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## Title of the article: Infected osteochondroma?: A rare case report in 68 year old male with review of literature

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### Abstract

Bursae formation is a common complication of osteochondroma. Due to repeated friction and minor trauma, there may be inflammation of bursae leading to leaking of serous fluid. We hereby report a 68 year old male presenting with discharging sinus overlying an osteochondroma of distal femur. In adults with rapidly growing osteochondroma, risk of malignancy should always be suspected.

**Keywords:** osteochondroma, bone tumor, benign bone tumor, bursitis

### Introduction

Osteochondroma is defined as type of developmental lesion rather than a true neoplasm. It arises from metaphyseal region of long bones and most commonly involves knee joint<sup>[1]</sup>. They are typically seen in patients younger than 20 year old and involvement in adults is rare. Histopathologically it consists of cortical and medullary cap with overlying hyaline cartilage cap in continuity with underlying bone cortex and medulla<sup>[2]</sup>.

Many complications of osteochondroma have been reported in literature. Most common complications include nerve impingement, fracture, decreased range of movements, bursitis and malignant transformation of cartilaginous cap<sup>[2, 3]</sup>. Rapid growth in adult is indicator of malignant transformation to chondrosarcoma. Other differential for rapid enlargement of swelling can be overlying bursa. Many cases of adventitious bursae formation overlying osteochondromas have been reported in literature<sup>[4-6]</sup>. We hereby present a case of solitary osteochondroma in 68 year old male.

### Case report

A 68 year old male presented after referred from a rural health centre with a diagnosis of "Infected Osteochondroma". Patient was having mild pain and swelling on lateral aspect of right distal femur with occasional discharge of cystic fluid from the lesion. He developed swelling within two month duration with increased swelling over last fifteen days and discharge from site since last seven days (Figure 1). There was no sign of any neurovascular involvement.



**Fig 1:** Arrow showing site of discharge

Physical examination revealed a non tender, painless, fluctuating soft tissue mass with a single discharging sinus overlying a bony hard swelling. Local temperature was normal with no signs of inflammation. There was no restriction of movement of knee joint. A plane radiograph was performed showing an irregular radio opaque lesion arising from lateral aspect of right distal femur.

It was reported at pedunculated osteochondroma. Along with main lesion, a small bony piece was visible on xray at the top of lesion (Figure 2). Ultrasonography was performed showing a small collection overlying the bony swelling suggestive of bursae formation. So after conformation of diagnosis, excision of lesion was planned.



**Fig 2:** Anteroposterior and lateral views of lesion showing osteochondroma

Under tourniquet, a linear incision given over lateral aspect of right distal thigh. Cystic clear fluid around 5 ml along with bursa membrane were excised. Bursa membrane was found to be thickened and inflamed and sent for histopathological examination. Further swelling along with stalk was completely exposed and complete excision of stalk was done. Small piece of bone visible on xray separated from was also excised. Bony mass was also sent for histopathological

examination (Figure 3, 4). Histopathological examination of the bony mass reported it as osteochondroma without any evidence of malignancy while membrane demonstrated inflammatory changes only. Post operative radiograph showed complete disappearance of lesion (Figure 5) At 6 month and one year follow up, patient is asymptomatic and there is no recurrence of lesion.



**Fig 3:** Intraoperative images of the lesion.



**Fig 4:** Resected lesion along with separated bony fragment.



Fig 5: Post operative radiograph.

### Discussion

Osteochondromas can be asymptomatic and symptoms vary as per location and size. Most symptoms or complications are due to impingement of bony swelling on adjacent tendons, ligaments, nerves and vessels [2].

Orlaw (1891) as cited in Unni coined the term exostosis bursata, which described a thickened bursa formation over the cartilaginous cap of osteochondromas as a rare complication [7]. A reactive bursa formation is relatively common complication of osteochondroma and arises from the friction between the osteochondroma and overlying soft tissue. Bursae formation is well reported in association with osteochondromas of the femur, rib, ischium and pubis [8].

In present case, bursae formation was located on lateral aspect of right distal thigh which is prone to repeated mechanical friction trauma during daily activities or minor trauma might have lead to rupture of wall leading to discharge of serous fluid and projecting false image of infected osteochondroma.

A painful and rapidly enlarging bursa clinically mimics a malignant transformation, particularly at an adult age when skeletal maturation has been completed. It is very important to differentiate these two complications, and this can be easily done by using the appropriate imaging modality, which is usually ultrasound or MRI [9]. MRI is undoubtedly investigation of choice to rule out malignant changes. Thickness of cartilage caps acts as predictor of malignancy. A cartilage cap of thickness greater than 1.5 cm is strongly suggestive of malignancy in patients with skeletal maturity [10]. In present case, malignancy was ruled out clinically and histopathologically.

### Summary

We described a patient with a rapidly enlarged adventitious bursitis overlying an osteochondroma of the distal femur where mechanic stresses related to extremity motion might have played a role leading to serous discharge mimicking an infected swelling. Early diagnosis and excision of osteochondromas is essential specially in skeletally mature patient due to malignant transformation.

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