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Parosteal Lipoma of the Forearm: A Case Report

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Abstract

There are few reports of parosteal lipomain the literature. Because of its invasive characteristics, this neoplasm may be mistaken as a liposarcoma. Although image exams help in the differential diagnosis between benign and malignant lipomatous lesions, the histopathological exam is the only definitivediagnostic tool. Enblockexcisionof the lesion is essential because the recurrence rate without complete excision may be as high as 62.5 %. A patient with a parosteallipoma located in the forearm is presented along with the mentioned treatment.

Keywords: *Parosteallipoma, Hyperostosis, ulna.*

Introduction

Lipomas are the most common benign soft tissue tumors that are composed of mature adipose cells without cellular atypia. [1, 2]. Although lipomas are common, osseous lipomas are rare. Bony lipomas, according to their site of origin have been broadly divided into two groups: i) those arising within bone (intraosseous), and ii) those on the surface of the bone (juxtacortical). Juxtacortical lipomas are further subdivided into parosteal and sub-parosteal lipomas [3, 4]. Parosteal lipomas some time induce a periosteal reaction. They are very rare benign lipomatous neoplasms located adjacent to the periosteum of an underlying bone usually affecting mainly adults aged over 40 [5, 6, 7]. The most frequently affected sites are the diaphysial and metaphyseal regions of long bones. The intramuscular lipoma is a benign, mesenchymal neoplasm. They are slow growing tumorscomposed ofmature adipose cells permeated in a skeletal musculature, with invasive characteristics. Despite its benign nature, it can be misdiagnosed as a malignant tumour, especially a well-differentiated lipoma-like liposarcoma.We reported a case of parosteal type lipoma of ulna.

Case Report

A 47-year-old man presented to family care physician with a complaint of right forearm pain and swelling a few months ago. He reported mild discomfort in the area but otherwise full range of motion at forearm. There was no history of trauma. The patient was referred for venous duplex sonography of right upper limb to access pain and swelling of right forearm. The examination found no evidence of deep venous thrombosis. The patient was then referred to our orthopaedic department. On physical examination,there was a mass over the posterior aspect of forearm, which was soft to firm onpalpation. There was minimal tenderness associated with that mass (Fig. 1). The overlying skin was normal. There was no neurovascular compromise and strength was normal. X rays of Right forearmfig1 (a,b) was done which showed a radiolucent well defined soft tissue lesion along the proximal ulna associated with focal cortical thickening. MRI of Right forearmfig (2,3)with contrast was done which showed awell-defined lobulated lesion measuring about 39 x 30 x 30 mm. The mass shows high signal intensity on T1 and T2 images with complete loss of signal intensity with fat enhancement. There was no post contrast enhancement. There was no periosteal thickening as well as local invasion to suggest it as aggressive tumour. So the MRI findings were consistent with Parosteal lipoma.

The patient was planned for excision under General anesthesia. An approximately 6 cm long longitudinal skin incision was made on the dorsal aspect of ulna,

exposing the mass fig4 (a) that was carefully dissected and resected en-bloc from the surrounding tissues and periosteum fig4 (b).The specimen fig 4(c) was sent to histopathology that showed sheets of mature adipocytes with peripheral nuclei covered by a thin layer of fibro - collagenous capsule indicative of a lipoma. There was no evidence of granuloma and malignancy. One year postoperatively the patient had full range of motion and no numbness along the forearm.

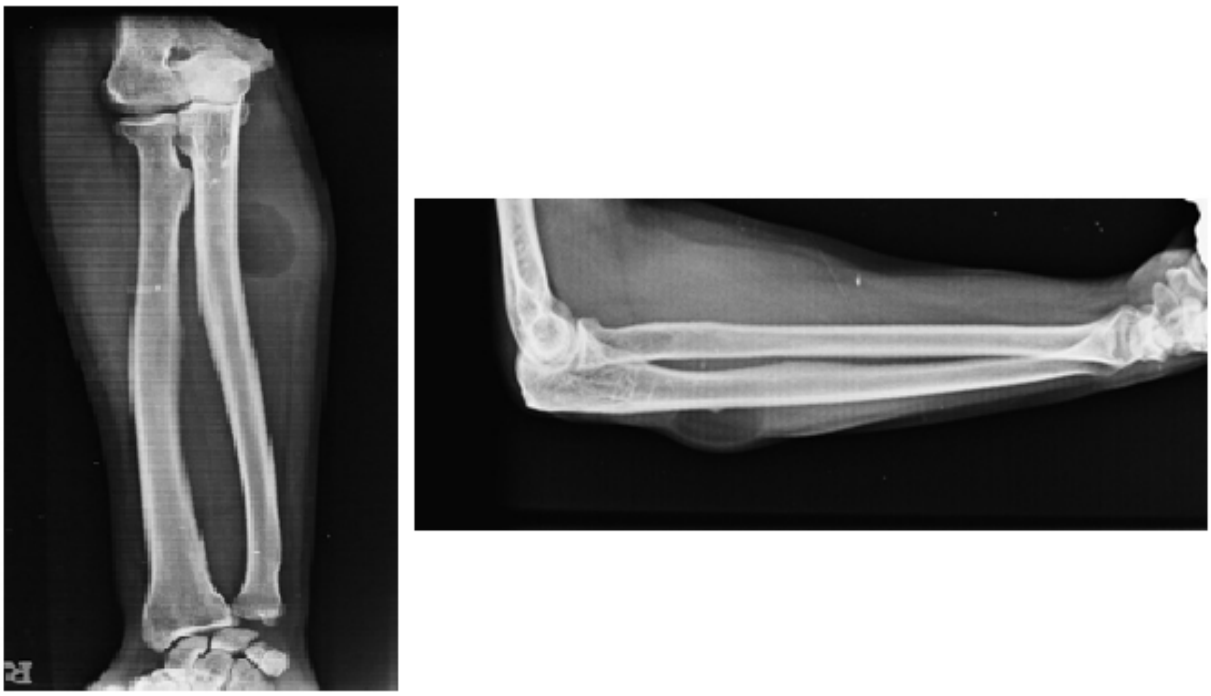

Fig 1(a,b). *Radiolucent well defined soft tissue lesion along the proximal ulna associated with focal cortical thickening.*

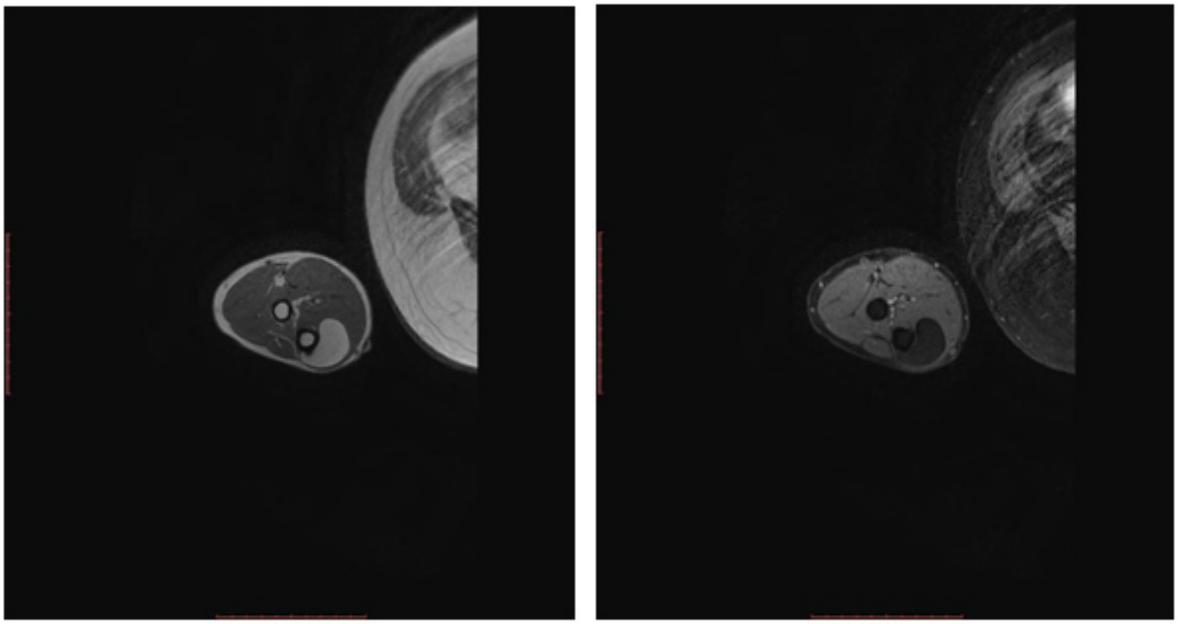

Fig 2. *MRI axial **(a)** T1W and **(b)** T1W post contrast images with fat suppression shows complete suppression of internal signal intensity without any signal heterogeneity or post contrast enhancement. Focal cortical thickeneing is also evident.*

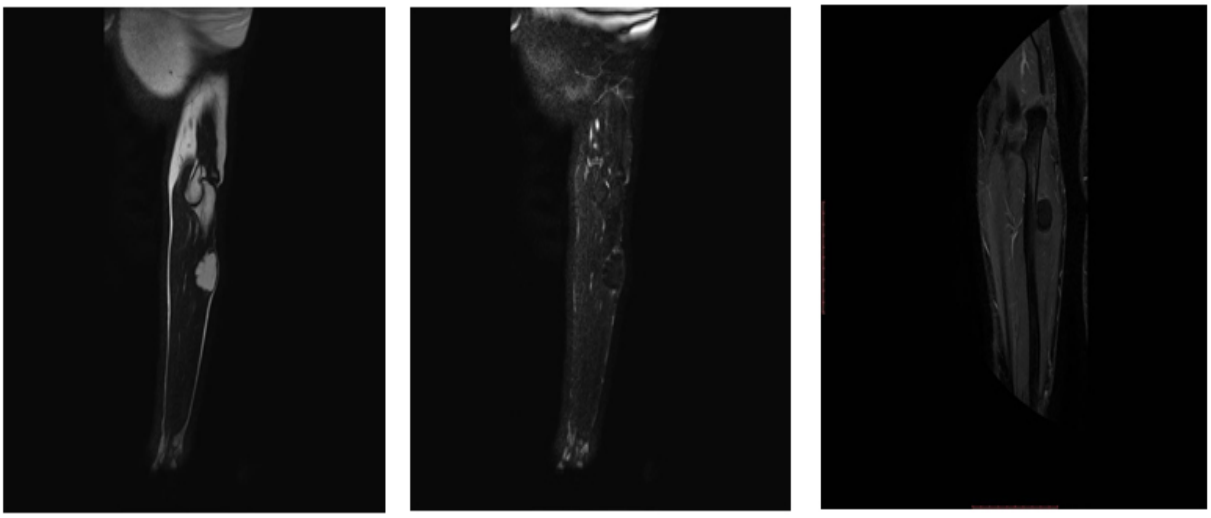

Fig 3. *MRI sagittal **(a)** T2W, **(b)** T2W fat suppressed and **(c)** T1W post contrast fat suppressed shows the lesion flushed against the ulna with homogeneous loss of signal on fat suppression images. No muscle or bone marrow involvement is seen.*

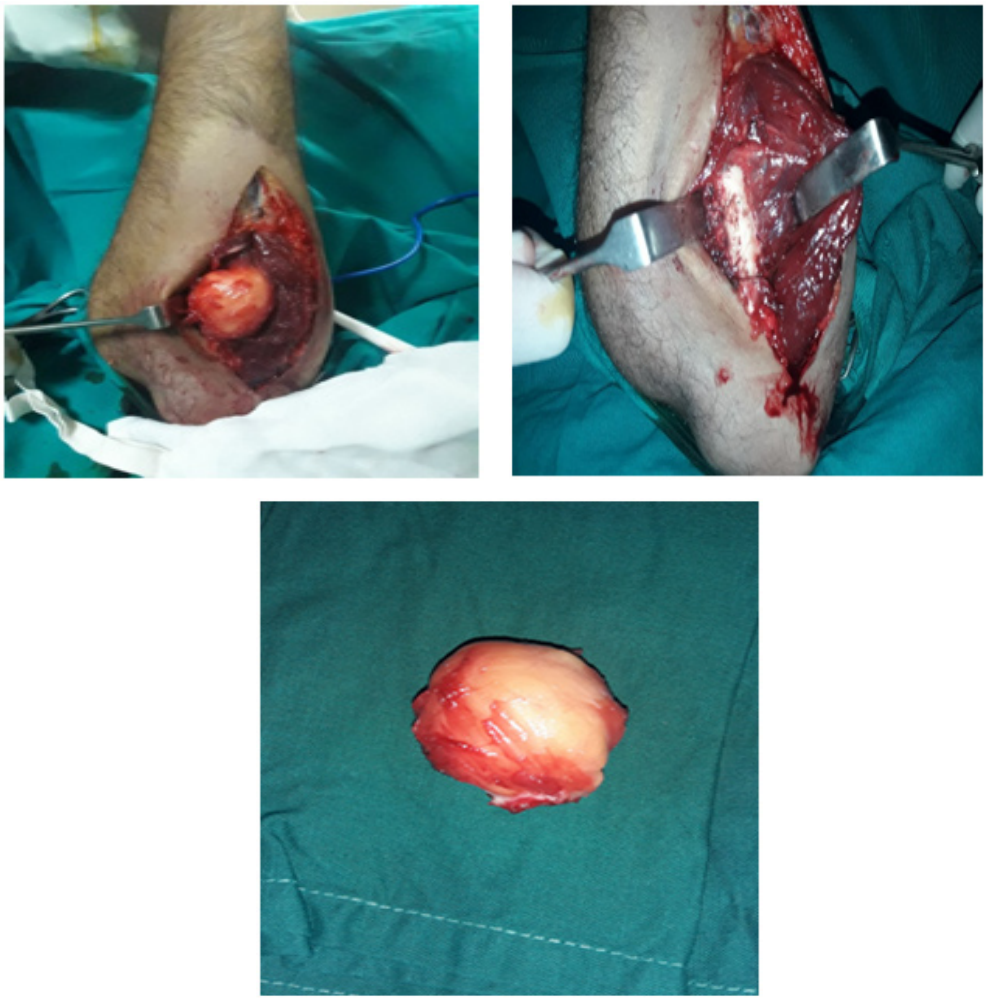

Fig 4. ***(a)*** *Lesion between the substance of flexor carpi ulnaris muscle **(b)** Mass removed enblock showing intact perisosteum of ulna **(c)** Specimen*

Discussion

Compared to superficial soft tissue lipomas, deep-seated soft tissue lipomas are less frequently encountered in clinical practice. Usually, they occur in the extremities and do not have as characteristic of clinical presentation as subcutaneous lipomas. They can grow around the muscles or can originate inside the muscle kissing the bone.The term 'parosteal lipoma', which was introduced by Power in 1888, is still used to denote the fatty tumor having contiguity to periosteum [5, 6]. It is amongst the rarest neoplasm of the bone, accounting for less than 0.1% ofprimary bone tumors and 0.3% of all lipomas. It affects, almost exclusively, adults over40 years, of either sex [7, 8]. The most common sites of parosteal lipomas are in the thigh in proximity to femur or inthe forearm adjacent to the radius. They have also been reported in the tibia, fibula, scapula [9], clavicle, ribs, pelvis [10], metacarpals, metatarsals, mandible and skull. Here, we have a male of 47 years presenting with parosteal lipoma of ulna.

The bony reactions may produce bone deformity, cortical erosion, and hypererostosis. [7]. Parosteal lipoma can be further divided into four types according to the presence and characteristic of the associated bone reaction Type I (without calcification), Types II (pedunculated exostosis), Type III (sessile exostosis) and Type IV (chondro-osseous modulation) [11,12,13]. In our case the lesion was classified as Type I as the lesion was without calcification

Patients with parosteal lipomas usually present with a slowly growing, painless mass fixed to the underlying bones in the extremities but not to the overlying skin. Some time there is involvement of peripheral nerves due to pressue symptoms. Posterior interosseous palsy has been seen in periosteal lipoma involving the radius while common peroneal nerve palsy was seen when fibula was involved [5, 12,14]. Our patient presents with a palpable painless mass at the forearm, without neurological deficits.

Conclusion

Parosteal lipoma is an extremely rare benign tumor composed mainly of mature adipose tissue with a bony component. Clinical, radiological, and histological examination can help to reach the definitive diagnosis. As these soft tissue tumors are benign with an excellent prognosis and 'no' recurrence rate, proper diagnosis is essential for most effective treatment of the tumor.

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