

Acute Prevertebral Abscess as Unusual Cause of Low Back Pain: Case Report

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SUMMARY

Introduction: Diseases of prevertebral spaces are uncommon but can result in significant morbidity.

Case report: This is a case report of acute prevertebral abscess in a 40-year-old man. After being transferred to our hospital the patient was initially diagnosed with lower back pain and with high-grade fever. Magnetic resonance imaging (MRI) suggested prevertebral abscess from Th11-L1. Blood test indicated a bacterial inflammation. Antibiotics were administered. The patient's condition consequently improved. He was discharged with normal neurological status and without any symptoms with a complete regression of the abscess on check-up MRI.

Discussion: Magnetic resonance imaging remains the gold standard for the radiological demonstration of spine abscess. Antibiotic therapy is a pillar of treatment for spine abscess and should be a part of the treatment in all cases.

Conclusion: In conclusion, our aim is to stress the importance of considering a prevertebral abscess in the differential diagnosis in patient with low back pain.

Keywords: Low Back Pain, Antibiotics, Prevertebral Abscess, Spine

INTRODUCTION

Prevertebral abscess is an uncommon deep spine space infection and occupies the prevertebral space between the vertebrae bodies and prevertebral fascia. It may affect any part of the, from the base of the skull to the coccyx. When it does occur, it can be life threatening. The pus collection causes pressure on the spinal cord. The infection is usually due to bacteria. Osteomyelitis, back injuries or trauma,

boils on the skin, complication of lumbar puncture or back surgery, spread of any infection through the bloodstream from another part of the body (bacteremia), increase risk for a spinal abscess [1,2].

The diagnosis of a prevertebral space infection may be difficult to make clinically because most of the patients complain of back or neck pain with fever, and only one-thirds

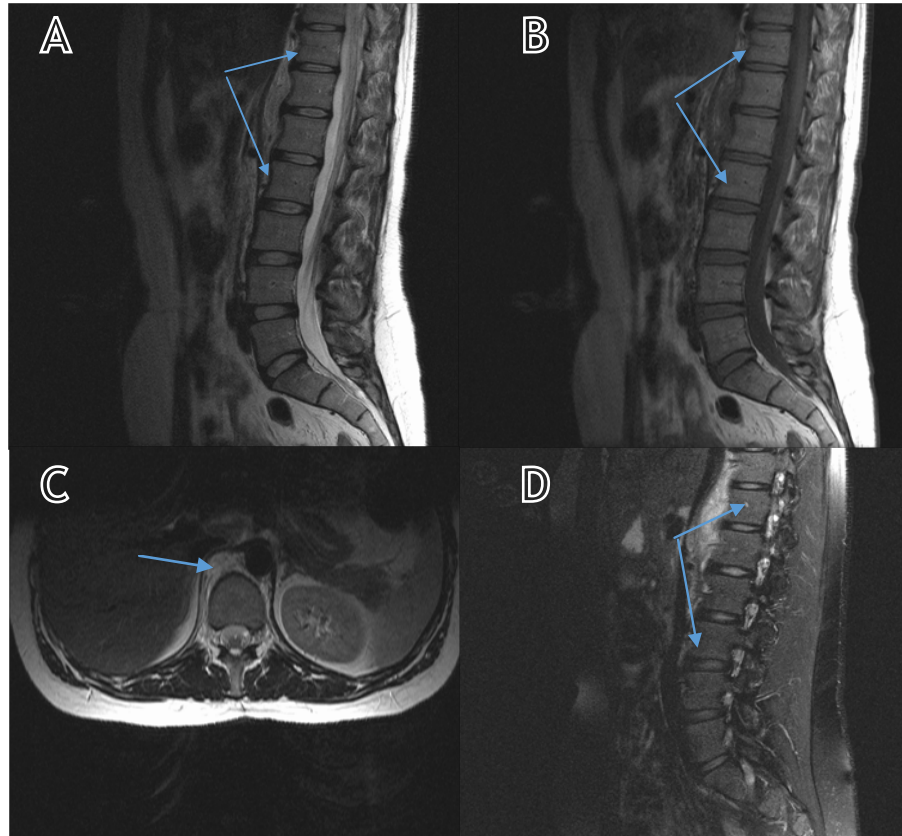
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Figure 1. Lesion of high signal intensity in the T2 measured image (sagittal section- image A, axial section image C), lower in the T1 measured image (sagittal section - image B), is intensely imbibing postcontrast (sagittal section - image D). It measures 9 x 1.6 x 2.5 cm in diameter, and primarily according to radiomorphological characteristics corresponds to the inflammatory process. In postcontrast sections, the lesion is almost homogeneously imbibed (D).



have neurologic deficits ranging from nerve root pain to paralysis [2].

Differential diagnosis includes various diseases such as spondylodiscitis, spinal epidural abscess, psoas abscess, pyelonephritis/ perirenal abscess, disc prolapse etc.

Magnetic resonance imaging is helpful for differentiating a prevertebral space infection from other deep spine abscess [3,4,5].

For this type of study Ethical Board approval is not required. Informed consent: Informed consent and permission to publish

his case report were obtained from the patient who was included in the manuscript.

CASE REPORT

We presented a 40-year-old male who was first admitted to our department and presented with high-grade fever, low back pain, lasting for three days. He did not complain of numbness or weakness in his lower extremities. So far he has been healthy. He did not use any chronic medication. A few months earlier he had a streptococcal sore throat that he got from a kindergarten-age child, which he treated with antibiotics. On examination he was febrile with a temperature of 38.3°C. Neurological examination was normal. Blood test showed neutrophilic leukocytosis (WCC 11.3×10^6 /microlitre, neutrophils 82%) and elevated inflammatory markers (CRP 38 mg/dl; fibrinogen 4.1 mg/dl and ESR 40 mm/1st hour,) suggestive of a bacterial inflammation. Three sets of blood cultures were sterile after incubation. Abdominal ultrasound was within normal limits, and transthoracic two-dimensional echocardiogram was also normal. A purified protein derivative (PPD) skin test was negative.

Figure 2. There is no visible previously present prevertebral soft tissue substrate at the level of the lower thoracic part and the upper lumbar spine.



Contrast-enhanced Magnetic resonance imaging of Th10-S2 region was performed, which revealed an extensive prevertebral abscess extending from Th11-L1 (Figure 1. A, B, C, D). The patient refused surgical drainage, but he responded well to 6 weeks of broad spectrum antibiotics. The patient received 14 days intravenous antibiotic therapy with ertapenem in dose of 1 g.I.V. (INVANZ/MSD) and teicoplanin (Targocid/ Sanofi Aventis) in dose of 400 mg bid, followed by an additional oral antibiotic regimen with clindamycin (Dalacin/Pfizer) 300 mg four times per day, and Rimactane (Rimactan /Sandoz) 300 mg bid.

There is a complete regression of the abscess on check-up MRI with regression of lower back pain (Figure 2.)

DISCUSSION

As prevertebral abscess is one of the uncommon deep spine space infection it can be overlooked because of connections with surrounding spaces, and due to nonspecific symptoms such as lower back pain [1]. Patients with spinal prevertebral abscess may be normothermic and have normal WBC counts. Particularly, prevertebral infectious conditions, can be associated with significant delays in the precise localization of the infection and subsequent postponement of adequate treatment. Untreated prevertebral abscess may lead to spinal epidural accumulations that cause cord compression with neurological deficits [2]. Risk factors for prevertebral abscess include also an immunosuppressed state (i.e., diabetes mellitus, alcoholism, HIV infection). Diabetes mellitus is the most common risk factor associated with spinal abscess [3].

The most commonly identified bacterial pathogens are *Staphylococcus aureus* in study by Widdrington et al. (38%), coagulase negative Staphylococci (12%) and *Escherichia coli* (12%), but we must not ignore other less common causes such as *Mycobacterium tuberculosis*, Streptococci, or *Anaerobes* [4,5,6]. Diagnosis of spinal abscess based on clinical tests, neurological examination, laboratory test and radiological features can be difficult. Prevertebral abscess has an puzzling tale, with both the time lapse between the onset of symptoms and hospitalisation and progression to a severe form being highly individual and unpredictable.

Diabetes mellitus, neurological deficit at presentation, a longer duration of symptoms and radiological evidence of spinal cord or cauda equina compression were independent factors associated with an unfavourable outcome [4]. The solution of the problem lies in early diagnosis.

Prevertebral abscess is a difficult diagnosis due to the extensive differential diagnosis, and considering its rarity compared to much more common causes of low back pain, such as disc herniation. Diagnosing and managing prevertebral abscess is greatly aided by the advent of modern radiological techniques, including magnetic resonance imaging [5,6,7].

A delay in the diagnosis of (defined as multiple visits before the definite diagnosis and treatment) can result in increased neurologic deficit, such as paraplegia or cauda equina syndrome.

Conservative treatment with antibiotics is recommended according to the guidelines. Most authorities recommend 6 weeks of therapy. This approach is in accordance with that reported elsewhere and international consensus guidelines suggesting that a minimum of 6 weeks of antibiotic therapy is required to treat spinal abscess [8,9,10].

CONCLUSION

In summary, our aim is to stress the importance of considering a prevertebral abscess in the differential diagnosis in patient with low back pain.

It should be also taken into consideration in differential diagnosis in patients with low back pain and usually with fever as well as increased values of CRP and ESR in young patient without known risk factors.

CONFLICT OF INTEREST

All authors declare no conflict of interest.

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Akutni prevertebralni apsces kao neobičan uzrok bolova u donjem delu leđa: prikaz slučaja

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KRATAK SADRŽAJ

Uvod: Bolesti prevertebralnog prostora su neuobičajene i retke, ali mogu dovesti do značajnog morbiditeta.

Prikaz slučaja: Prikazali smo slučaj akutnog prevertebralnog apscesa kod 40. godišnjeg pacijenta. Nakon što je pacijent zaprimljen u našu bolnicu, žalio se na bol u donjem delu leđa i bio je visoko febrilan. Pregled magnetnom rezonancom (MR) je sugerisao prevertebralni apsces od Th11-L1. Laboratorijska analiza krvi upućivala je na bakterijsku infekciju. Na primenjenu intravensku terapiju antibioticima stanje pacijenta se popravilo. Urednog neurološkog statusa je otpušten i bez tegoba i sa kompletnom regresijom apscesa na kontrolnom MR-u.

Diskusija: Magnetna rezonanca (MRI) ostaje zlatni standard za radiološki prikaz spinalnog apscesa. Antibiotička terapija je nezaobilazna terapija u lečenju spinalnog apscesa i trebala bi biti dio lečenja u svim slučajevima.

Zaključak: Prikazali smo slučaj o važnosti razmatranja prevertebralnog apscesa u diferencijalnoj dijagnozi bolesnika s bolovima u donjem delu leđa.

Ključne reči: bol u donjem delu leđa, antibiotici, prevertebralni apsces, kičma

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