

CASE REPORT



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# Osteochondroma of Pelvis - A Case Report on Rare and Incidental Finding

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## Abstract

Osteochondromas may present in form of multiple hereditary exostosis or solitary osteochondroma. They are derived from aberrant cartilage from the perichondral ring and are benign chondrogenic lesions. Typical presenting age between 10 years to 30 years. They develop as a painless mass and appear on the bone's surface. Osteochondromas frequently occur at the points where tendons insert; the knee (proximal tibia, distal femur), proximal femur, and proximal humerus are common sites. Typically, the patient complains of deformity and swelling or are asymptomatic. They may appear as a pedunculated mass or as a sessile mass. This typically appears as mushroom shaped. It predominantly impacts enchondral ossification bones, occasionally affecting intramembranous ossification bones. We hereby reported a peculiar instance of osteochondroma of pedunculated type developing at a rare site –surface of ilium bone.

**Keywords:** Osteochondroma; Pelvis; Incidental; Benign bone tumour

## Introduction

The Osteochondromas are the most prevalent benign bone tumours (It represents 20–50% of benign bone tumours). These are developmental abnormalities that are believed to have their origins in the periosteum, not real neoplasms<sup>1,2</sup>. Inherit as autosomal dominant which can cause multiple exostoses or isolated lesion<sup>3</sup>. They often appear during the phase of fast skeletal growth and stop growing as soon as maturity is attained.<sup>1,3</sup> Typically, the patient reports swelling and cosmetic issues.<sup>4</sup>

Osteochondromas can appear as a pedunculated or sessile lump.<sup>1</sup> These lesions typically affect the tibia and femur, which are long bones that has metaphysis.<sup>5</sup> Often impacted are bones that grow through enchondral ossification.<sup>6</sup>

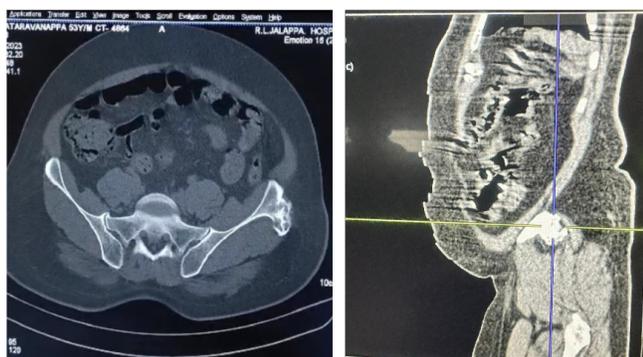
It has been observed that 4% and 5%, respectively, of the scapula and pelvis are involved. The hyaline cartilaginous cap, which essentially serves as a growth plate and undergoes progressive endochondral ossification, is the source of exostosis. Comparatively speaking, the lower limbs are affected more frequently than the upper limbs.

The flat bones, which are less likely to be impacted, include the clavicle, ribs, scapula, ilium, pubic ramus, and ischium. These bones undergo intramembranous ossification during the foetal period. Osteochondromas can manifest as a single tumour (osseocartilaginous exostosis) or as a collection of tumours (multiple osteochondromas). Osteochondromas can occasionally develop into cancerous tumours. Osteochondromas have been observed in this study at the pelvis, which is an uncommon location.<sup>6</sup>

## Case Presentation

A 53-year-old healthy male presented to EMD an alleged history of road traffic accident, following which he developed lower back ache. There was no deformity or swelling related to the pain. Onset was insidious and progress gradually. On examination, of lumbo-sacral spine, tenderness was noted over sacrum and coccyx region without any swelling, active SLRT over right side is 40 degrees. Clinically, a palpable bony hard mass was felt over lateral aspect of right pelvis with no pain or tenderness noted. There is no change in skin condition.

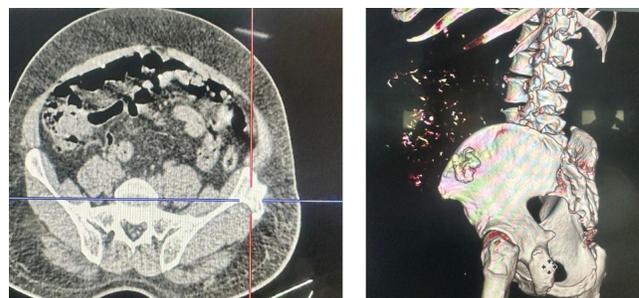
X-ray Lumbo-sacral spine AP view and lateral views showed no obvious bony fracture or fracture dislocations. Pelvis with bilateral hips Xray AP image revealed exostosis originating from the left ilium bone's surface. An oval to round pedunculated lesion aligned with the left side's cortex of the ilium bone that originated from the outside surface was revealed by a CT scan of the pelvis with 3D reconstruction. Notable is a cartilaginous cap. The swelling's bone origin was established by a CT scan of the pelvis.



**Fig 1. CT pelvis axial view and (b) CT pelvis with 3D reconstruction**

## Discussion

Osteochondroma is present in 35% of benign tumours and 8% of all bone tumours.<sup>7</sup> Osteochondromas mostly affect enchondral osseous bones; they are less common in intramembranous osseous bones, such as the pelvis.<sup>6</sup> Among



**Fig 2. (a) CT pelvis axial view and (b) CT pelvis with 3D reconstruction**

the long bones, the distal femur is the most frequently affected region.<sup>1</sup> Sex ratio is 1.6–3.4:1 with male preponderance.<sup>8</sup> Osteochondromas arise as physal plate cartilaginous expansion.<sup>1</sup>

The occurrence of osteochondromas has been linked to hematopoietic stem cell transplantation and injuries caused by radiation and surgery.<sup>8</sup> It has been determined that the tumour suppressor genes EXT1 and EXT2 are the genetic cause of the condition.<sup>4,9</sup> Google Scholar and PubMed were utilised to discover literature reporting osteochondroma arising from pubic rami. Statistical data from the Rizzoli institution indicates that Only seven occurrences of osteochondroma resulting from pubic rami were documented up until 2009.<sup>6</sup> Nekkanti *et al.* recently reported a case of sessile osteochondroma originating from the iliac wing.<sup>4</sup> Reporting in 2018 were Nayak *et al.* an example of osteochondroma growing from the pubis in a cadaver.<sup>10</sup> Osteochondromas only show signs of mass effect and compression of surrounding structures when they get sufficiently large. Compression of the lumbosacral nerve roots is a documented effect of pelvic osteochondromas.<sup>4</sup> The presence of nerve compression symptoms aids in determining the tumour's location. Whereas an iliac mass would compress the lumbar nerve root, an ischial mass would compress the sciatic nerves.<sup>4</sup> Urogenital structures may be compressed by a big osteochondroma.

Symptoms of bladder outlet obstruction may arise from compression of the urethra and bladder neck. Osteochondroma is a benign tumour, however it has the potential to turn cancerous. About 1% of cases of chondrosarcoma arising from osteochondroma have been documented in the literature.<sup>1,4,8</sup> There has only been one documented incidence of pelvic osteochondroma leading to the development of chondrosarcoma in the past.<sup>1,4</sup> When neurovascular impairment or chondrosarcoma occur, it is a clear indication to remove the tumour.<sup>1,4</sup> Neither an organ compression nor a neurovascular impairment was present in our patient. We identified the tumour with a routine pelvic X-ray and verified it with a pelvic CT scan. Away from the viscera and neurovascular structures, tumour was seen.

## Conclusion

The odd site of presentation of this instance led to its being reported. Although they are typically asymptomatic, these tumours might compress the pubic viscera or affect neurovascular function. These have a very low recurrence rate and are typically operated on for cosmetic purposes. It's important to distinguish between pelvic osteochondromas and other bony, hard pelvic masses.

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