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Case Report

Radiculopathy due to spontaneous facetal cyst hemorrhage

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Abstract

Facetal cysts are usually encountered as incidental radiological findings in spinal imaging studies. Only rarely can neurological symptoms be attributed to them. These cysts are lined by vascularized synovial tissue. There are few reports in literature of hemorrhagic transformation in these cysts with sudden increase in size precipitating symptoms acutely. We report one such case where the existence of a hitherto undiagnosed cyst was unmasked by the haemorrhage. There is a need to be aware of this complication in patients with untreated or incidentally diagnosed cysts so that any sudden neurological deterioration can be dealt with promptly.

Key words: Facetal joint, intra-spinal cyst, intra-cystic hemorrhage, synovium

INTRODUCTION

Spinal facetal cysts are synovial outpouchings from the lining of the spinal facetal joint complex. They are usually secondary to facet joint degeneration that can occur as part of the spondylotic process. Slow growing, intra-spinal and extradural in location, they are usually asymptomatic[1] but may rarely present with long standing low back pain, radiculopathy or symptoms of neurogenic claudication. Kaneko *et al.* have also emphasized that while they may be associated with pain, they are typically not associated with neurological impairment.[2] The incidence of lumbar synovial cysts is 0.5% of the symptomatic population.[1] In the lumbar spine, the most common site of occurrence has been described at L4-L5 levels.[1]

Their nomenclature is controversial with several terms like juxtafacetal cysts, ganglion cysts, and synovial cysts being used. Miyatake *et al.*[3] have stressed that they simply be called facetal cysts in view of the fact that they communicate with the facet joints.

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CASE REPORT

An 81-year-old male patient presented with complaints of severe left leg radicular pain of 1-week duration due to which he was not able to even stand with support. There was no history of history of trauma or coagulation disorders. There was no sphincter disturbance. There was tenderness of lumbosacral (LS) spine on the left side at L5-S1 levels. Straight leg rising was restricted on the left side. There was no sensory or motor deficit. Left ankle jerk was absent. X rays showed no vertebral instability. Magnetic resonance imaging (MRI) of lumbosacral spine showed bilateral facet joint arthropathy with evidence of significant synovial thickening, opening up of facet joints at L5-S1 levels with a large facetal cyst with extra and intra-spinal components in the left side at L5-S1 level compressing

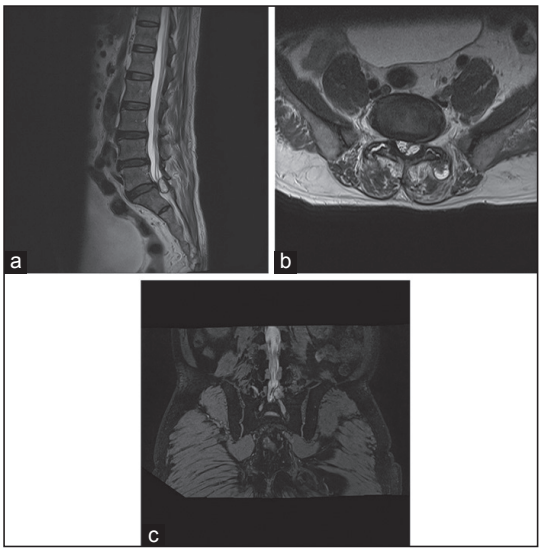

Figure 1: Magnetic resonance imaging (MRI) images of the lumbosacral spine (a) T2 parasagittal view showing an inhomogenously hyperintense cystic lesion with a hypointense margin at the L5-S1 level, (b) the mass is intra-spinal and extradural in location on the left side and is compressing the thecal sac. An extraspinal component at the dorsal aspect of the facet is also seen. Irregular margins of the facet joint with increased T2 signal within suggestive of arthropathic changes are noted and (c) 3D double echo steady state imaging (DESS) showing compression of the left S1 nerve root by the lesion

the thecal sac and left S1 root [Figure 1].

Left L5-S1 fenestration with medial facetectomy and piece meal removal of the cyst was done. Intra-operatively, the lesion was having a friable wall with soft solid contents. The wall was adherent to dura but easily separable from it. Pericystic and intra-cystic hemorrhage was seen. The lesion was continuous with the left L5-S1 facet joint. Histopathology showed a cyst lined by a single layer of cuboidal epithelium with a congested wall containing many blood vessels and hemorrhage within the cyst wall and contents [Figure 2]. A diagnosis of hemorrhagic facetal cyst was made. Post-operatively the patient was pain free and ambulant with no support. There has been no recurrence of symptoms at 1-year follow-up.

DISCUSSION

Spontaneous hemorrhage into facetal cysts is an exceedingly rare event and can precipitate symptoms due to sudden increase in cyst size with consequent root compression.[4,5] The source of these hemorrhages is speculated to be bleeding from the vessel rich synovial wall.[3,4] In our case, we found a congested cyst wall with multiple vessels on histology with hemorrhage in the wall of the cyst as well. While causes like trauma, anti-coagulation, or vascular anomaly have been implicated in some patients[6], in the majority (like in our case) there is no identifiable precipitating factor. The incidence of hemorrhagic cyst varies from 0-9.2%.[1]

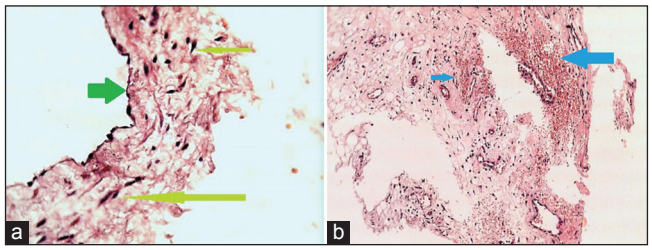

Figure 2: Microphotograph showing (a) single layer of flat cuboidal cells lining the cyst (dark green arrows) with the cyst wall containing abundant blood vessels (light green arrows) and (b) hemorrhages in the cyst wall (blue arrows)

Hemorrhagic cysts seldom respond to conservative therapy like their unbled counterparts and may cause progressive neurological deficits.[7] Due to the severe pain or deficits (ranging from radiculopathy to the cauda equina syndrome)[8] that these cysts cause, most authorities advocate proceeding with surgical excision and have reported excellent results with the same.[3-8] Ramieri *et al.* in a series of 3 cases of lumbar hemorrhagic synovial cysts have stated that the "painful symptoms are violent and generally intractable."[5] Medial facetectomy with removal of part of the joint has been advocated by some authorities to prevent recurrence[7] and the same was done in our case. As we did not disrupt the entire facet and since only a unilateral approach was taken, hence we did not consider fixation necessary.

Histopathologically we found a single layer cuboidal epithelial lining that may represent synovium, but this has not been reported by several authors — in the absence of such lining they are often called ganglion cysts.[1] However, it has been stated that establishing cyst connection with the facet joint is more important than histology to determine the pathogenesis.[3]

CONCLUSION

To conclude, hemorrhagic facetal cysts are rare entities that may exacerbate symptoms of a previously present lesion or may unmask a completely occult pathology. The source of bleeding is from the vascular synovial tissue lining these cysts. This complication must be kept in mind particularly in those patients with asymptomatic lesions kept on follow-up so that no time is wasted on trials of conservative treatment and prompt surgical excision is expedited. Lastly, surgery has gratifying results even in the presence of pre-operative deficits.

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