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## Intraosseous degenerative cyst in the body of L2 vertebra

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### Abstract

**Introduction:** Simple bone cysts are common, benign, fluidfilled, cystic lesions that occur mostly in the metaphysis of the long bones and are rarely found in vertebrae.

**Case presentation:** A case of a degenerative cyst in second Lumbar vertebral body in a 30-year-old Male is reported. he was found to have tuberculous meningitis and hence was started with AKT. According to the radiologic findings, the lesion was identified as a cystic lesion, and the diagnosis was verified by surgical and histopathologic examinations and confirmed one to be degenerative cyst. Degenerative material was excised from the cyst and thus the cavity was filled with bone grafts and fixed with C C crew and AKT was continued for 1 year. On follow up Patient had no complaint regarding back pain and Graft incorporated.

**Conclusion:** A cyst in vertebra is always a clinical as well as radiological diagnostic dilemma. Moreover it may vary in presentation as well as may be diagnosed incidentally, thus diagnosis and management both are dilemma.

**Keywords:** Bone cysts, tuberculous meningitis, bone grafts, diagnostic dilemma

### Introduction

Although Bloodgood first recognized simple bone cysts as a distinct disease entity in 1910, Jaffe and Lichtenstein <sup>[1]</sup> were the first to provide a detailed description of the simple vertebral bone cyst in 1942. Simple cyst are usually found in long bones <sup>[2, 3]</sup> but in vertebrae comparatively less found. Moreover a cyst in vertebrae could be due to varied reasons like Aneurysmal bone cyst, Giant cell tumor, Unilocular bone cyst etc. Degenerative cysts are comparatively rarely found. Moreover there are not much details in literature about such cysts in vertebral body. Such cysts are mostly found as an insidious findings during screening for some other pathology as in the given case.

### Case Report

A 30 year old male patient presented with complaints of headache fever and vomiting since 10 days before presentation hence on thorough examination he was found to have tuberculous meningitis and hence was started with AKT. Along with it patient also had backache along with grip weakness in left upper limb and neurological involvement in left lower limb. Patient had no sensory or bowel bladder involvement. With AKT the general condition of patient improved but backache and 0the weakness persisted on further evaluation a cystic lesion was found by X-ray L.S. and MRI in L2 vertebral body (Fig 1), (Fig 2).

### The Dilemma

1. Whether the lesion was tubercular
2. Unexplained lower limb weakness in absence of nerve root compression
3. Grip weakness when could not be justified by L2 vertebral lesion
4. Left side involvement though the lesion was on right side of body of vertebra.

### Management

The nerve root deficit was probably due to tubercular meningitis and so Corticosteroids were started.

Gradually the neurology improved but the backache persisted for two months.

Hence the steroid was tapered and CT guided biopsy was taken which showed lesion to be of benign nature (Fig 3).

Hence vertebral body was approached through right lateral approach in routine cases the vertebral body is approached through left side but in this case lesion was approached through right side as the lesion was towards the right side of the vertebral body (Fig 4).

Degenerative material was excised from the cyst and thus the cavity was filled with bone grafts and fixed with C C crew (Fig 5).

Histopathological examination confirmed one to be degenerative cyst. Post operative patient was mobilized with brace for 6 weeks and AKT was continued for 1 year. Graft incorporated in 3 months.

### Follow Up

Patient has been followed for 1 yr with no recurrence or neurological involvement noted. AKT was continued for 1 year. At the end of 1 year the X-ray Lumbar Spine revealed sound healing of the cavity with consolidation of the graft. Patient had no complaint regarding back pain (Fig 6).

### Discussion

In the present case, patient had tuberculous meningitis mainly debilitating patient and cyst was an incidental finding. Moreover, the neurological involvement associated without any nerve root compression and upper limb grip weakness were not justified by L2 vertebral body lesion. To add to it, the neurological involvement was on left side whereas the lesion was on right side of the vertebral body.

The questions encountered were (A) what was the cause of neurological involvement & (B) how to manage the incidentally found cyst like this.

Tuberculous meningitis leading to neurological deficit in both side is known, though less common and hence was treated with steroids. Patient responded well and the neurology improved. However backache due to cyst persisted and warranted further management. Thus the benign lesion was confirmed by CT guided biopsy following which the cyst was approached by surgery.

Most of the simple bone cysts are asymptomatic, unless they come with pathologic fracture. They are recognized incidentally on radiographic examinations. Any other prior symptoms are mild pain, local tenderness, and swelling [4]. Although roentgenography is usually adequate to identify the simple bone cyst, CT and MR imaging should be used for diagnosis of lesions in anatomically complex locations such as the vertebrae.

Simple bone cysts usually lead to fracture of the bone; therefore, some of these fractures may cause the migration of a fractured bone tissue into the cystic cavity. This rare pathognomic radiologic finding is known as "fallen fragment sign" [5]. In the case of our patient, the lesion did not cause any such fracture in the bone.

Review of the literature on this topic, doesn't reveal any case like this. These kind of cysts might be described as aneurismal bone cyst, fibrous dysplasia, pneumato cyst or hydatid cyst. However present cyst mimic aneurismal bone cyst as there was collection of blood within the cavity. However blood might not be found in the cavity always. Unfortunately this was not confirmed on histopathology.

### Conclusion

A cyst in vertebra is always a clinical as well as radiological diagnostic dilemma. Moreover it may vary in presentation as well as may be diagnosed incidentally, thus diagnosis and management both are dilemma. In the present case, patient had tuberculous meningitis mainly debilitating patient and cyst was an incidental finding. CT and MR imaging should be used for diagnosis of lesions in anatomically complex locations such as the vertebrae.

### Clinical Message

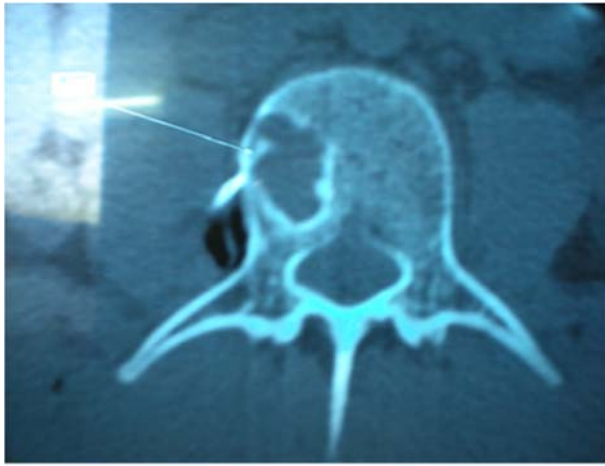
All imaging techniques should be used to make a complete diagnosis before surgical intervention. Excision of cyst and the cavity fill with bone grafts is effective treatment associated with low morbidity in such cases of insidious cysts.



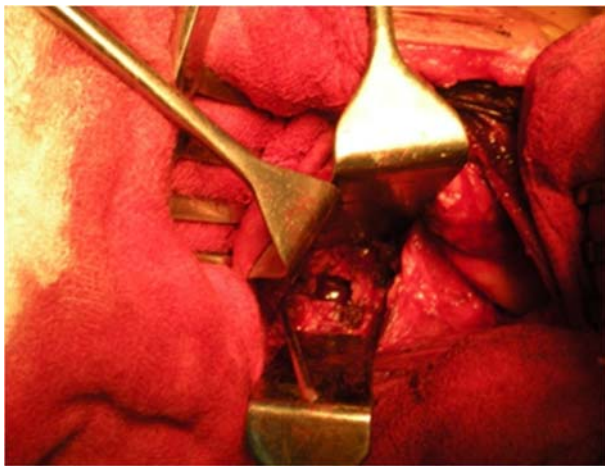
**Fig 1:** Cystic lesion was found in L2 on X-ray L.S. spine.



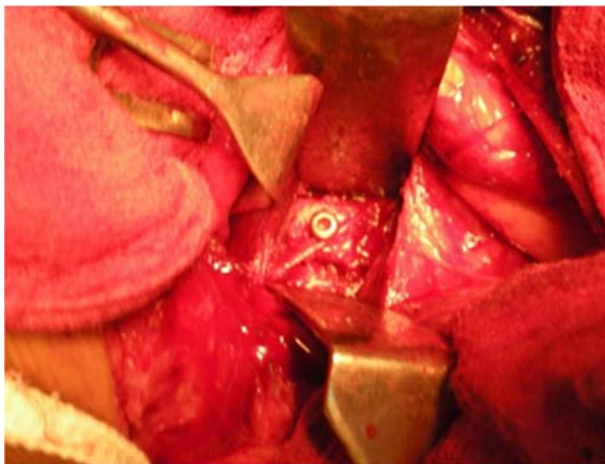
**Fig 2:** Cystic lesion was found in L2 on MRI L.S. spine



**Fig 3:** CT guided biopsy was taken which showed lesion to be of benign nature.



**Fig 4:** Degenerative material was excised from the cyst and cavity seen.



**Fig 5:** The cavity was filled with bone grafts and fixed with C C crew.



**Fig 6:** On follow up X-ray Lumbar Spine revealed sound healing of the cavity with consolidation of the graft.

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