Postoperative epidural abscesses represent 16% of all epidural abscesses [12].

Though classical triad of the condition are fever, back pain and progressive neurological deficits [3, 13] this condition may present with constellations of clinical signs and symptoms [1] thereby creating delay in early diagnosis. In immune-compromised patients fever may not appear in spite of CEA [1, 3, 13, 14].

Earlier diagnoses have been recently achieved with the development of sophisticated imaging [15].

T2-weighted MRI enables a precise demonstration of the size and extent of an SEA [6]. After a review of 168 cases from six series (1973–1987), 38% of patients achieved complete recovery with surgical treatment and antibiotics, 19% of patients had residual weakness, 21% of patients remained paralyzed, and 12% died [6]. In 94 cases from more recent series from 1990–2002 [10, 11] the percentages, respectively, were 57%, 29%, 9%, and 5%, showing a decreasing trend.

Delay in the early recognition of SEA may lead to a poor outcome, and the appreciable neurological recovery seen in some patients reflects the prompt diagnosis and early treatment [16, 17].

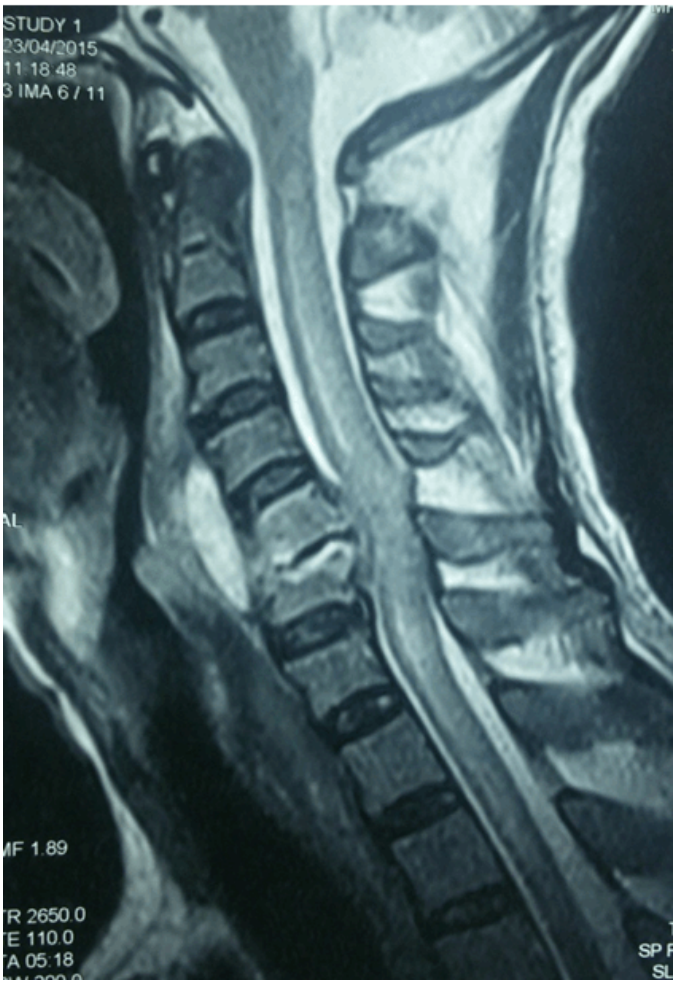

Figure 1: MRI cervical spine T2 sequence showing signal changes in C5 and C6 end plates, decrease in disc height and hypo-intense anterior epidural lesion indenting the cord.

Figure 2: Intense uptake of the contrast within the lesion suggesting of an epidural abscess.

Figure 3: X-ray spine in the follow-up showing good fusion of the graft, maintenance of the cervical lordosis and alignment of the cervical lines.

CONCLUSION

Spinal epidural abscess may present with constellation of signs and symptoms. This entity must be kept in all the patients presenting with fever, localized back ache, and progressive neurological deficits. Timely diagnosis and intervention may prevent permanent deficits to the patients.

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Author Contributions

Sunil Munakomi – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Binod Bhattarai – Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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