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STREPTOCOCCUS ANGINOSUS-INDUCED SPONDYLODISCITIS CAUSING PARAPLEGIA – A CASE REPORT AND REVIEW OF LITERATURE

Clinical Science

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ABSTRACT

Introduction: Spondylodiscitis is a musculoskeletal illness that affects the intervertebral disc and adjacent vertebral body. Staphylococcus aureus is the most common pathogen responsible for spondylodiscitis, other bacteria such as Streptococcus anginosus group (SAG) cause this infection in smaller percentage. They are commonly seen in the oral cavity and are linked to dental and periodontal problems.**Case Report:** A 65-year-old male presented to the outpatient department with complaints of lower back pain for 15 days, progressive bilateral lower-limb weakness for 8 days, and straining during micturition. MRI of dorsal spine revealed marrow edema in the D10-D11 vertebral bodies, epidural collection causing significant cord compression, focal cord edema, thickening of the ligamentum flavum, imaging features favoring an infective etiology, consistent with D10-D11 spondylodiscitis.**Conclusion:** This case highlights the importance of whole spine imaging and maintaining a suspicion for infectious etiologies in elderly patients presenting with acute neurological deterioration, even when initial imaging suggests a degenerative pathology and a clinic-radiological mismatch.

KEYWORDS

Streptococcus Anginosus, Spondylodiscitis, Paraplegia

INTRODUCTION:

Spondylodiscitis is a musculoskeletal illness that affects the intervertebral disc and adjacent vertebral body. Staphylococcus aureus is the most common pathogen responsible for spondylodiscitis, other bacteria such as Streptococcus anginosus group (SAG) cause this infection in smaller percentage. (1)

The SAG consists of gram-positive bacteria such as S. anginosus, Streptococcus intermedius, and Streptococcus constellates. They are commonly seen in the oral cavity and are linked to dental and periodontal problems. (2)

Case studies on paraplegia specifically caused by spondylodiscitis due to Streptococcus anginosus are limited as most cases describe paraparesis, severe pain, or neurological deficits without full paraplegia. S. anginosus group infections often lead to spondylodiscitis with complications like epidural abscesses, which can cause motor weakness or paralysis in severe instances. No previous case study found detailing complete paraplegia as the primary outcome. (1, 3, 4)

In this case study we present a case of a Year old male with Paraplegia in spondylodiscitis due to Streptococcus anginosus.

Case Presentation : A 65-year-old male presented to the outpatient department with complaints of lower back pain for 15 days, progressive bilateral lower-limb weakness for 8 days, and straining during micturition for 4 days, for which he had been catheterized. The patient also reported constipation and recalled lifting heavy weight 15 days prior to symptom onset. He had no significant past medical or medication history.

Clinical Examination: Neurological evaluation revealed:

- Motor power: 0/5 in both lower limbs
- Sensation: Approximately 50% reduction below both knees
- Reflexes: Normal

Based on initial evaluation, an MRI lumbosacral spine was performed, which showed lumbar canal stenosis from L2-L5.

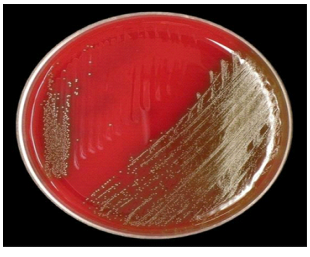
MRI of dorsal spine revealed marrow edema in the D10-D11 vertebral bodies, epidural collection causing significant cord compression, focal cord edema, thickening of the ligamentum flavum, imaging features favoring an infective etiology, consistent with D10-D11 spondylodiscitis.

Surgical Management: Given the progressive neurologic deficit and radiologic cord compression, the patient underwent D10-D11 discectomy with D9-L1 fixation. The patient was positioned prone under general Anaesthesia. After standard scrubbing, painting, and draping, a midline incision was made. Pedicle screws were inserted from D9-L1 under image intensifier guidance. D10-D11 laminectomy was performed for cord decompression Epidural pus and granulation tissue noticed ventral to the dura. The infected disc space at D10-D11 was identified, thorough debridement was performed, and a discectomy was completed. Samples were sent for culture and sensitivity and histopathological examination. Following copious irrigation, a bone graft was placed in the D10-D11 interspace. The wound was closed in layers over a negative suction drain. The culture of the intra op sample grew SAG. The patient was started on sensitive antibiotics as per the antibiotic sensitivity reports in consultation with the infection disease specialist.



MRI showing marrow edema at D10-D11 vertebral bodies with epidural collection and cord compression

A 6-month follow-up visit showed that the patient's neurology improved to MRC 3/5 on left and 1/5 on right, Bowel and bladder completely recovered, sensations completely recovered. Colonies of Streptococcus anginosus on bloodagar petri dish



DISCUSSION:

Pyogenic spondylodiscitis is rare, amounting to 2%-7% of musculoskeletal infections. Immunosuppression from diabetes, chronic steroid usage, HIV, cancer, renal and hepatic failure, advanced age, IV drug misuse, multimorbidity, cardiovascular illness, obesity

and previous spinal surgery increase the risk of this infection. (3) S. Aureus causes over 50% of cases, while Streptococcus causes 2%-11.6%. (5)

A 2024 case report details an immunocompetent male with S. anginosus spondylodiscitis at L2-L3, presenting with incapacitating back pain (VAS 8-10), limited lower extremity movement due to pain, and positive Lasegue test, but no motor or sensory deficits or paraplegia. (1). A 2019 case report describes paraparesis and bilateral pulmonary abscesses from pyogenic spondylodiscitis by SAG bacteria, highlighting neurological compromise like leg weakness. (6). A 2023 case report describes a 52-year-old female with extensive SAG from S. intermedius spanning cervical to lumbar spine, progressing to complete paralysis in one day. (7) A 2023 case of cervical Spinal Epidural Abscess due to S. constellates caused acute lower limb paralysis and bowel/bladder dysfunction in a 44-year-old male, emergency decompression and antibiotics led to gradual recovery. (8)
Conclusion: This case highlights the importance of whole spine imaging and maintaining a suspicion for infectious etiologies in elderly patients presenting with acute neurological deterioration, even when initial imaging suggests a degenerative pathology and a clinic-radiological mismatch. Rapid progression from back pain to paraplegia in this patient underscored the need for timely whole spine evaluation, which revealed underlying D10-D11 spondylodiscitis with epidural abscess. This case emphasizes the value of prompt diagnosis and multidisciplinary management in optimizing outcomes in spinal infections presenting with acute neurological deficits.

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