

Case Report

Unusual location of osteochondroma over the scapular spine in a 12-year-old boy: a rare case report

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ABSTRACT

Osteochondroma is the most common benign bone tumour, typically occurring in the metaphysis of long bones such as the distal femur, proximal tibia, and proximal humerus. Involvement of flat bones like the scapula is uncommon, and osteochondroma arising from the spine of the scapula is particularly rare. A 12-year-old boy presented with a gradually increasing swelling over the right upper back for one year without history of trauma or systemic illness. Clinical examination revealed a firm, immobile swelling measuring approximately 3×3 cm over the posteromedial aspect of the upper scapula with normal overlying skin and no neurovascular deficits. Shoulder range of motion was full and painless. Radiographs of the right shoulder demonstrated a well-defined bony outgrowth arising from the spine of the scapula. CT scan revealed a lobulated expansile bony lesion measuring 3.1×3.2×2.6 cm in the posteromedial aspect of the scapular spine extending toward the superior angle. MRI showed a cartilage-capped bony projection with continuity of cortex and medullary cavity and a cartilage cap thickness of approximately 5 mm, consistent with osteochondroma. The lesion was excised surgically through a posterior approach. Histopathological examination confirmed the diagnosis of osteochondroma. The postoperative period was uneventful, and the patient regained full shoulder function. Osteochondroma arising from the spine of the scapula is rare but should be considered in adolescents presenting with a painless scapular swelling. Complete surgical excision provides excellent outcomes and prevents recurrence.

Keywords: Osteochondroma, Scapula, Scapular spine tumour, Benign bone tumour, Case report

INTRODUCTION

Osteochondroma is the most common benign bone tumor, accounting for approximately 35-50% of benign bone tumors and 10–15% of all bone tumors.¹ It is characterized by a cartilage-capped bony projection arising from the external surface of bone with continuity of the cortex and medullary canal with the parent bone.² Osteochondromas most commonly arise from the metaphyseal regions of long bones, particularly around the knee joint.³ Involvement of flat bones such as the scapula is relatively uncommon, accounting for approximately 3-5% of cases.⁴ Among scapular osteochondromas, lesions are more

frequently reported on the ventral surface, often presenting with snapping scapula syndrome, pseudo-winging, or cosmetic deformity.⁵⁻⁷ Osteochondroma arising from the dorsal surface, particularly from the spine of the scapula, is extremely rare, with only a few cases reported in the literature.⁸⁻¹⁰ We present a rare case of osteochondroma originating from the spine of the scapula in a 12-year-old boy, successfully treated with surgical excision.

CASE REPORT

A 12-year-old male presented with a painless swelling over the right upper back for one year, which progressively

increased in size. There was no history of trauma, restriction of movements, or systemic symptoms such as fever or weight loss.

Clinical examination

On examination, a well-defined swelling measuring approximately 3×3 cm was noted over the posteromedial aspect of the right scapula, in the region of the scapular spine. The swelling had a smooth surface and was firm to bony hard in consistency.

It was fixed to the underlying bone, while the overlying skin appeared normal and was freely pinchable. There was no tenderness on palpation. Neurovascular status of the limb was intact, and shoulder range of motion was full and painless. No evidence of scapular winging or snapping was observed.



Figure 1: Clinical photograph showing swelling over scapular spine.

Radiological evaluation

X-ray: Revealed a pedunculated bony outgrowth arising from the spine of the scapula.

Ct scan: Confirmed a lobulated, well-defined expansile lesion (3.1×3.2×2.6 cm) arising from the posteromedial scapular spine extending toward the superior angle.

MRI: Imaging showed a cartilage cap thickness of approximately 5 mm with maintained cortico-medullary continuity and no evidence of soft tissue invasion. These findings were consistent with a benign osteochondroma, with no radiological features suggestive of malignant transformation.

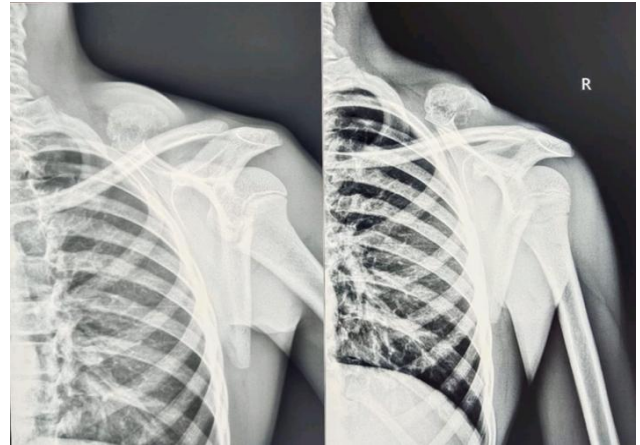


Figure 2: X-ray showing bony outgrowth.



Figure 3: CT scan showing lesion dimensions.



Figure 4: MRI showing cartilage cap.

Surgical management

The patient was positioned prone, and a posterior scapular approach was used. A skin incision of approximately 6 cm was made along the scapular spine.

Intraoperative findings

Intraoperatively, a pedunculated lesion arising from the scapular spine was identified. A clear plane was present between the lesion and the surrounding muscles, and there was no adherence to the adjacent neurovascular structures.



Figure 5: Intraoperative image.

Procedure

Muscle splitting was performed between the infraspinatus and teres minor muscles to expose the lesion. The lesion was then excised en bloc using an oscillating saw, and the base was smoothed with a bone nibbler. Complete removal was confirmed intraoperatively using C-arm imaging. The excised specimen was sent for histopathological examination.



Figure 6: Excised specimen.

Postoperative course+follow-up (added)

The postoperative recovery was uneventful. Sutures were removed on the 12th postoperative day, and gradual mobilization was initiated after two weeks.

Follow-up

At 3 months postoperatively, the patient had full range of motion with no pain. At 6 months, there was no evidence of recurrence clinically or radiologically. At 1-year follow-up, the patient remained asymptomatic with no functional limitation. Histopathology confirmed osteochondroma with hyaline cartilage cap and no atypia.

DISCUSSION

Osteochondroma is a developmental lesion rather than a true neoplasm, arising due to aberrant cartilage growth from the physis.¹¹ While commonly seen in long bones, scapular involvement is rare and usually affects the ventral surface.⁴ In contrast, dorsal scapular osteochondromas, particularly from the scapular spine, are extremely uncommon.

Similar cases have been reported by Mondhe et al and Nekkanti et al, but the incidence remains very low.^{1,7} Unlike ventral osteochondromas that present with snapping scapula syndrome, dorsal lesions are more likely to present as cosmetic swelling without functional impairment.⁷

Table 1: Clinical comparison with literature.

Parameters	Present case	Previous studies
Age (years)	12	Adolescents common ¹²
Location	Scapular spine	Mostly ventral scapula ⁵
Symptoms	Painless swelling	Snapping, pain in ventral lesions ⁶
Size	~3 cm	Variable
ROM	Normal	Often affected in ventral lesions

Imaging correlation

MRI is crucial to assess cartilage cap thickness. A cap thickness >1-2 cm in adults raises suspicion for malignancy.¹³ In our case, the cap was 5 mm, consistent with benign pathology.

Treatment comparison

Most authors recommend complete surgical excision to prevent recurrence and confirm diagnosis.¹⁴ Similar to

previous reports, our patient had excellent functional outcome with no recurrence.¹⁵

CONCLUSION

Osteochondroma of the scapular spine is an extremely rare entity that should be considered in adolescents presenting with a painless dorsal scapular swelling. Radiological evaluation, particularly MRI, is essential for diagnosis and to rule out malignant transformation. Complete surgical excision provides excellent functional outcomes with minimal risk of recurrence. This case adds to the limited literature on dorsal scapular osteochondromas and highlights the importance of recognizing atypical anatomical presentations.

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Ethical approval: Not required

REFERENCES

1. Mondhe A, Hakepatil R, Suryawanshi V. Osteochondroma of dorsal scapula: a rare case report. Asian J Orthop Res. 2025;8(1):32-8.
2. Raja KB, Rao KLJ. Osteochondroma of the scapula in a 12-year-old girl: an unusual case report. J Orthop Traumatol Rehabil. 2024;16(2):200-3.
3. Rengerla SB, Warade NR, Tiwari S. Sessile solitary osteochondroma at dorsal scapula: a case report. Int J Res Orthop. 2022;9(1):190-2.
4. Rahul P, Ravikumar TV, Grover A, Sudarshan K. Solitary osteochondroma of the scapula: a rare case report. Int J Med. 2014;2(2):84-6.
5. Ambulgekar RK, Jaiswal N, Kandolkar PG, Thakkar RD, Berlia R. A case report of a rare location solitary osteochondroma of scapula. Niger J Basic Clin Sci. 2015;12(2):126-8.
6. Pawar ED, Patel R. Rare presentation site for osteochondroma scapula and pelvis: case series. Int J Res Orthop. 2023;9(4):800-3.
7. Nekkanti S, Moogali A, Meka A, Nair M. An unusual presentation of osteochondroma on dorsal surface of scapula. J Orthop Case Rep. 2018;8(3):38-41.
8. Jindal V, Khandekar A, Gupta P, Binyala S. Solitary osteochondroma of the scapula in a young male: a case report. J Orthop Case Rep. 2022;12(7):34-7.
9. Borkar SS, Gowardhan AK, Kumar S. A rare case of pedunculated osteochondroma of the dorsal surface of scapula. Natl J Med Res. 2019;9(2):126-8.
10. Patel M. A case report: an unusual location of osteochondroma dorsal scapula. Surg Rev Int J Surg Trauma Orthop. 2023;9(1):1-5.
11. Shah R, Khambhati U. A rare case report of osteochondroma on dorsal surface of scapula. Int J Orthop Sci. 2019;5(2):948-50.
12. Kumar M, Jangir R, Berwal A, Muzahid M, Tailor RR, Dulhanani M. Dorsal scapular osteochondroma in a young male: a case report and literature review. J Orthop Case Rep. 2024;14(8):10-5.
13. Shinde MB, Patel MR, Gowda HK, Turukmane VD, Sharma AR. Osteochondroma of the distal humerus: a rare location. Indian J Case Rep. 2024;10(4):114-7.
14. Chouhan A, Kumar N, Aravinth M, Johri T, Dalvie S. Spinal osteochondroma: a rare cause of spinal compression – a case report and review of literature. Indian J Case Rep. 2026;12(2):71-4.
15. Jangir M, Yadav S. Osteochondroma on dorsal surface of scapula. Rajasthan Orthop Surg Assoc J. 2018;14(3):19-21.

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