



Case Report

Osteochondroma arising from posterior superior iliac spine: A case report of unusual cause of low back pain

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ABSTRACT

Low-back pain is the most common symptom encountered in orthopaedic spine out-patient practice. In young adults, the usual causes are soft tissue injuries, myofascial pain, annular tear of the intervertebral disc, sacroiliitis and spondyloarthropathies. We report a case of 20-year-old skeletally mature male presenting with chronic low back pain who was treated symptomatically elsewhere. He presented to us for second opinion and upon clinical assessment, he was diagnosed to have osteochondroma arising from the right postero-superior iliac spine. Osteochondromas are osteo-cartilaginous benign tumour with 1% malignant potential seen in adolescents and young adults. They usually arise from the metaphysis of long bones around the knee and occasionally reported in humerus, spine and pelvis. These lesions are mostly asymptomatic and found incidentally. En-bloc excision of the tumor is recommended for symptomatic osteochondromas. Clinicians should be aware of atypical pelvic osteochondromas which can present as extra-spinal cause of chronic low back pain.

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1. Introduction

Low back pain is a common symptom in outpatient orthopaedic spine clinic. In young adults, causes are myofascial pain, spondylolysis, annulus tear with or without disc degeneration and herniation, sacroiliitis and inflammatory spondyloarthropathies.^{1,2} Extra-spinal pain sources should be a differential diagnosis and high index of clinical suspicion is required to avoid misdiagnosis.³

Osteochondromas are the most common benign bone tumors accounting for 20-50% of all benign bone tumors.⁴⁻⁶ They are typically seen in younger population up-to third decade. Osteochondromas are chondrogenic lesions either solitary or multiple derived from aberrant cartilage from the perichondral ring of growth plates that may present as either sessile or pedunculated lesions on the surface of bones

with a cartilaginous cap. The multiple form is an autosomal dominant syndrome known as hereditary multiple exostosis (HME) or familial osteochondromatosis^{7,8} caused by mutations in EXT1, EXT2 and EXT3 tumour suppressor genes.^{5,9}

Common anatomical sites include metaphysis of long bones around knee (distal femur, proximal tibia), proximal femur, proximal humerus. Rarely, Osteochondromas are seen in atypical anatomical sites such as flat bones (pelvis, scapula, and spine) owing to the fact that they can be seen in any bone that grows via enchondral ossification. Diagnosis can be challenging when these lesions are seen in atypical locations and cross-sectional imaging such as CT is essential to demonstrate cortical and medullary continuity of lesion with the underlying bone, which is a pathognomonic feature.^{10,11} Here, we report a 20-year old male presenting with chronic low back pain due to atypical osteochondroma originating from right postero-superior iliac spine.

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2. Case Report

A 20-year-old skeletally mature male presented to orthopedic spine clinic for evaluation of chronic low back pain with no radicular pain. There was no history of trauma, fever, weight loss, night sweats or swelling elsewhere in the body. Patient had multiple outpatient consultations elsewhere with no relief and persistent difficulty in lying supine while sleeping. On examination, there was a non-tender hard mass measuring approximately 3 x 3 cm located on right postero superior iliac spine (PSIS) of the iliac wing (Figure 1). On Palpation, mass was fixed to the underlying bone While the skin was free and mobile over it. There were no other masses and spinal neurological examination was normal.

X-ray of Pelvis-AP view and Lumbosacral spine Lateral view demonstrated well defined lobulated extra bony growth seen from the posterior aspect of the right superior iliac bone projecting posteriorly. (\$) CT imaging revealed lobulated small pedunculated extra bony outgrowth from the right posterosuperior iliac spine with continuity of the medulla of the iliac bone and measuring 3x3x3.3 cm.

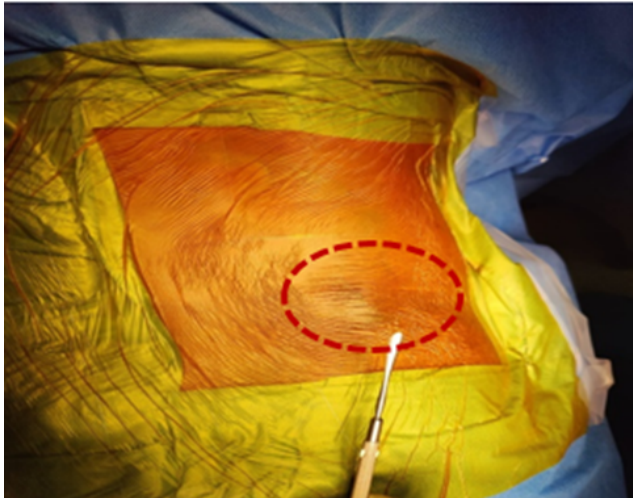


Figure 1: Clinical picture showing mass arising from right posterior superior iliac spine



Figure 2: Xrays showing bony outgrowth from right posterior superior iliac spine



Figure 3: 3D-CT images showing osteochondroma from right posterior superior iliac spine

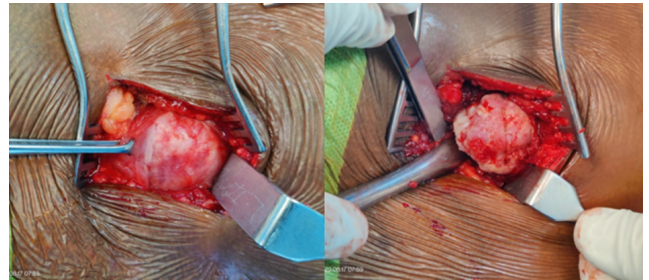


Figure 4: Intra-op images showing bony mass with cartilaginous cap

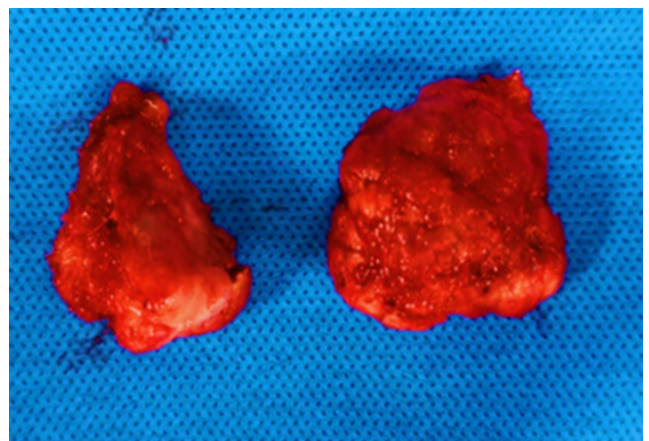


Figure 5: Surgical specimen

The lesion is seen elevating the origin of right gluteus maximus muscle -suggestive of benign osteochondroma (Figure 3). MRI of lesion could not be obtained in view of financial restraints of the patient. He was planned for En-bloc Excision of lesion as there is persistent low back pain, restriction of daily activities and the potential for malignant transformation.

Under General Anesthesia, Patient was placed in prone position and a 6cm oblique incision was made centering over the mass at the posterior aspect of the right iliac crest. Sharp dissection was performed through the subcutaneous tissue. Blunt dissection was used to establish fascial planes. The encapsulated mass was then encountered (Figure 4). The capsule was opened to visualize the cartilaginous cap (Figure 5).

The muscular tissue was then elevated off the stalk attempting to preserve as much native tissue as possible. The periosteum was elevated around the base of the mass. Once adequate visualization of the mass was achieved, a curved osteotome was used to sharply osteotomise the mass at the base of the pedunculate stalk in line and flush with the contour of the iliac wing. The specimen was sent for histopathology examination. Surgical site was reassessed to ensure it was removed in toto. Bone wax was applied over the cancellous bone to provide adequate hemostasis and prevent hematoma formation. Layered closure achieved over a surgical Drain. Patient was mobilized next day. After 48hours, surgical drain removed and patient was discharged. HPE report confirmed the lesion as osteochondroma without any evidence of malignancy. Subsequently, patient is symptom free and will be under periodic surveillance for 1 year to check for any recurrence.

3. Discussion

Low-back pain is a common symptom encountered in day to day orthopaedic spine practice. In young adults, the usual causes are injuries, myofascial pain, spondylolysis, annulus tear with or without disc degeneration and herniation, sacroiliitis, inflammatory spondyloarthropathies. However, identifiable source of pain may not be found in 10% patients seeking consultation for low backache.^{1,2} To the best of our knowledge, there are no case reports of low back pain due to atypical osteochondroma arising from PSIS. Osteochondromas are the most common benign bone tumors. They are usually seen at metaphysis of long bones. They are seldom seen in atypical anatomical sites such as scapula, spine and pelvis. The exact incidence of osteochondromas is unknown as many of these tumors are asymptomatic and therefore remain undiagnosed.⁸

Osteochondromas are usually discovered incidentally or while investigating for complaint related to osteochondroma itself.¹⁰ Majority of them seek consultation for complications like osseous deformity, fracture, mechanical or neurovascular impingement, bursa formation and

malignant transformation.^{4,7} In our case, patient presented with chronic low back pain and difficulty in sleeping flat due to osteochondroma arising from postero-superior iliac spine.

On radiographs, osteochondromas are classically seen as a sessile (broad base) or pedunculated (narrow stalk) exophytic bony outgrowth with cortical and medullary continuity with the underlying bone. Even though radiographs are usually sufficient for diagnosis, cross-sectional imaging like CT scan is needed to diagnose when atypical bones (spine, scapula and pelvis) are involved as the pathognomic cortical and medullary continuity will be less evident on radiographs.⁴ However, definitive diagnosis can be achieved only by histopathology of surgical specimen to confirm.

Unlike pedunculated osteochondromas, there are few reports of natural shrinkage of sessile based osteochondromas.¹² Asymptomatic lesions require no treatment, while surgery is indicated for symptoms, complications, cosmetic reasons, or uncertain diagnosis. Complete extra-periosteal resection is the recommended intervention. If complete resection is achieved, the recurrence rate is less than 2%.⁸ As the lesion is symptomatic in our case, we performed complete excision of lesion by removing osteochondroma at the normal bone base, along with cartilage cap and perichondrium.

4. Conclusion

Although Low back pain is a very common symptom, identifying the correct pain generator is of paramount importance. Atypical osteochondromas from posterosuperior iliac spine is a rare cause of low back pain and our case highlights the fact that high index of clinical suspicion is required to diagnose areas of extra-spinal pain generators and manage appropriately.

5. Source of Funding

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6. Conflict of Interest

None.


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