

# Case report: Extra skeletal chondroma of the ring finger in right hand

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## To cite this article:

Siddaram Patil, Sankar Rao P., Pradeep, Pawan Nawataki. Case Report: Extra Skeletal Chondroma of the Ring Finger in Right Hand. *Journal of Surgery*. Vol. 2, No. 1, 2014, pp. 7-10. doi: 10.11648/j.js.20140201.13

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**Abstract:** A 45 year old male patient presented with history of painless swelling on the right dorsum of ring finger palm since 4 years. Physical examination revealed irregular firm mass on the volar aspect of the left thumb measuring 13x6 cm, extending from base of the proximal phalynx to thenar crease. Movements of right ring and little finger at MCP joint were restricted. X-ray of the hand showed a dense soft tissue mass with calcification (Fig. 1). There was no periosteal reaction nor any erosion of the cortical bone. Marginal excision of the tumor was done under regional anaesthesia and was sent for histopathological examination.

**Keywords:** Extraskelatal Chondroma, Extraskelatal Myxoid Chondrosarcomas, Ring Finger

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## 1. Introduction

Extraskelatal chondroma (ESC) is a rare benign tumor which has a tendency to occur in the hands and feet. It affects both sexes equally and mainly occurs in patients aged 30 – 60 years.<sup>1, 2, 3</sup> Repeated micro trauma may be an initiating factor. It presents as a slowly growing mass, most commonly in the hands and feet.<sup>1, 4</sup>

It should be differentiated from benign tumors like ganglion cyst, myositis ossificans, pseudomalignant osseous tumor, ossifying fibromyxoid tumor, synovial chondromatosis, osteochondroma, or a malignant tumor like chondrosarcoma, extra skeletal osteosarcoma and synovial sarcoma.<sup>5,6</sup> Diagnostic errors can be avoided if any soft tissue lesion that cannot be diagnosed is regarded as potentially malignant until proven otherwise.<sup>6,7</sup> It arises from the synovial sheath of the long tendons, the paratendinous soft tissues or the para-articular tissues.<sup>5,8,9</sup> Extra-skeletal chondromas are composed of hyaline cartilage with focal calcification and can show worrying radiologic and histological pictures simulating chondrosarcoma.<sup>10,11</sup> MRI is the method of choice in the evaluation of this rare clinical entity. This tumor rarely evolves into a malignant tumor.<sup>9, 12, 13</sup> The clinical, radiological and cytological triad is important for the correct diagnosis of soft tissue chondroma despite worrying cell atypia.<sup>14, 15</sup> Positive diagnosis can only be provided by the histopathological examination. Surgical

treatment is the only successful solution but recurrence is not uncommon.<sup>11, 14, 15</sup>

## 2. Case Report

A 45 year old male was presented at Mamata Medical College & Hospital with a slowly progressive mass in the dorsum of his right hand since 4 years duration. Initially, the swelling was painless until 8 months, when he started to feel increasing in size, partial excission was done in other hospital. It has recurred to this size and it is progressive, however, there was no history of trauma. Furthermore, family history and personal history were irrelevant. General clinical assessment was normal.





**Figure 1.** Clinical photos of Extra Skeletal Chondroma.



**Figure 2.** An X-ray of Rt Hand.



**Figure 3.** Ultrasound examination of the mass.

Locally, there was a hard, fixed, lobulated, irregular nontender swelling on the dorsal aspect of the right hand, located at the ring finger. The swelling was 14 cm x 6 cm in size with diffuse borders. It was not attached to the overlying skin (Fig. 1). Distal circulation was normal. Hematological and Biochemical tests including CBC, ESR, LFTs, KFTs, and FBS were done, but Hb was 4 gm%, with severe anaemia; other investigations were normal.

An X-ray of the antero-posterior, lateral and oblique views showed a normal bony skeleton of the right hand with no evidence of calcifications (Fig. 2).

Ultrasound examination of the mass clarified a well-defined soft tissue mass of around 8x4x4 cm in size. The mass had a thickened wall and a hypo-echoic center and it contained one or more hyper-echoic minute foci (Fig. 3).

MRI of the left foot before and after IV contrast showed a well-circumscribed soft tissue mass with a hypo-intense central zone.

The mass was 3.4x2.3 cm in size with a lobulated surface. The mass was related to the extensor hallucis longus tendon and lying directly over the intermediate and medial cuneiform bones. The periosteum of the bones was intact.

Fine needle aspiration cytology (FNAC) of the mass revealed chondrocytes in a cartilaginous matrix with mild insignificant cellular atypia. The overall picture was suggestive of soft tissue chondroma.



**Figure 4.** Excised mass.

Since the patient was suffering from progressive inability to difficulty in Hand grip, he was scheduled for excisional biopsy of the mass under regional block. Intraoperatively, the mass was found to be hard, lobulated, grayish white situated under the skin, in close proximity to the lateral surface of the extensor tendon of ring finger and extending to palmar aspect.

The swelling was excised completely (Figs. 4). The patient had a smooth post-operative course and was discharged from the hospital on the second post-operative day in good general condition.

Histological assessment of the resected specimen confirmed a soft tissue chondroma characterized by chondrocytes in hyaline matrix with mild focal cellular atypia as shown in Fig. 5.

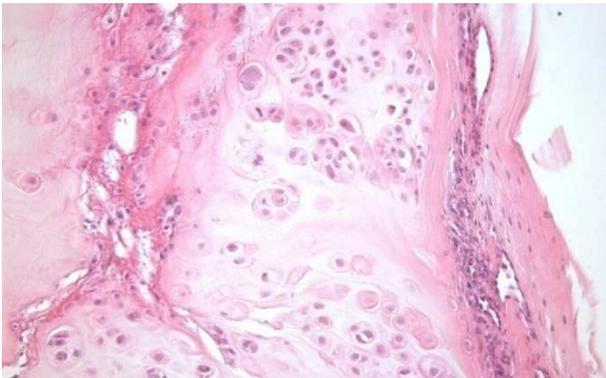


Figure 5. Histological assessment of the specimen.

### 3. Discussion

Soft tissue chondroma is a rare clinical entity. It has the following characteristic features:

- 1) Benign clinical course.
- 2) Not attached to the underlying bone.
- 3) Slow growth.
- 4) The absence of age and sex predominance
- 5) The histological picture.<sup>14, 15</sup>

The patient had developed the tumor over a 4 year course. He remained asymptomatic throughout, except for the last 8 months before surgery, when he developed increasing pain on hand functions. The mass was positioned completely within the soft tissues and was not attached to the underlying bone at all. Clinical examination revealed a fixed mass; this is because the tumor was lying under the extensor digitorum. Histopathology assessment of the tumor showed features of Extraskeletal Chondroma chondroma.

Soft tissue tumors should be investigated carefully if the clinical diagnosis is a matter of great concern. The best radiologic modality is MRI, as it can define the extent, the contour, the shape and the intensity of the tumor in addition to its relation to the surrounding structures and calcifications, if any.<sup>9, 10, 11</sup>

The patient had undergone an MRI to ascertain the lesion from other soft tissue masses to some extent. Furthermore, it helped to determine the exact location, extent of the mass and its relation to surrounding structures.

FNAC of soft tissue masses is not widely practiced for suspected soft tissue tumors. Only one case has ever been reported in the literature to have undergone FNAC for soft tissue chondroma to determine the diagnosis preoperatively.<sup>9, 13</sup>

Preoperative cytological assessment was performed for the patient to ascertain the diagnosis and decide the proper plan of management of the tumor. The assessment provided a preliminary diagnosis of Extra skeletal chondroma. However, the absence of significant cellular atypia and abnormal mitotic figures relieved the concern of malignancy.

Postoperative histological examination of the excised specimen was the best diagnostic modality to give the final diagnosis and determine the prognosis. Extra skeletal chondroma, once excised adequately, would rarely recur. Thus, recurrence is not exceptional.<sup>5, 7, 14</sup>

### 4. Conclusion

Overall, Extra skeletal chondroma is a very rare benign tumor most commonly affecting the extremities like the hands and feet. It has a slowly progressive benign course. It can be misdiagnosed as a malignant tumor based on its clinical features unless radiology and cyto/histology of the tumor of the affected part are performed. Generally, if the tumour is excised completely, it rarely recurs.

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