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Osteoid osteoma of base of coracoid process, a rare location. a case report and brief review of literature

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Abstract: Osteoid Osteoma is a little uncommon bony lesion. It rarely affects the scapula. Only a few cases are found in the literature. Even rarer is its occurrence at base of coracoids process. Osteoid osteoma of the base of coracoid process is a rare location. They may present simply as diffuse shoulder pain. Careful evaluation of the patient is important to diagnose this rare lesion. Clinical history is valuable, as well as the radiological investigations. Surgical treatment is definitive and rewarding. We are presenting a case of osteoid osteoma involving the base of coracoid process in a 12 year boy which was diagnosed clinico-radiologically and treated surgically by de-roofing and curettage of the lesion. The boy got complete relief of pre-operative symptoms.

Keywords: Osteoid Osteoma, Base of Coracoid Process, Scapula, De-Roofing

1. Introduction

Osteoid osteoma is a benign bone tumour. It was first described by Jaffe et al in 1935[1]. It mostly involves the long bones; flat bones are not commonly affected. Among the flat bones occurrence in pelvic bones are mostly reported [2,3,4,5]. Involvement of scapula is very rare; only a few cases are reported till date [6,7,8,9,10,11,12,13,14]. We report a case of osteoid osteoma of the base of coracoid process of scapula which is a very rare location. The lesion was treated by de-roofing and curettage by anterior approach. Complete relief of symptoms was recorded.

2. Case Report

A 12 years boy was presented to our outpatient department with a history of pain over the right shoulder over four months, with increase intensity at night. He did not remember any injury to the area. The pain was dull-aching and felt around the shoulder region, though he pointed that it was mostly over the anterior aspect. The pain used to reduce after taking NSAIDS. There was no swelling or redness over the area. The range of motion was normal except the terminal restriction with pain on external rotation. There was mild tenderness over the coracoid process anteriorly.

Figure 1. *X-ray; AP view.*

Figure 2. *X-ray; Axillary Lateral view.*

X-rays of the shoulder revealed a radio-lucent area at the base of coracoid process which was surrounded by sclerotic ream [Figure 1 & 2]. CT scan of the shoulder confirmed the lesion at base of the coracoid process which was measuring 4mm in diameter [Figure 3 & 4]. There was no intra articular pathology noted.

Blood parameters were within normal limits. Chest x-ray was also normal.

From the clinical history and radiological pictures the diagnosis of osteoid osteoma at the base of the coracoid process was made.

The lesion was exposed by anterior approach. This is essentially the proximal part of standard delto-pectoral approach. The area was exposed well with due care and the base of the coracoid identified. The overlying bone was found to be little irregular. De-roofing done superiorly and confirmed by image intensifier [Figure 5]. Thorough curettage was done and the material sent for histology. Histological picture of the curetted material was consistent with those of osteoid osteoma.

Post-operative CT scan confirmed thorough removal of the lesion [Figure 6].

The surgical wound healed well and the boy got rid of the symptoms [Figure 7]. He was followed up for six months and no recurrence of symptoms was there.

Figure 3. *CT scan 1*

Figure 4. *CT scan 2*

Figure 5. *Per-operative localization by C-arm.*

Figure 6. *post operative CT scan.*

Figure 7. *Healed scar*

3. Discussion

Osteoid osteoma is a benign bone tumour. It comprises 10%–12% of all benign bone tumors occurring predominantly in children and young adults and is commoner in males [15]. It involves mostly the long bones. Among the flat bones they mostly involve the pelvic bones. Involvement of the scapula as such is very rare. Only a handful of cases are reported so far in the literature. Base of the coracoid process is a very rare location for this tumour. It is one of the locations where diagnosis is a problem. Moreover their presentation may be different like synovitis and effusion shoulder joint [13]; capsulitis of the shoulder [14]; weakness around the shoulder which may mimic some neurological disorder [18]. Only consistent symptom is pain which is relieved by NSAIDs. Patients therefore used to present late. The night pain may also points towards rotator cuff pathology. But at this age group they are less likely.

X-ray picture is usually suggestive of a lytic lesion surrounded by sclerosis. The coracoid process is well visualized in axillary lateral view of the shoulder. CT picture is more reliable than plain roentgenogram.

MRI of the area gives more conclusive idea of the lesion. It clearly visualizes the lesion along with the peri-lesional reactions, marrow edema and synovitis.

Technetium-99 bone scan shows increased uptake. Bone scan is sensitive but less specific.

The treatment of osteoid osteoma consists of wide en-bloc resection of the lesion with surrounding bone. This can also be achieved by de-roofing of the nidus and thorough curettage. In case of long bones supplementary fixation is done after excision of the lesion. Percutaneous CT guided core drill excision or ablation of the lesion by radiofrequency, laser or absolute ethanol is also described [8].

In difficult location like base of the coracoids the lesion is approached from anterior or posterior aspect depending upon the exact location. Anterior approach has the risk of neuro-vascular injury because of the proximity of the brachial plexus and the axillary vessels. The approach is basically utilizes the proximal part of standard delto-pectoral approach. The base of the coracoid is exposed and de-roofing done superiorly. Excision of the lesion done and the cavity is thoroughly curetted. Supplementary fixation of the coracoid may be done with a cancellous screw [11].

Posterior approach does not carry the risk of neuro-vascular injury like the anterior approach. The glenoid is approached via the inter-nervous plan of infraspinatus and teres minor. A drill hole is made through the glenoid upto the base of coracoid process. The nidus is curetted through this hole [7].

Kelly et al. reported two cases of osteoid osteoma base of coracoid process which were removed arthoscopically using standard shoulder portals [12].

In our patient we preferred the anterior approach because of our familiarity of the delto-pectoral approach and relative superficial location of the lesion at the base of coracoid process.

Histologically the tumour consists of loosely intermingled nerve fibres in ground substances [16]. They mostly secrete prostaglandins which is the cause of pain. Moreover it explains its respond to NSAIDS [17].

Classically osteoid osteoma and the osteoblastoma present with similar symptoms. They differ one from the other by size of the tumour. The tumours with size greater than 1.5 cm diameter is regarded as osteoblastoma[15].

Recurrence of symptoms may be due to incomplete removal of the lesion. Follow up of the patient is important to detect recurrence.

4. Conclusion

Prolonged shoulder pain may be the sole symptom of an undiagnosed osteoid osteoma around the shoulder. Base of the coracoid process is a rare location for such tumour. Suspicion of the tumour and exclusion of other shoulder pathology has paramount importance in arriving at a

conclusive diagnosis. Excision of the tumour by suitable approach gives good clinical outcome.

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