

Case Report

Rib enchondroma: A case report

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Abstract

Enchondroma is a slow growing benign cartilaginous tumour arising from the medullary cavity. These tumours are more of an incidental finding, while screening for surrounding pathologies. Enchondroma of the rib is a rare finding. A 29 year-old Asian male, presented to the outpatient department with complaints of; Right sided chest tenderness since a year. There was no history of fall or trauma. Chest X-ray revealed a well-circumscribed lytic lesion of around 4x2x2 cm, located on the right 5th rib. After surgery, patient's histopathology report revealed an enchondroma of the rib (5x2x1.5 cm with a lytic area of 2x1 cm). Despite enchondromas being benign, the ones in the ribs should be closely examined for signs of enchondrosarcoma. Complete surgical excision is the treatment of choice.

Keywords: Bone neoplasms, Chondroma, Ribs

Introduction

Chondroma is a slow growing benign cartilaginous tumour¹. According to its site of origin, chondromas can be differentiated into two groups; periosteal chondroma and enchondroma¹. Periosteal chondroma arises from the surface of the periosteum and enchondroma arises from the medullary cavity²⁻⁴. Enchondromas have an incidence of 2.1-2.8%⁵. These tumours are more of an incidental finding, while screening for surrounding pathologies. They are not cancerous tumours and biopsy is rarely needed in a setting of a stable enchondroma⁶.

Enchondroma of the rib is a rare finding. Here, we present a case of a 29-year-old male suffering from enchondroma of the rib, and discuss its clinical, radiological and histopathology features.

Case presentation

A 29-year-old Asian male, presented to the outpatient department of our institution with complaints of; Right sided chest tenderness since a year. Patient had no other complaints. There was no history of fall or trauma. On examination, chest moments were bi-laterally symmetrical; there were no scars, sinuses, or skin discolouration over the chest region. There was no swelling, but tenderness was present over the right 5-6th rib around mid-axillary line. Coughing did not aggravate or cause pain. Patient had a similar episode two years back, for which he went to an allied sciences doctor, who prescribed him some medications.

After taking those medications for a month, the patient's tenderness disappeared.

On investigating, his ECG and 2D-Echo were within normal limits. His routine blood parameters were within normal range. And ESR, and CRP were also not elevated. Chest X-ray revealed a well-circumscribed lytic lesion of around 4x2x2 cm, located on the right 5th rib (Figure 1). Computed tomography (CT) showed a well-circumscribed focus of radiolucency in the 5th rib and mild focal expansion, with absence of cortical breakthrough, endosteal scalloping, and periosteal reaction, suggestive of a benign bony lesion (Figure 2).

Patient was taken up for surgery and a clear excision of the tumour along with margins of the rib was done (8.5x2.1.5 cm, Figures 3, 6). Specimen was then sent for histopathology. Patient was kept in the ICU and observed for two days, followed by shifting him to the ward. On post-op day 14 after staples were removed, patient was discharged

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Figure 1. Pre-op X-ray of chest AP.



Figure 2. CT axial view of rib lesion.

from the hospital. Patient's histopathology report revealed an enchondroma of the rib (5x2x1.5 cm with a lytic area of 2x1 cm, Figures 4, 5). Patient followed up regularly and no recurrence was noted. Patient followed up to the outpatient department after 2 weeks, 1 month, 3 months, 6 months and 12 months, revealing complete clearance of the tumour and symptoms.

Discussion

Enchondromas originate from the medullary cavity and grow in an outwards manner without cortical penetration^{2,4}. They usually occur in a solitary fashion and are non-cancerous lesions⁷. Enchondromas of the rib are rare, and have not been documented frequently; they are commonly seen in the long bones, like those of the humerus, femur or tibia⁸. In our patient, we did come across such a rare location of this non-cancerous tumour.

Plain radiographs of the chest have limitations in identifying enchondromas. CT scan is needed in such instances, which reveals a well-circumscribed focus of radiolucency and mild focal expansion, with absence of cortical breakthrough, no endosteal scalloping, and no periosteal reaction, suggestive of a benign bony lesion (Figure 2).

Like in the case report by Keating RB, et al., the cartilage of the tumour was not a cap over normal bone, but extended outwards from the medullary cavity⁹. A periosteal

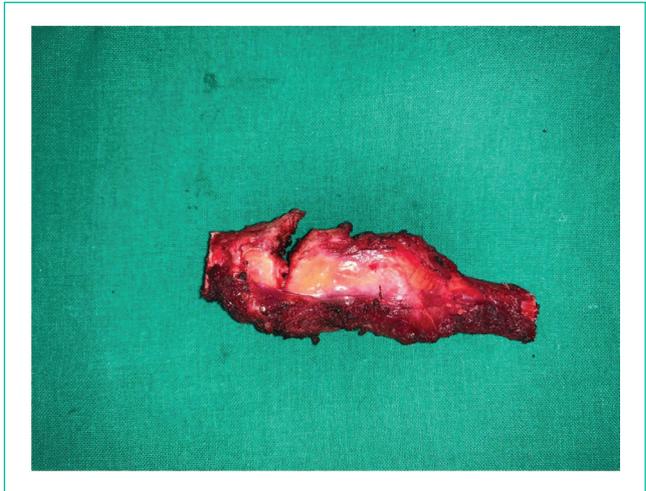


Figure 3. Intra-op excised specimen.

enchondroma produces a similar appearance; however, the cartilage arising in the periosteum erodes a part of the cortex, but the endosteal surface may remain intact or the medullary bone may be partially invaded⁹.

In presence of cartilaginous lesions in the rib, chondrosarcoma must always be considered, since

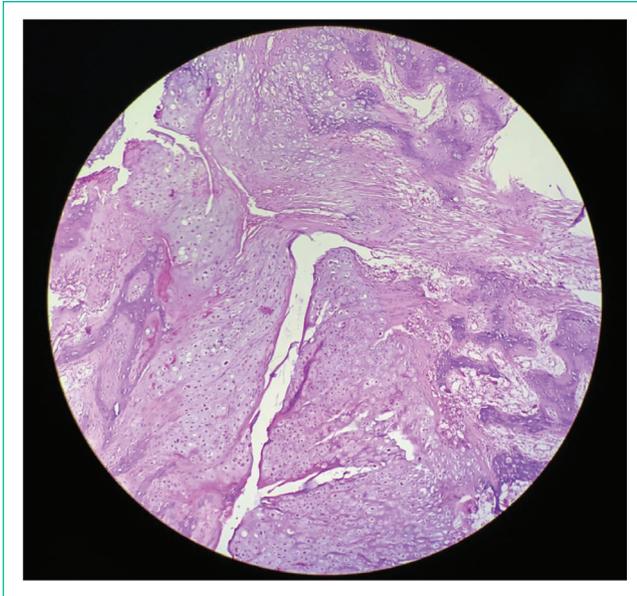


Figure 4. Histopathology low power (10X).

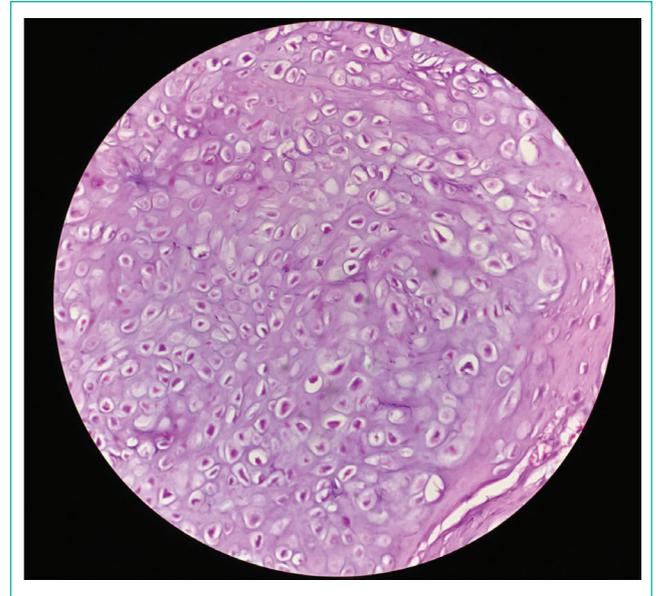


Figure 5. Histopathology high power (40X).

malignant cartilaginous tumours are more prevalent than benign tumours⁹. In our case on histology (Figures 4, 5), malignancy was ruled out, as the specimen showed ill-defined hypercellular lesion, composed of lobules of benign cartilage with chondrocytes arranged in clusters with abundant intercellular matrix. The lobulated area surrounded by mature bone, along with reactive bone formation with necrotic bone in the surrounding areas. There was no evidence of atypia/malignancy. Thus, a needle biopsy was not considered as we planned for a complete excision of the lesion and the surround areas. This provided an intact specimen for histopathology (Figure 3). The wound was then closed leaving behind no tumour edges.

Ruling out a malignant change before surgery is of utmost value as time, and efforts are saved along with the assurance that the patient has been completely freed of its tumour.

Here we report a case of an enchondroma of the right 5th rib in a 29-year-old male. Despite enchondromas being benign, the ones in the ribs should be closely examined for signs of enchondrosarcoma. Complete surgical excision is the treatment of choice.

Consent to publish

The patient has consented to the submission of the case report to the journal.

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Figure 6. Post-op X-ray of chest AP.

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