An Unusual Location of Osteochondroma: Dorsal Scapula

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Abstract

Osteochondromas commonly affect the proximal humerus, pelvis, and knee but are rarely seen on flat bones. Herein, we present the case of a 15-year-old female patient with osteochondroma located at the dorsal aspect of the scapula. The patient was admitted to the Orthopedics and Traumatology Department with the complaint of a mass on the left upper back for five years. The patient complained of the inability to sleep in the supine position, pain with shoulder motion, and cosmetic discomfort for two years. X-rays of the left shoulder revealed a bony mass arising from the dorsal aspect of the left scapula. The patient underwent an operation, and a specimen was sent for histopathologic examination. The histopathologic investigation confirmed the diagnosis of non-malignant transformation osteochondroma. While osteochondroma is not common in the scapula, it should be kept in mind that the most common benign tumor of the scapula is osteochondroma.

Categories: Oncology, Orthopedics

Keywords: scapula, osteochondroma, dorsal, unusual location

Introduction

Osteochondroma is the most common type of benign bone tumor arising from the surface of a bone. Osteochondromas commonly affect the proximal humerus, pelvis, and knee but are rarely seen on flat bones [1]. However, the most common benign tumor of the scapula is osteochondroma [2-4].

Many cases of osteochondroma with ventral location causing pseudo-winging and snapping scapula have been reported in the literature [5-8]. In contrast to ventral location, there have been few reported cases of osteochondroma affecting the dorsal aspect of the scapula [9,10].

Herein, we present a case of osteochondroma located at the dorsal aspect of the scapula.

Case Presentation

A 15-year-old female patient was admitted to the Orthopedics and Traumatology Department with the complaint of a mass on the left upper back for five years. The patient complained of the inability to sleep in a supine position, pain with shoulder motion, and cosmetic discomfort for two years. She reported that there had been no growth in the size of the mass in the last three years. The patient did not have a history of trauma, family history, a history of osteochondroma in another region, weight loss, systemic signs, or any other known disease. On examination, a hard, oval solid mass was palpable with a size of about 6×4 cm on the superior-medial dorsum of the scapula (Figure 1). The mass was fixed, and the margins of the mass were prominent and they moved with the scapula. Abduction and extension of the shoulder were restricted and painful. There was no neurologic deficit in the upper limb. X-rays of the left shoulder revealed a bony mass arising from the dorsal aspect of the left scapula (Figure 2). A pedunculated mass was detected with a computed tomography (CT) scan on the dorsal aspect of the scapula (Figure 3). The patient was informed, and surgery for excisional biopsy was planned.

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FIGURE 1: A hard, oval solid palpable mass on the superomedial of dorsal scapula.

FIGURE 2: X-rays of the left shoulder revealed a bony mass arising from the dorsal aspect of the left scapula.

FIGURE 3: CT detected a pedunculated mass on dorsal aspect of the scapula.

Under general anesthesia, the patient was placed in the prone position. After cleaning the operation field with iodine, a sterile drape was applied. An incision was made over the mass. The soft tissues were dissected carefully and the borders of the mass were exposed (Figure 4). The peduncle was identified, and the mass was excised using an osteotome. The specimen was sent for histopathologic examination (Figure 5). The histopathologic investigation confirmed the diagnosis of non-malignant transformation osteochondroma. The cartilaginous cap was 2 mm. Non-steroidal anti-inflammatory drugs were ordered for pain relief. On the postoperative third day, the patient was discharged without any complications. After the operation, an arm sling was recommended for two weeks. Shoulder exercises were initiated after suture removal. At one-year follow-up, the patient's complaints had completely regressed and no recurrence was observed. The patient has given informed consent for the case report to be published.

FIGURE 4: Intraoperative appearance of the scapular osteochondroma.

FIGURE 5: The specimen was sent for histopathologic examination.

Discussion

Osteochondromas are benign tumors that commonly affect the proximal humerus, pelvis, and knee but are rarely seen on flat bones [1]. They are usually asymptomatic. While patients with osteochondroma of the dorsal scapula are admitted for cosmetic reasons and due to the inability to sleep in a supine position, the main reason for admission in cases of ventral scapular osteochondromas is often mechanical symptoms (snapping, pseudo-winging) [3,5,6,8]. In our case, the patient had pain and difficulty with sleeping in a supine position. X-rays are usually sufficient for diagnosis. CT scans are helpful to diagnose volar scapular osteochondromas.

There have been some cases of solitary osteochondroma of the scapula reported in the literature. In most cases, the affected side was the volar aspect of the scapula [2,3,5-8]. Symptomatic solitary osteochondroma is rare on the dorsal aspect of the scapula.

Nathan et al. [11] performed a retrospective review of all osteochondroma excisions at their institution from 1994 to 2007. They presented five patients with lesions arising from the ventral surface of the scapula, two patients arising from the dorsal surface, and one patient in the inferior acromion. No signs of recurrence were reported in seven patients at a mean 4.17 years postresection period (88%). A single patient with a recurrence underwent two additional surgical procedures.

Yadkikar and Yadkikar [12] presented a case of a dorsal scapular osteochondroma, where the patient complained of having difficulty sleeping in the supine position. Similarly, in a study by Salgia et al. [13], a patient was treated and was mainly concerned about cosmetic appearance.

In another case presentation, Jadhav et al. [10] presented two cases of osteochondroma. The first case was located at the dorsal aspect of the right scapula with a size of 3-4 cm. The patient was a 12-year-old male with a complaint of difficulty in sleeping in the supine position. X-ray of the scapula showed sessile swelling. The swelling was excised and at one-year follow-up, no recurrence was observed and the patient also improved symptomatically. Our case was a 15-year-old female who had the same complaints with a mass that had a size of 6×4 cm. The second case was located at the base of the first metatarsal.

Nekkanti et al. [9] presented two patients with osteochondroma on the dorsal surface of the scapula. The first patient was a 19-year-old male with complaints of discomfort while sleeping and moving his left shoulder for one year. Our case had similar complaints for two years. In the second case presentation, they reported a five-year-old male with swelling over the dorsal aspect of the left shoulder from birth. On physical examination, they detected a hard, oval bony swelling with a size of 1.5×1 cm. CT scan of the shoulder revealed a pedunculated osteochondroma. As in our study, both these cases were pedunculated osteochondroma.

Conclusions

Osteochondromas may cause different symptoms depending on their localization. While osteochondroma is not common in the scapula, it should be kept in mind that the most common benign tumor of the scapula is osteochondroma. Although osteochondroma is more common in the ventral region and causes clinical snapping scapula, the dorsal involvement of the osteochondroma may also cause clinical symptoms depending on the size of the mass.

Additional Information

Disclosures

Human subjects: Consent was obtained by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References

1. Unni KK, Inwards CY, Dahlin DC: Dahlin's Bone Tumors: General Aspects and Data on 10,165 Cases. Lippincott Williams & Wilkins, Philadelphia; 2010.
2. Rameez R, Ul-Hassan M, Kotwal HA, Kangoo KA, Nazir A: Painful pseudowinging and snapping of scapula due to subscapular osteochondroma: a case report. *J Orthop Case Rep.* 2016, 6:96-99. [10.13107/jocr.2250-0685.652](https://doi.org/10.13107/jocr.2250-0685.652)
3. Sivananda P, Rao BK, Kumar PV, Ram GS: Osteochondroma of the ventral scapula causing scapular static winging and secondary rib erosion. *J Clin Diagn Res.* 2014, 8:3-5. [10.7860/JCDR/2014/8129.4335](https://doi.org/10.7860/JCDR/2014/8129.4335)
4. Tomo H, Ito Y, Aono M, Takaoka K: Chest wall deformity associated with osteochondroma of the scapula: a case report and review of the literature. *J Shoulder Elbow Surg.* 2005, 14:103-106. [10.1016/j.jse.2004.03.007](https://doi.org/10.1016/j.jse.2004.03.007)
5. Ermiş MN, Aykut US, Durakbaşı MO, Özel MS, Bozkuş FS, Karakaş ES: Snapping scapula syndrome caused by subscapular osteochondroma. *Eklemler Hastalıkları Cerrahisi.* 2012, 23:40-3.
6. Fukunaga S, Futani H, Yoshiya S: Endoscopically assisted resection of a scapular osteochondroma causing snapping scapula syndrome. *World J Surg Oncol.* 2007, 5:37. [10.1186/1477-7819-5-37](https://doi.org/10.1186/1477-7819-5-37)
7. Chillemi C, Franceschini V, Ippolito G, et al.: Osteochondroma as a cause of scapular winging in an adolescent: a case report and review of the literature. *J Med Case Rep.* 2013, 7:220. [10.1186/1752-1947-7-220](https://doi.org/10.1186/1752-1947-7-220)
8. Clarke DO, Crichlow A, Christmas M, et al.: The unusual osteochondroma: a case of snapping scapula syndrome and review of the literature. *Orthop Traumatol Surg Res.* 2017, 103:1295-1298. [10.1016/j.otsr.2017.01.019](https://doi.org/10.1016/j.otsr.2017.01.019)
9. Nekkanti S, Moogali A, Meka A, Nair M: An unusual presentation of osteochondroma on the dorsal surface of the scapula: a review of two patients. *J Orthop Case Rep.* 2018, 8:38-41. [10.13107/jocr.2250-0685.1098](https://doi.org/10.13107/jocr.2250-0685.1098)
10. Jadhav PU, Banshelkikar SN, Seth BA, Goregaonkar AB: Osteochondromas at unusual sites: case series with review of literature. *J Orthop Case Rep.* 2016, 6:52-54. [10.13107/jocr.2250-0685.376](https://doi.org/10.13107/jocr.2250-0685.376)
11. Nathan L, Frost Parada SA, Manoso MW, Arrington E, Benfanti P: Scapular osteochondromas treated with surgical excision. *Orthopedics.* 2010, 33:11. [10.3928/01477447-20100924-09](https://doi.org/10.3928/01477447-20100924-09)
12. Yadkikar SV, Yadkikar VS: Osteochondroma on dorsal surface of the scapula in 11 year-old child: a case report. *Int J Med Res Health Sci.* 2013, 2:305-308. [10.5958/j.2319-5886.2.2.006](https://doi.org/10.5958/j.2319-5886.2.2.006)
13. Salgia A, Biswas S K, Agarwal T, Sanghi S: A rare case presentation of osteochondroma of scapula. *Med J DY Patil Univ.* 2013, 6:13. [10.4103/0975-2870.114673](https://doi.org/10.4103/0975-2870.114673)