Spinal epidural abscess: a rare complication of olecranon bursitis
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Abstract

Spinal epidural abscess is a rare but potentially fatal condition if left untreated. We report the case of a 67-year old man who presented to the Accident and Emergency department complaining of acute onset of inter-scapular back pain, left leg weakness and loss of sensation in the left foot. On examination he was found to be pyrexial with long tract signs in the lower leg. In addition he had a left sided olecranon bursitis of three weeks duration. Blood tests revealed raised inflammatory markers and a staphylococcal bacteremia. Magnetic resonance imaging (MRI) confirmed the diagnosis of spinal epidural abscess and he subsequently underwent a three level laminectomy with good resolution of his back pain and neurological symptoms. He has made a complete recovery with a prolonged course of intravenous antibiotics.

Case report

We report the case of a previously fit and well 67-year old man who presented to the Accident and Emergency department complaining of an acute onset of severe lower neck and upper back pain which worsened over a four day period. The pain was sharp in nature without any radiation. He complained of associated weakness in both hands and decreased sensation in the left foot. Sphincter function was normal and he reported no other abnormal neurology. He also had a four week history of pain and swelling in his left elbow. This swelling had recently discharged pus. He was somewhat lethargic but was otherwise systemically well.

On examination, he was pyrexial (38 degrees centigrade) but hemodynamically stable. He had tenderness overlying his upper thoracic spine but no erythema or warmth. Neurological examination revealed long tract signs in the left leg with weakness of extensor hallucis longus (4/5), decreased sensation in L4, L5 and S1 dermatomes and an absent left ankle jerk. He had reduced grip strength bilaterally (4/5) and examination of the left elbow demonstrated a discharging olecranon bursitis.

Routine blood tests revealed a raised white cell count (17.4×10^9/L) and C reactive protein (365 mg/L). After aspiration of the bursitis and blood cultures, the patient was started on empiric antibiotic treatment for an infected olecranon bursitis. The bursitis aspirate and blood cultures grew staphylococcus aureus, sensitive to flucloxacillin.

Immediately after admission the patient underwent an MRI scan (see Figures 1 and 2) for further evaluation of his back pain. This demonstrated a left posterior epidural collection from C6 to T5 with narrowing of the central canal and cord compression. This was most marked at T3 where the collection had a depth of 9 mm. The cranial end of the collection lay posteriorly to the thecal sac and reached the right side of the central canal. The epidural collection partially extended through the C7/T1/2 neural exit foramina bilaterally. There was an abnormal signal of the right paravertebral muscles closely adjacent to laminae of the mid and lower cervical spine and there was a small collection on the lateral aspect of the right C6/7 facet joint. There were no further soft tissue collections and no abnormal signal in the adjacent vertebrae.

It is most likely that this patient developed a staphylococcal bacteremia secondary to the infected olecranon bursitis with subsequent seeding of the infection in the C6-7 facet joint and consequently an epidural abscess formation.

He underwent a three level laminectomy with good resolution of his back pain. Subsequently microbiology samples grew staphylococcus aureus and he completed a six-week course of intravenous antibiotics via a long line.

All long tract signs resolved without long term sequelae.

Figure 1. The axial T2 image (TE= 108, TR= 5820) demonstrates a high signal epidural collection which effaces the spinal cord anterior laterally.
Discussion

Spinal epidural abscess is a rare but potentially fatal condition if left untreated. It has an estimated incidence rate of 0.2-2.8 cases per 100,000 per year and the most common causative agent is staphylococcus aureus. Risk factors for its development include immunocompromised states (e.g. diabetes mellitus, alcohol abuse, intravenous drug use, cancer and AIDS) and spinal procedures (epidural anesthesia and spinal surgery). Most cases arise via hematogenous seeding of the epidural space from a distant source of infection or contiguous spread from direct injury, instrumentation, adjacent discitis or vertebral osteomyelitis.

Making the diagnosis is often challenging: clinical presentation may be quite variable with the classic triad of fever, back pain and neurological deficit often incomplete in a significant number of patients. However if one suspects the diagnosis, urgent radiological investigation (MRI) should be arranged and surgical opinion sought to avoid irreversible neurological damage.

Surgical decompression in combination with appropriate antibiotics remains the mainstay of treatment. A more conservative approach, however, may be taken in poor surgical candidates or in those with minimal neurological deficit. In these cases, serial MRI scans and clinical evaluation are essential so that one can follow the progression of the disease.

There have been few studies to assist in predicting prognosis but the duration of spinal cord dysfunction and the degree of cord impingement at the time of diagnosis are thought to be major factors.

To the best of our knowledge, this case is the first in the literature of a spinal epidural abscess that is a complication of an infected olecranon bursitis.

References

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Figure 2. The sagittal T2 image (TE= 99, TR = 3500) demonstrates a high signal lentiform epidural collection situated posterior to the spinal cord.