International Journal of Research in Orthopaedics
Pawar ED et al. Int J Res Orthop. 2023 Jul;9(4):800-803
http://www.ijoro.org

DOI: https://dx.doi.org/10.18203/issn.2455-4510.IntJResOrthop20232004

Case Series

A rare presentation site for osteochondroma scapula and pelvis, intramembranous ossifying bones of axial skeleton: case series

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Received: 09 October 2022
Accepted: 01 December 2022

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ABSTRACT

Osteochondroma is the most common primary bone tumour comprising over 33% of benign bone tumours. The formation of osteochondroma occurs because of exophytic protuberance on the surface of growing bones. The most common sites for osteochondroma are the distal femur, proximal tibia, and proximal humerus. We are presenting a case series of three patients with rare presentation sites of osteochondroma, scapula and pelvis. Osteochondroma is primarily disease of appendicular skeleton but we are reporting it in axial skeleton. Radiographic findings include fluffy cartilaginous outgrowth arising from the external surface of a long tubular bone that may be pedunculated or sessile. Osteochondromas usually develop in bones that develop by enchondral ossification and rarely develop in bones developing by intramembranous ossification like pelvis. These tumours are usually asymptomatic but can cause pubic visceral compression or neurovascular compromise by compressing external and internal iliac vessels and lumbosacral pluxes. Scapular osteochondroma can cause compression or neurovascular compromise in thoracic cavity and axillary vessels and brachial pluxes. Treatment with surgical excision gives consistent results and relief of pain.

Keywords: Axial skeleton, Pelvis, Scapula, Membranous ossifying bone, Osteochondroma

INTRODUCTION

Osteochondroma is the most common primary bone tumour comprising over 33% of benign bone tumours.[1] It comprises 12% of the total benign tumour. The formation of osteochondroma occurs because of exophytic protuberance on the surface of growing bones. Solitary osteochondromas (exostoses) are the most common benign bone disorders encountered. Its peak incidence is in the second decade of life.[2] The most common sites for osteochondroma are the distal femur, proximal tibia, and proximal humerus, bones from appendicular skelton.[3,4] We are presenting a case series with rare sites of presentation of osteochondroma at scapula and pelvis, no recent studies have been documented osteochondroma in these rare sites of axial skeleton. A sudden increase in size associated with pain are indicators of possible malignant transformation. Treatment with surgical excision gives consistent results and relief of pain.[5,6] Osteochondroma can arise as a solitary lesion or as part of an inherited condition known as multiple hereditary exostosis (MHE).[7] They can present either as a pedunculated or a sessile mass (latter being more common.[8] It usually affects bones that develop by enchondral ossification and rarely originates from bones that develop by intramembranous ossification such as the scapula, pubic ramus, clavicle, and ribs.[9] The etiology of the tumour is not fully understood, and the most accepted theory was hypothesized by Lichtenstein which suggests that periosteum had the pluripotential to give rise to chondroblasts or osteoblasts, and that osteochondroma results from metaplastic change in the periosteum.[10]

CASE SERIES

Case 1

A 19-year-old boy presented with swelling over back since 2 years. Swelling was insidious in onset gradually

progressed to current size of approx. 5×5 cm over the left scapula posterior outer aspect. Swelling is bony hard in consistency, non-fluctuant, no redness, no local rise of temperature, normal looking skin over the swelling, without any sinus opening, no other obvious involvement of other system. CT scan was done to confirm the diagnosis and plan the treatment. Excision of the bony growth done for cosmetic reasons with cauterization of base of osteochondroma and osteochondroma confirmed on histopathology.

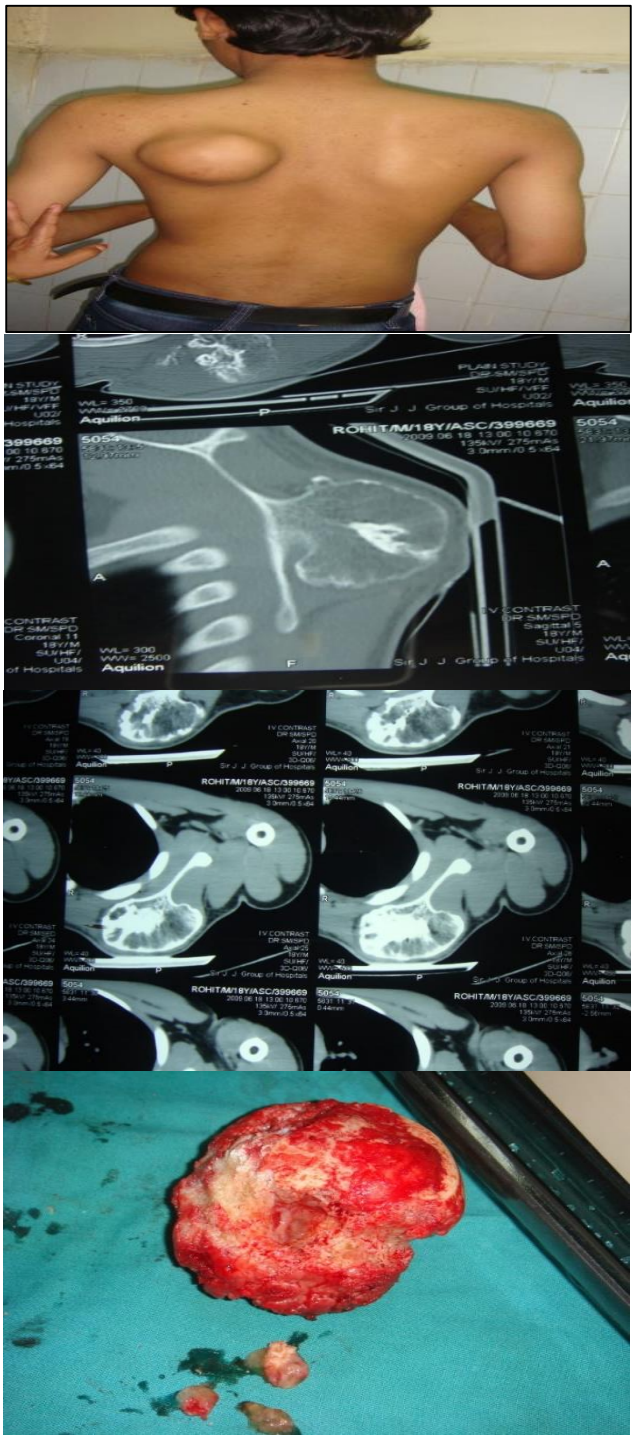

Figure 1: Case 1.

Case 2

A 12-year-old girl presented with swelling over the back since 1 year. Swelling was insidious in onset gradually progressed to current size 1.5×1.5 cm over medial border of right scapula. Swelling is firm in consistency, no local rise of temperature, no redness, no transillumination or fluctuation, CT scan was done to confirm the diagnosis and plan the treatment. Excision of the bony growth for cosmetic reasons with cauterization of base of osteochondroma and osteochondroma confirmed on histopathology.

Figure 2: Case 2.

Case 3

A 17-year-old male presented with swelling and pain over right gluteal region since 6 months. Swelling was insidious in onset gradually progressed to current size 6×6 cm. Swelling was firm in consistency, non-fluctuant, no redness, no local rise of temperature, normal looking skin over the swelling, without any sinus opening, no neurovascular damage, no other obvious involvement of other system. Pain was aggravated on laying down and relieved on standing. CT scan was done to confirm the diagnosis and plan the treatment. Excision of the bony growth done to avoid cumbersome in day-to-day activity with risk of compression on neurovascular structure with cauterization of base of osteochondroma and osteochondroma confirmed on histopathology.

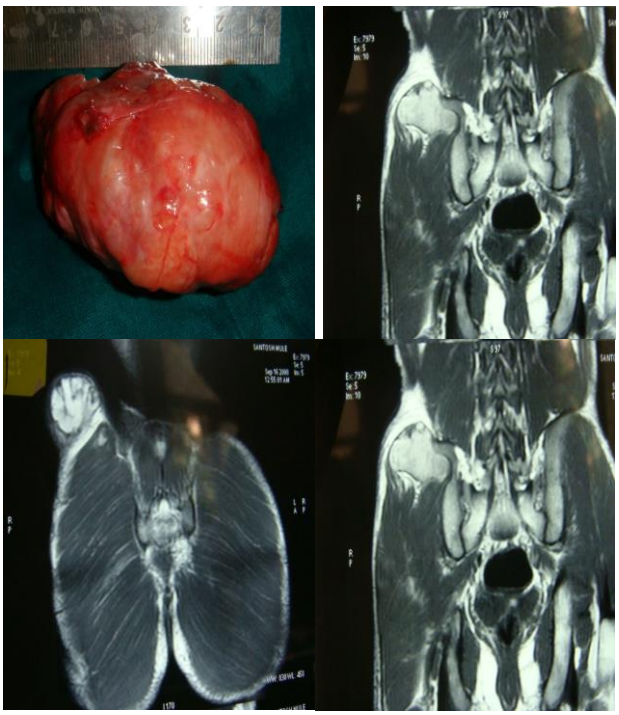

Figure 3: Case 3.

DISCUSSION

Osteochondroma is the most common benign bone tumour encountered.[11] Osteochondromas known as a developmental metaphyseal abnormality rather than a primary bone tumour. Metaphyseal end of long bones like femur, tibia, and humerus are its principal location.[12] This condition is typically asymptomatic and is discovered, incidentally. Clinical features of osteochondroma include a non-tender, painless, slowly growing mass.[13-15] Radiographic findings include fluffy cartilaginous outgrowth arising from the external surface of a long tubular bone that may be pedunculated or sessile. There are some complications associated with osteochondroma including nerve or vascular injury, bursa formation, the configuration of a pseudoaneurysm, and malignant transformation. The frequency of malignant degeneration is approximately 1% for solitary type and 5-25% for hereditary multiple exostoses.[15] Osteochondromas usually develop in bones that develop by enchondral ossification and rarely develop in bones developing by intramembranous ossification like pelvis.[9] Recently, Nekkanti et al reported a case of sessile osteochondroma arising from iliac wing.[16] A cadaveric case report of osteochondroma arising from pubis was given by Nayak et al.[17] Osteochondromas cause symptoms only when they become large enough to cause a mass effect and compression of nearby structures. Review of recent literature shows that compression of lumbosacral nerve roots is common with pelvic osteochondromas.[16,18] Scapula being the rare presentation site for osteochondroma. We are presenting a case series with rare sites of presentation of osteochondroma at scapula and pelvis, no recent studies have been documented osteochondroma in these rare sites. Osteochondroma at pelvis has increased risk of compression of external and internal iliac vessels and lumbosacral nerve roots, trunks and branches. Scapular osteochondroma on lateral border of scapula has risk of compression of axillary vessels and branches of brachial pluxes. Growing osteochondroma at scapula and pelvis needs early detection to avoid compressive effect on surrounding neurovascular bundle, and surgical resection of the same osteochondromas needs skilful surgical dissection and intervention as they are in proximal vicinity of important neurovascular structures.

CONCLUSION

We report these cases due to their unusual sites of presentation. These tumours are usually asymptomatic but can cause pubic visceral compression or neurovascular compromise by compressing external and internal iliac vessels and lumbosacral pluxes. Scapular osteochondroma can cause compression or neurovascular compromise in thoracic cavity and axillary vessels and brachial pluxes. These are usually operated due to cosmetic reasons with a very low incidence of recurrence. A sudden increase in the size of tumour with associated pain should raise a suspicion of malignant transformation. Early detection with CT scan is recommended to evluate and decide on further plan of treatment.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Pawar ED, Patel R. A rare presentation site for osteochondroma scapula and pelvis, intramembranous ossifying bones of axial skeleton: case series. Int J Res Orthop 2023;9:800-3.