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A rare case of simple bone cyst in proximal humerus in skeletally matured patient-case report

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Abstract
A simple bone cyst is a common, benign bone tumor that primarily occurs in children and adolescents. In most cases, simple bone cysts are not painful and are often discovered incidentally when an X-ray is obtained for another reason. In this report, we present a case of SBC in 26yr older man who is skeletally mature, with pain in his left shoulder and arm for a 1-month duration. Although operative management is always a welcome move for symptomatic benign tumors like a simple bone cyst, simple bone cysts are very rare after skeletal maturity, but we should keep in mind that not all simple bone cysts present to us early.

Keywords: Simple bone cyst, skeletal maturity, fibular strut graft, proximal humerus

Introduction
Pain in the shoulder for a short duration is an infrequent symptom of a Simple bone cyst (SBC). Simple bone cysts are most commonly found in adolescents from birth to 20 years of age. They have a predilection for males (3:1 male: female). Simple bone cysts make up 3% of the primary bone lesions. SBCs are cavities within bone that are filled with fluid. Although they can develop in any bone, SBCs usually affect the long bones — most often the upper arm bone (humerus) and the thighbone (femur) [1].

In most cases, simple bone cysts are not painful and are often discovered incidentally when an X-ray is obtained for another reason. However, fractures are not uncommon because these cysts can weaken the surrounding bone [2].

Treatment for an SBC is based on several factors, including the size and location of the cyst and the risk for fracture. In some cases, surgery may be recommended [3].

This report discusses a case of SBC in a skeletally mature patient with pain in his left shoulder and arm for one month.

Case Presentation
A 26-year-old male, right dominant hand, a farmer by occupation, presented to us with complaints of pain in his left shoulder and arm for one month. No history of trauma.

On examination, there was tenderness in the proximal arm in the anterior and lateral aspects. No swelling clinically. Range of movement was restricted, with abduction 0-90 only possible. Other movements were terminally restricted. No distal neurovascular deficits

We planned for curettage, fibular bone graft and plating; the same was done in surgery (Intraoperatively). We went through a deltopectoral approach, and a bone window of about 2x8 cm was created anterolaterally. And we noted greenish yellow jelly consistency inside the bone. And it was curetted and sent for biopsy. We harvested 10 cm of the ipsilateral fibula as a strut graft. Later PHILOS plate applied

The biopsy came as a simple bony cyst. Postoperatively the patient was immobilized for one and half months. The patient was reviewed at 6 weeks, 3 months and 6 months, he was asymptomatic

Fig 1: Anteroposterior view of left shoulder showing the lesion

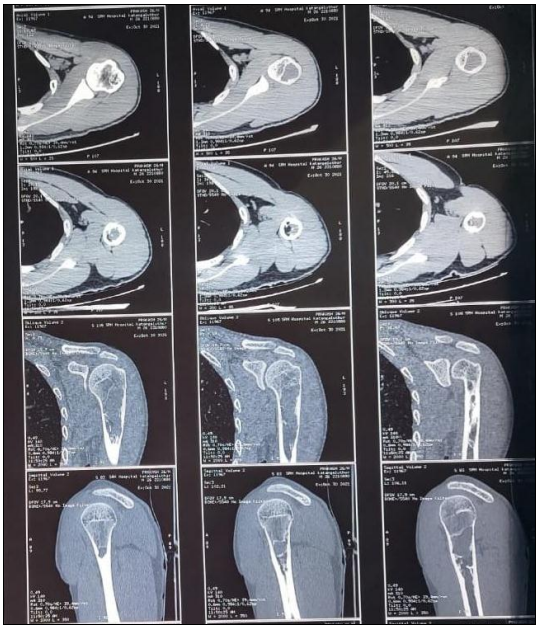

Fig 2: MRI sections showing Lesion

Fig 3: Deltopectoral approach showing cephalic vein

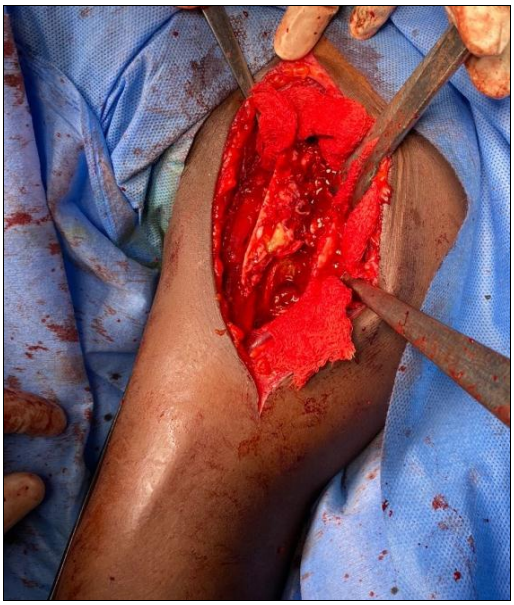

Fig 4: Lesion in the proximal humerus

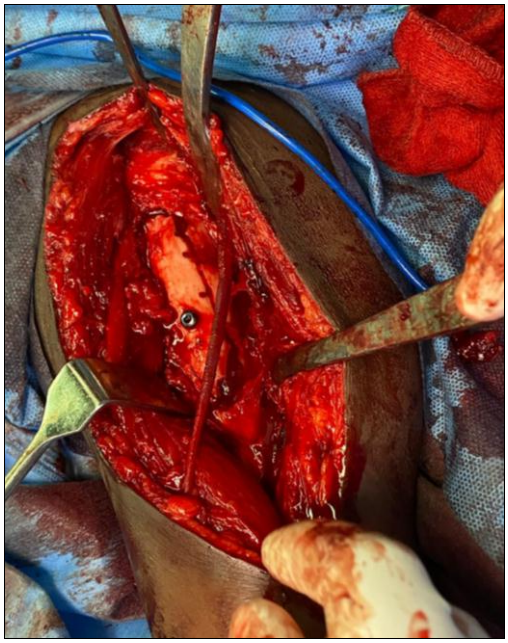

Fig 6: After through curettage fibula strut graft placed

Fig 7: Immediate post OP Radiography

Fig 8: Movements after 6 months Post OP

Fig 9: 6 months Post OP radiography

Discussion

SBCs are classified as active when they are within 1 cm of the physis and latent as they progress to a diaphyseal location. Differential diagnoses for SBC include aneurysmal bone cyst, fibrous dysplasia, enchondroma, and intraosseous ganglia [4]. By the time of skeletal maturity, most SBCs tend to resolve. The exact pathogenesis remains elusive. Many hypotheses have been suggested in the pathogenesis of SBC. Disturbance in bone growth locally, the role of pre-existing lesions, intramedullary haemorrhages as some posttraumatic cysts have the same histological features as SBC, and small nests of synovial cells trapped in an intraosseous position are some of the hypotheses described [5]. Blockage in the venous drainage is the most favoured mechanism, which occurs in a rapidly growing and remodelling portion of cancellous bone.

The treatment of SBCs has continued to evolve with time. Contemporary methods include injection, decompression and combined surgical techniques [6]. Treatment aims to prevent or manage pathologic fracture, promote cyst healing, prevent cyst recurrence and re-fracture [7]. The treatment choice is individualized for each patient based on clinical and radiological features. If the SBC is picked up incidentally on roentgenograms in a patient with no symptoms, the bone is not at risk of pathological fracture. Nonoperative management is recommended with close follow-up. For patients in whom a pathological fracture has already developed in the upper extremity due to SBC, one can go with nonoperative treatment with immobilization [8, 9]. There are three factors to assess SBC healing: one clinical characteristic of pain and two roentgenographic features of cyst opacification and cortical thickening. Since our patient was skeletally matured, SBC was not suspected

Conclusion

Operative management is always a welcome move for symptomatic benign tumors like SBCs. SBCs are very rare after skeletal maturity, but we should remember that not all SBCs present to us early.

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