



Epidural abscess; a case report

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Received 15 Nov 2021

Accepted 23 May 2022

Published online 20 July 2022

Keywords: Epidural abscess,
Spinal cord, Infectious disease

Abstract

Spinal epidural abscess is an infectious and debilitating disease of the spine requiring clinical diagnosis and early treatment including medical and surgical. Delay in proper action leads to irreversible neurological complications. In this study, a case with spinal epidural abscess was introduced that trying to help her with minimal spinal lesions and instability by surgery. In this study, it was shown that by making the right and quick decision to do surgery, it can prevent complications and achieve maximum improvement and satisfaction.

Citation: Zamani Alavijeh M, Heydari F, Abootalebi A. Epidural abscess; a case report. Immunopathol Persa. 2022;x(x):e29315. DOI:10.34172/ipp.2022.29315.



Introduction

Spinal epidural abscess is a rare infectious disease of the spine with the incidence of 0.2-1.2 cases per 10000 hospital admissions per year (1,2). Its maximum incidence occurs in the 6th and 7th decades of life, and its contributing factors are diabetes, intravenous drug abuse, chronic renal failure, and Immunodeficiency (3,4).

The most common cause of this disease is *Staphylococcus aureus* (4). This type of abscess can be seen in the both forms of acute and chronic. In the first type, infection in the epidural space is formed less than two weeks. In the second type, it takes more than two weeks of the disease onset, which is associated with the formation of granulation tissue. The infection location depends on the basic and primary factors, which can be at the anterior or posterior epidural space. If the infection site was expanded and spine was extensively involved, it should be removed the pressure in a large area and drain the infection, that may be associated with a high possibility of spinal instability. Therefore, after the major surgery, the spine fixation using assistive devices and bone grafting is needed (5,6).

Here we report a case of acute epidural abscess at the level of T10-T11 which led to development of clinical symptoms in the patient.

Case Presentation

The patient was a 57-year-old woman who has been suffering from lumbar sudden pain occurred in both sides for the past 10 days.

Key point

This study introduced a case with spinal epidural abscess that tried to be treated by adopting a surgical method with minimal spinal damage and instability. The results of the present study showed that surgery for this patient could prevent complications and achieve maximum improvement and satisfaction.

The pain was on and off and progressive. She was diagnosed with kidney stones in the previous referring. She had a sensory disturbance initiating from the distal lower limb, following the ascending progressive lower extremity weakness from two hours before and urinary retention from about four hours before. At the admission time she had a sensory level from the navel down with saddle anesthesia and body temperature of 38.5°C.

She had a history of background diseases including high blood pressure, hyperlipidemia and ischemic heart disease. She had also a car accident two months ago and used aspirin, Plavix, and warfarin.

Cranial nerve examination was normal. The patient had sphincter disorder and urinary retention and the force of the lower extremity on the both sides was 0 out of 5.

The results of blood test were erythrocyte sedimentation rate (ESR)=40 mm/h, plasma hemoglobin=10.3 g/dL, MCV=63.9 fL, creatine phosphokinase (CPK)=481 IU/L, PLT=107000/μL and C-reactive protein (CRP)=38 mg/L.

Magnetic resonance imaging (MRI) results showed epidural hematoma at the T10-T11

level with pressure on the cord. She was transferred to operating room and underwent laminectomy and cord decompression with diagnosis of epidural abscess. After surgery, antibiotic treatment continued. In the early days of follow-up, the sensory level ride out, the force of the lower extremity on the both sides were 2 out of 5 and the sphincter disorder was resolving. There was no significant and rapid improvement but during the recovery period and two-month of physiotherapy, the force of the lower extremity gradually reached 4.5 and the patient was able to walk independently (Figure 1).

Discussion

Spinal epidural abscess is a potentially dangerous disease that occurs due to the accumulation of infection in the epidural space. It is associated with serious complications and death in the case of not immediately diagnosis and necessary action. The onset of clinical symptoms and subsequent diagnosis of the disease can easily be ignored and not included in the diagnosis factors; unless it is highly suspicious usually (3,6). A study has reported four symptoms of pain, radiculopathy, weakness, and paralysis at the onset of clinical symptoms (7). Among the various radiological diagnostic methods spinal MRI is selective one unless it is prohibited. After clinical suspicion and initial diagnosis of infection, appropriate antibiotics should be started and subsequently a decision made about surgery. This decision was based on neurological examination, lesion extension, and MRI findings. Surgery is performed to remove infection and necrotic material, relieve pressure on nerve elements, correct deformities and, if necessary, spinal fixation. The type of surgery depends on the infection site and can be done anteriorly or posteriorly. The extent of surgery depends on the involvement level. In the extended cases, spinal reconstruction is required after removal of infection. The selective surgical method in the case of widespread infection is laminectomy with initiation of antibiotics (8,9).

Conclusion

In the surgical method of spinal epidural abscess treatment despite the common recommendations for laminectomy,



Figure 1. MRI image of the patient after surgery.

it is possible to minimize the surgery duration by limited surgical methods and achieve the desired results doing the complete removal of infection.

Authors' contribution

MZA, FH, and AA revisited the manuscript and critically evaluated the intellectual contents. All authors participated in preparing the final draft of the manuscript, revised the manuscript and critically evaluated the intellectual contents. All authors have read and approved the content of the manuscript and confirmed the accuracy or integrity of any part of the work.

Conflicts of interest

The authors declare that they have no competing interests.

Ethical issues

This case report was conducted in accordance with the World Medical Association Declaration of Helsinki. Accordingly, ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors. The patient gave the consent to publish as a case report.

Funding/Support

None.

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