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Spontaneous Epidural Abcess in Cervicothoracic Junction: Case Report

Servikotorasik Bileşkede Spontan Epidural Abse: Olgu Sunumu

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ÖZET

Spontan spinal epidural apse (SEA) nadir görülen ancak potansiyel olarak ölümcül ve sarsıcı bir enfeksiyon hastalığıdır. Genellikle SEA için tedavi stratejisi antibiyotik ve cerrahi dekompresyondur. Bu yazıda servikotorasik bölge yerleşimli bir SEA sunulmuş ve nörolojik fonksiyonel iyileşme için doğru tanı ve cerrahi zamanlamanın önemi vurgulanmıştır. Hastanemiz acil servisine kol ve bacaklarda ilerleyici güçsüzlük şikayeti ile başvuran 65 yaşında bir kadın hasta sunuldu. Hasta acil başvuruda kuadriplejikti ve hemen sonra spontan solunum durmuştu. Kraniyospinal aks manyetik rezonans görüntülemede C4-Th2 seviyesinde omuriliğe belirgin bası yapan ekstradural lezyon saptandı. Hasta sol C5-Th1 hemilaminektomi ile ameliyat edildi ve epidural boşluktan püy boşaltıldı. Abse kültüründe staphylococcus aureus üredi. Uygun antibiyoterapi verildi. Ameliyat sonrası spontan solunumu başlayan hastanın kuadriplejisinde kısmı düzelme izlendi ve ameliyat sonrası erken dönemde 4/5 üst ve 2/5 alt ekstremite kuadriparezisi sağlandı. Spinal epidural abse nadir görülen bir hastalıktır. SEA'nın doğru tanısındaki gecikmeler geri dönüşümsüz nörolojik defisitlere neden olabilir ve potansiyel olarak ölümcül olabilir. SEA hastalarında şüphe ve ayrıntılı öykü, fizik ve nörolojik muayene ile dikkatli klinik değerlendirme esastır.

Anahtar Kelimeler: Spinal Epidural Abse, Spinal Enfeksiyon, Cerrahi Dekompresyon

ABSTRACT

Spontaneous spinal epidural abscess (SEA) is an uncommon but potentially fatal and shattering infectious disease. Generally treatment strategy for SEA is antibiotics and surgical decompression. In this report we present a SEA which was located at cervicothoracic region and highlight the importance of correct diagnosis and surgical timing for neurological functional recovery. We report a 65-year-old woman who presented to the emergency department of our hospital with progressive weakness in the arms and legs. The patient's spontaneous breathing had stopped immediately after the emergency admission and she was comatose with quadriplegia. Craniospinal axis magnetic resonance imaging revealed an extradural lesion at the C4-Th2 level with significant compression of the spinal cord. The patient was operated with left C5-Th1 hemilaminectomy and epidural abscess was drained. Staphylococccus aeureus was grown in the abscess culture. Appropriate antibiotherapy was given. Spontaneous breathing started after the operation and quadriplegia partially recorved and 4/5 upper and 2/5 lower extremity quadriparesis was achieved in the early postoperative period. Spinal epidural abscess is a rare disease. Delays in correct diagnosis of SEA might be cause irreversible neurological deficits and potentially fatal. Suspicion and careful clinical evaluation with detailed history and physical and neurological examination is essential in SEA patients.

Key words: Spinal Epidural Abscess, Spinal Infections, Surgical Decompression

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INTRODUCTION

Spinal epidural abscess (SEA) is a rarely seen clinical entity with 0.2-2/10000 incidence per/ year (1). Spinal epidural abscess generally occurs with hematogenous spreading or directly invasion from adjacent structures. Generally a predisposing factor like previous surgery, epidural anesthesia or osteomyelitis is to be found (2,3). Intravenous drug usage, corticosteroids, alcoholism, diabetes mellitus and immune deficiency are risk factors for SEA (2). Spinal epidural abscess sometime cause dangerous life-threatening conditions.

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Progressive neurological deficits may result from direct spinal cord compression, vascular injury, or radicular compression (4).

CASE REPORT

A 65-year-old woman with a known history of diabetes mellitus and hypertension presented to the emergency department of our hospital with the complaint of progressive weakness in the arms and legs. The patient's spontaneous breathing stopped immediately after the emergency admission. The patient was intubated. The patient has no spontaneous respiration and was breathing with a mechanical ventilator. The patient had no motor response to painful stimuli and was evaluated as quadriplegic. Bilateral babinski reflex was positive. The patient had no nuchal rigidity and Kerning and Brudzenski findings were absent. Complete blood count revealed 14.000/mm3 leucocytes. CRP was 34 mg/dl and erithrocyte sedimentation rate was 72 mm/hour. The patient was intubated and taken for imaging under emergency conditions. Craniocervical magnetic resonance imaging (MRI) revealed a lesion with spinal cord compression at the C4-Th2 level. The lesion was epidural localised (Figure 1).

The patient was operated with left C5-Th1 haemilaminectomy via posterior approach and epidural abscess was drained. Staphylococccus aeureus was grown in the abscess culture. Appropriate antibiotherapy was given. The postoperative period was uneventful. Spontaneous breathing of the patient was started after the operation. The patient's quadriplegia partially recorved and 4/5 upper and 2/5 lower extremity quadriparesis was achieved in the early postoperative period. After the patient was extubated, it was learnt that there was no complaint of neck pain in the preoperative period. No abscess was observed in the control MRI of the patient. (Figure 2).

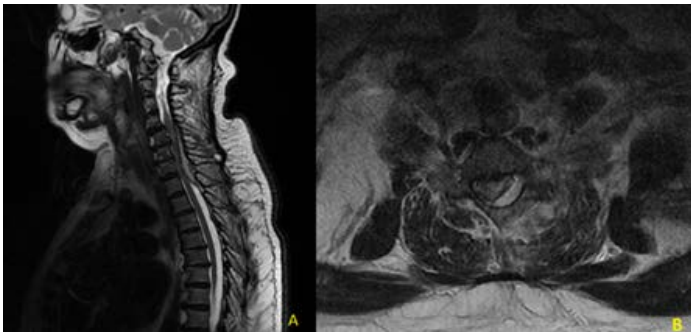

Figure 1 A. T2 weighted sagittal MRI shows spinal epidural abscess at C4-T2 level.
Figure 1 B. T2 weighted axial MRI shows spinal epidural abscess at C6 level.

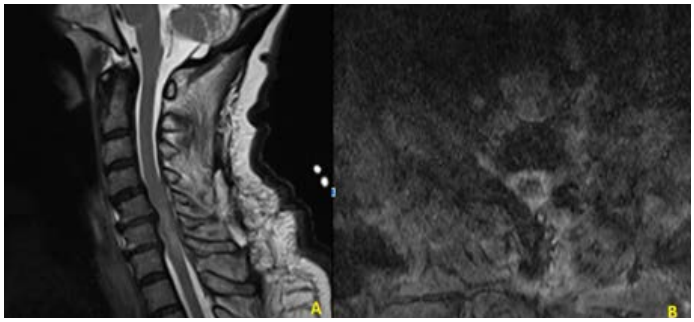

Figure 2. Postoperative sagittal and axial T2 weighted images shows central hyperintense signal at C6-7 level. There is no residual abscess can be seen.

DISCUSSION

Spinal epidural abscess is first reported by Morgagni in 1796 (5) . Huesner described the clinical findings, treatment and outcome of SEA in 1948 (6). The SEA following spinal surgery is a well known complication. Most of the patients with SEA is associated with a disease such as diabetes mellitus , AIDS, chronic renal failure, cancer, cirrhosis or condition that suppress the immune system (e.g. alcoholism, I.V. drug abuse, trauma). Diabetes mellitus (DM) is the most common disease as a factor in 18-54% of cases. I.V. drug abuse 7-40% and remote infections 7-44% are the other common factors that associated with spinal epidural abscess (7). Only 10-20% of patients have no predisposing factor. We observed our patient had DM. The neurological deficit might develop in hours or even in months due to compressive effect of epidural abscess or ischemia. The exact mechanism of how an epidural abscess causes spinal cord damage is still unclear. In some reports, the cause of functional deficits was reported to be toxic effects due to the inflammatory process (8)

Radiological studies are very important in diagnosis of SEA. Unfortunately, plain radiographs and CT have limited value. This condition is easily demonstrated with a MRI study. There are two basic patterns of enhancement of SEA described. The one with no liquid collection is only granulomatous tissues are observed as a solid mass with homogenous or heterogeneous contrast enhancement suggestive of phlegmonous stage. In the other form, there is a mass with circumferential contrast enhancement within liquid infection (9). The treatment mostly depends on early surgical decompression and prolonged antibiotic therapy. On the other hand, conservative therapy might be applied as the sole management in carefully selected patients. Savage et al reported 83% good or excellent outcome with only medical treatment. However, it was concluded that 19% of the medically treated patients showed a severe neurological

deterioration while under appropriate antibiotic therapy.

In the past, the treatment modality for SEA was only antibiotherapy, but recently, a combination of surgical treatment and antibiotherapy is preferred. Surgical treatment is recommended especially in cases with spinal instability, pathologic fractures and progressive neurologic symptoms. In the literature, surgical treatment ranges from interlaminar approach to spinal instrumentation. While some authors recommend laminectomy/hemilaminectomy (10), Hadjipavlou et al. reported that patients who underwent anterior decompression and posterior stabilization had better results than patients who underwent only laminectomy (11). In our case, neurologic deficit and spontaneous respiratory arrest led to urgent surgical treatment and surgical treatment and antibiotherapy were performed together.

The advances in radiology and treatment strategies significantly decreased the mortality of epidural abscess. Cervical SEA has significantly higher mortality rate 38%, compared to other spinal regions.

CONCLUSION

Spontaneous cervicothoracic epidural abscess is a uncommon problem that is associated with a significant mortality and morbidity. The key to a favourable outcome is early diagnosis and immediate surgical decompression.

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