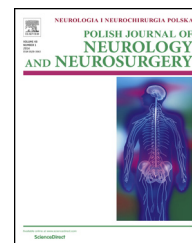


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Case report

Subdural empyema following lumbar facet joint injection: An exceedingly rare complication

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ABSTRACT

Chronic low back pain is extremely common with a life time prevalence estimated at greater than 70% [1]. Facet joint arthrosis is thought to be the causative aetiological substrate in approximately 25% of chronic low back pain cases [2].

Facet joint injection is a routine intervention in the armamentarium for both the diagnostic and therapeutic management of chronic low back pain. In fact, a study by Carrino et al. reported in excess of 94,000 facet joint injection procedures were carried out in the US in 1999 [3].

Although generally considered safe, the procedure is not entirely without risk. Complications including bleeding, infection, exacerbation of pain, dural puncture headache, and pneumothorax have been described.

We report a rare case of a 47-year-old female patient who developed a left L4/5 facet septic arthrosis with an associated subdural empyema and meningitis following facet joint injection. This case is unique, as to the best of our knowledge no other case of subdural empyema following facet joint injection has been reported in the literature.

Furthermore this case serves to highlight the potential serious adverse sequelae of a routine and apparently innocuous intervention. The need for medical practitioners to be alert to and respond rapidly to the infective complications of facet joint injection cannot be understated.

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1. Case report

All appropriate and required ethical and institutional board approval was obtained. Informed consent was obtained from the patient.

1.1. History

A 47-year-old lady was admitted to her local hospital with back pain, acute onset left-sided sciatica and left lower limb weakness, 2-weeks following a lumbar left L4/5 facet joint injection with local anaesthetic and steroid. Further history

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demonstrated that immediately following her facet joint injection, she had developed some low-pressure headaches worse on sitting up which had eventually settled.

Clinically these features most likely suggested a dural puncture and CSF leak following the facet joint injection. This symptomatology was subsequently replaced over the subsequent 2 weeks with features of meningism including neck stiffness and photophobia. This patient had no previous significant medical history. She had no medical conditions such as diabetes mellitus which predisposed her to infection.

1.2. Examination

Clinical examination was essentially unremarkable with except of a diffuse weakness affecting her left lower limb myotomes (MRC grading 4–/5). There was no evidence of anal or urethral sphincter (bowel/bladder) dysfunction.

1.3. Radiology

MRI of her spine demonstrated a subdural abscess collection extending from the left L4/5 facet joint through the paraspinal musculature and into the epidural and subdural space (Figs. 1–3). Cranio-caudal extension was apparent superiorly to the level of the L2/3 disc space and inferiorly to the level of the L5/S1 disc space (Fig. 2). There was also evidence of some collection tracking along the left S1 nerve root on the left side (Fig. 3). The thecal sac was pushed antero-laterally by the collection with displacement of the nerve roots of the cauda equine (Fig. 3). Diagnostically, this was a case of a subdural abscess and meningitis following a facet joint injection.

1.4. Chemistry and microbiology

Her inflammatory markers on admission demonstrated a CRP of 240 with a white cell count of 15.5. Blood cultures demonstrated a staphylococcal aureus species. A lumbar puncture was performed which demonstrated purulent and turbid cerebrospinal fluid with gram positive cocci. CT-guided aspiration of the left multi-loculated paraspinal collection was

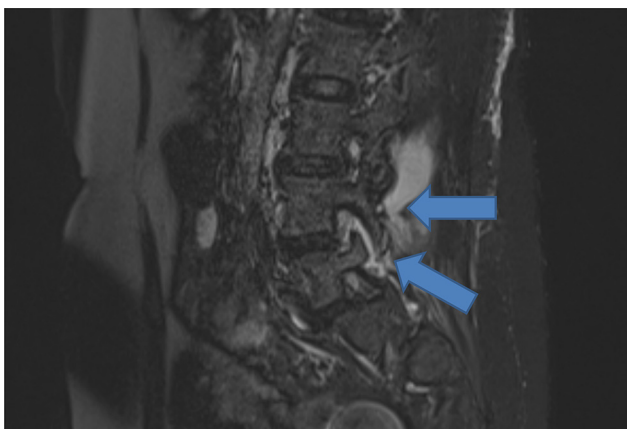


Fig. 1 – Sagittal T2 (STIR) image of lumbosacral spine. Abnormal high signal intensity demonstrated in left L4/5 facet and paraspinal muscles.

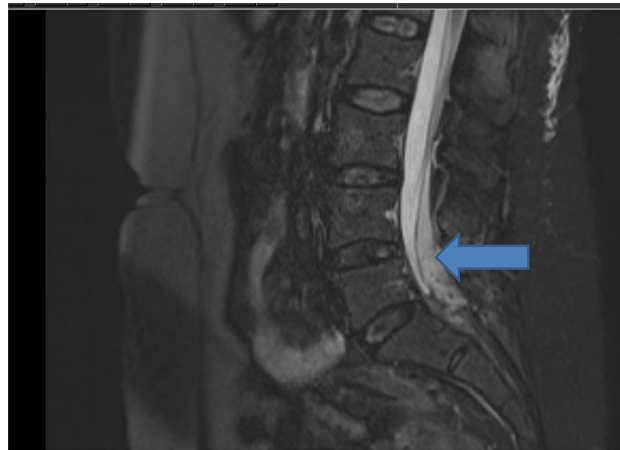


Fig. 2 – Sagittal T2 (STIR) image of lumbosacral spine. Subdural collection demonstrated extending from inferior margin of L3 to S1.

performed within 24 h of admission. Frank pus was drained. All samples grew staphylococcal aureus species.

1.5. Therapy

The patient was initially started on treatment with empirical antibiotics with intravenous meropenem and vancomycin, which was subsequently converted to ciprofloxacin and rifampicin following sensitivities. The total duration of antibiotic therapy was for a period of 6-weeks. The patient rapidly improved following a few days of antibiotics with resolution of the left L5 radicular pain and mild left lower limb weakness.

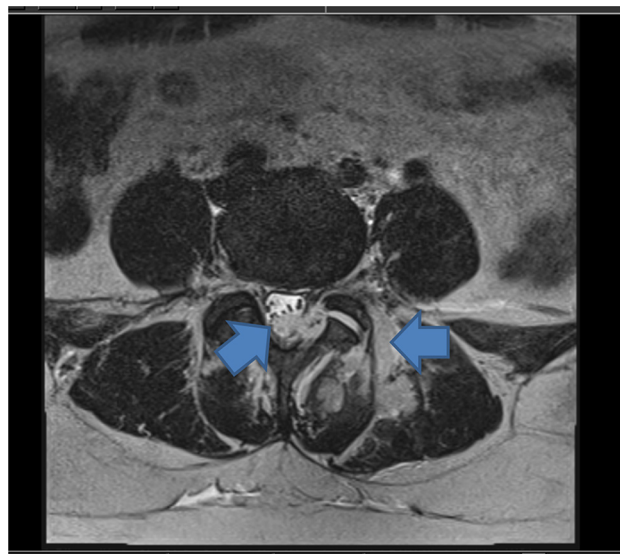


Fig. 3 – Axial T2 image at L4/5 level. Subdural collection again demonstrated. Also evident is abnormal high signal intensity in left L4/5 facet joint and left paraspinal muscles.

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