



Case Report

Post-Lumbar Laminectomy Arachnoiditis

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Introduction

Spinal nerve root arachnoiditis is caused by an inflammation of the arachnoid membrane which can result from many possible causes such as spinal surgery, myelography, infections, or trauma to the spine. As the inflammation progresses, scar tissue build-up occurs in the arachnoid mater, which causes adhesions to the nerve roots [1-5]. Recent studies show that up to 90% of arachnoiditis has been linked to lumbar spine surgery. Symptoms are usually non-specific, such as a burning sensation in the lower back which radiates down the legs to a non-particular dermatome, burning in the sacral area, knees, and feet, as well as neurogenic bladder symptoms.

Case Presentation

A 72-year-old male with HTN, IHD, and an overactive bladder presented with significant lumbar spinal stenosis and severe neurogenic claudication. He had no lower back pain or signs of radiological lumbar instability. The patient was operated on due to deterioration in walking capacity and underwent a single-level decompression surgery at L4-L5. During surgery, a dural tear was diagnosed, without any visible CSF leak. After a wide decompression, the tear was repaired with no dural tension. (Figure 1)



Figure 1: Pre-operative lumbar MRI section showing severe central and lateral lumbar spinal stenosis with stage 1 spondylolisthesis.

Three weeks following the surgery the patient was once again admitted to our department due to urosepsis and complaints of bladder and bowel dysfunction. There were no back or lower limb

complaints noted. His physical exam showed no signs of surgical wound infection and an intact lower limb motor exam, however diminished perianal sensation was evident. During his admission, he underwent a lumbar MRI with contrast that diagnosed acute arachnoiditis. In consultation with the neurology department, the patient was treated with pentoxifylline and prednisone as well as antibiotics for his UTI. He was released with a permanent catheter and further evaluation is being conducted by both the orthopedic and the urology departments. (Figures 2 and 3)



Figure 2: Three weeks post-operative MRI still showing severe central stenosis and a fat patch on the dural tear.

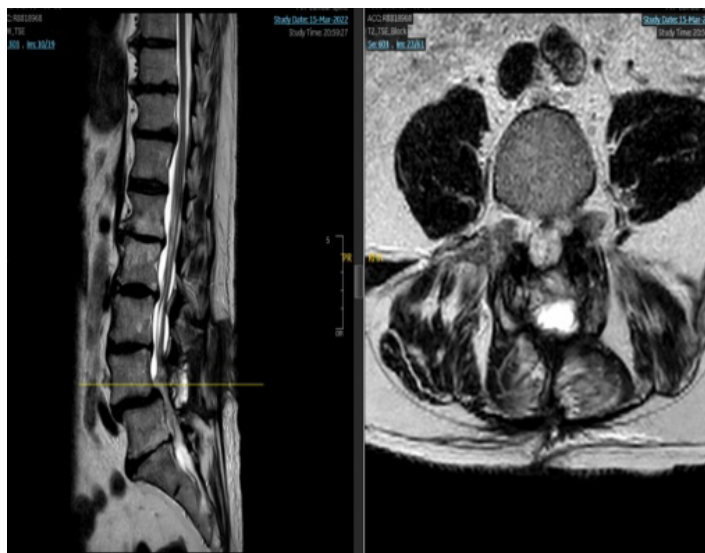


Figure 3: In contrast with the previous post-operative MRI scan, we can see a more open canal with fluid content which represents filling of CSF and now Arachnoiditis is more visible.

Conclusion

Arachnoiditis should always be considered in patients that present bladder dysfunction or atypical symptoms following lumbar decompression surgery, and a thorough evaluation is necessary to rule out this condition [6-9]. Additionally, early recognition and repair of dural tears are essential to avoid the development of arachnoiditis and its advancement to neurological deterioration.

References

1. Matsui H, Tsuji H, Kanamori M, Kawaguchi Y, Yudoh K, et al. (1995) Laminectomy-induced arachnoiditis: a postoperative serial MRI study. *37(8):660-6*.
2. C Ribeiro 1, F C Reis (1998) Adhesive lumbar arachnoiditis. *Acta Med Port 11(1):59-65*.
3. Nancy E Epstein (2021) Early diagnosis and treatment of postoperative recurrent cerebrospinal fluid fistulas/ duraltears to avoid adhesive arachnoiditis. *Surg Neurol Int. 12:208*.
4. Peng H, Conermann T (2021) Arachnoiditis. *StatPearls [Internet]*.
5. Bourne IHJ (1990) Lumbo-sacral adhesive arachnoiditis: a review. *Journal of the Royal Society of Medicine 83: 262-265*.
6. Esses SI, Morley TP (1983) Spinal Arachnoiditis. *Can. J. Neurol. Sci. 10:2-1*.
7. Assey EV, Sadiqa AM, Swai MJ, Sadiq AM, Dekkera MCJ (2021) Idiopathic Arachnoiditis of the Cauda Equina: A Case Report from Tanzania. *Case Rep Neurol 13:535-540*.
8. Benoist M, Ficat C, Baraf P, Massare C, Bard M, et al. (1979) Postoperative sciatica from epidural fibrosis and lumbar arachnoiditis. Results of 38 repeat operations. *Rev Rhum Mal Osteoartic 46(11):593-9*.
9. Nakano M, Matsui H, Miaki K, Tsuji H (1998) Postlaminectomy adhesion of the cauda equina. Inhibitory effects of anti-inflammatory drugs on cauda equina adhesion in rats. *Spine (Phila Pa 1976). 23(3):298-304*.