Aegean Pathology Journal **1**, 19–21 (2004)
Available on line at http://www.epd.org.tr

Ossifying lipoma at the wrist

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Accepted for publication 05.01.2004

Background: Ossifying lipomas located in the hand are extremely rare.
Case: We describe a rare case of ossifying lipoma in a 46-year-old male, independent of bone tissue at the wrist. The mass was excised, and postoperatively, the patient's symptoms disappeared and no recurrence was observed at 6 months of follow-up.
Conclusion: The pathogenesis of osteolipoma may be due to neoplastic changes or reactive ossification, otherwise the treatment of choice does not differ.

Introduction

Lipomas are derived from mesoderm and are located in any part of the body that adipose tissue is normally present. Grossly, lipomas are encapsulated, bright, yellow and soft masses. Lipomas may also have different tissue components. These lipomas are called according to the coexisting tissues; such as angiolipoma, fibrolipoma and osteolipoma. Ossification in lipomas was first reported in 1959.[1] In contrast to the high incidence of lipomas, formation of cartilage and bone in lipomas is rarely seen. A variety of names have been given to these lesions such as ossifying lipoma, osteolipoma, chondroosteoblastic metaplasia.[2–4] Ossifying lipomas usually are located at the upper half of the body, particularly at the trunk and neck. The central nervous system (tuber cinereum, hypothalamus, sellar region) location is also frequent.[1,5–11] They are rarely reported in the oral cavity, in the hand and extremities.[1–3,10,12,13] Only three ossifying lipomas located in the hand have been reported in the literature.[3,13,14] We report an additional case of ossifying lipoma at the wrist.

Case Report

A 46-year-old male was admitted to our clinic with the complaint of an enlarging mass, which has been realized since 1970 at his right wrist. On physical examination a mobile mass with firm consistency was palpated at the volar aspect of his right wrist. AP and lateral radiogram revealed a calcified mass adjacent to

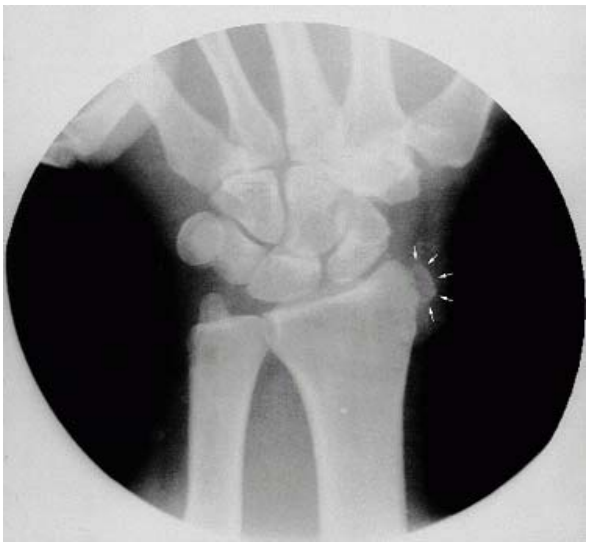

Figure 1. Calcified mass at volar aspect of the distal radius is seen at the radiograph.

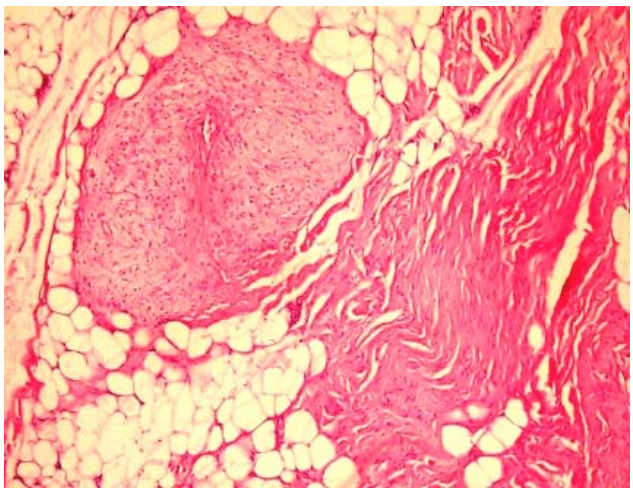

Figure 2. Mature adipose tissue is associated with nodules of benign mesenchymal cells (HE X40).

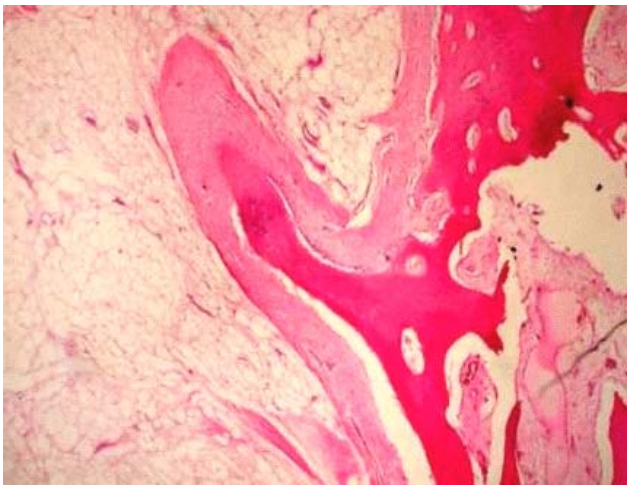

Figure 3. Trabecula of bone is surrounded by spindle cells between adipose lobules (HE X40).

the radial styloid, without adherence to the radius (Figure 1).

Excision of the yellow colored mass (4.3x2.5x1.3 cm) was done through a volar longitudinal incision. The mass was adjacent to the flexor carpi radialis tendon.

Macroscopically, it was firm and had heterogenous consistency, surrounded by a thin fibrous capsule. Specimen was decalcified and thin sections were prepared.

Histopathological examination revealed mature adipose tissue with compact cellular nodules. Each nodule was surrounded by undifferentiated spindle cells. In the deeper section of the tumor, there was hyaline cartilaginous tissue with partial enchondral ossification and calcification (Figures 2, 3, 4a and 4b).

Within the intertrabecular space of lamellar bone formation, there were no haematopoietic cell islands. No cellular atypia or increased of mitotic figures were observed. These findings led us histopathological diagnosis of benign ossifying lipoma.

Postoperatively, the patient's symptoms disappeared and no recurrence was observed at 6 months of follow-up.

Discussion

Lipomas with chondro-ossification are very rare and often located adjacent to the periosteum.[2,5] Parosteal lipomas are originated from adipose tissue and located at the surface of the bone and periosteum.[2,12] Sixteen of 23 cases with osteolipoma are in close relation with the bone tissue.[10] However, ossifying lipomas are also reported at the oral cavity, tuber cinereum, suprasellar region and in the connective tissue of head and neck region without attachment to the bone.[1,5–8,10,11] This tumor is very rarely seen at the wrist, three cases have been previously reported.[3,13,14]

Various hypotheses are put forward about the ossifying lipoma and bone relationship. These tumors appear to be of mesenchymal origin, which is derived from pluripotent cells then it may be called as benign mesenchymoma.[1,9,15] According to the second hypothesis, the bony component appears following the replacement of the fibroadipose tissue with the newly formed cartilage and bone tissue subsequently.[1,9,13] The adipose tissue undergoes a neoplastic transformation and the cartilage and bone is formed by the metaplasia of fibroblasts to chondroblasts or osteoblasts. Finally, bone forms within the cartilage.[9] Our histological findings such as mesenchymal foci and the long history of the tumor support the second hypothesis.

In contrast to the high incidence of lipomas, metaplastic formation of cartilage and bone are rarely seen. This metaplasia is thought to be due to the myxoid and chondroid change within the lipoma.[4] Osseous changes can be caused by mechanical trauma. Prolonged ischemia and special reactivity of the mesenchyme may lead to infarction, hemorrhage, calcification and ossification. A history of trauma has been described in a case with osteolipoma at radial

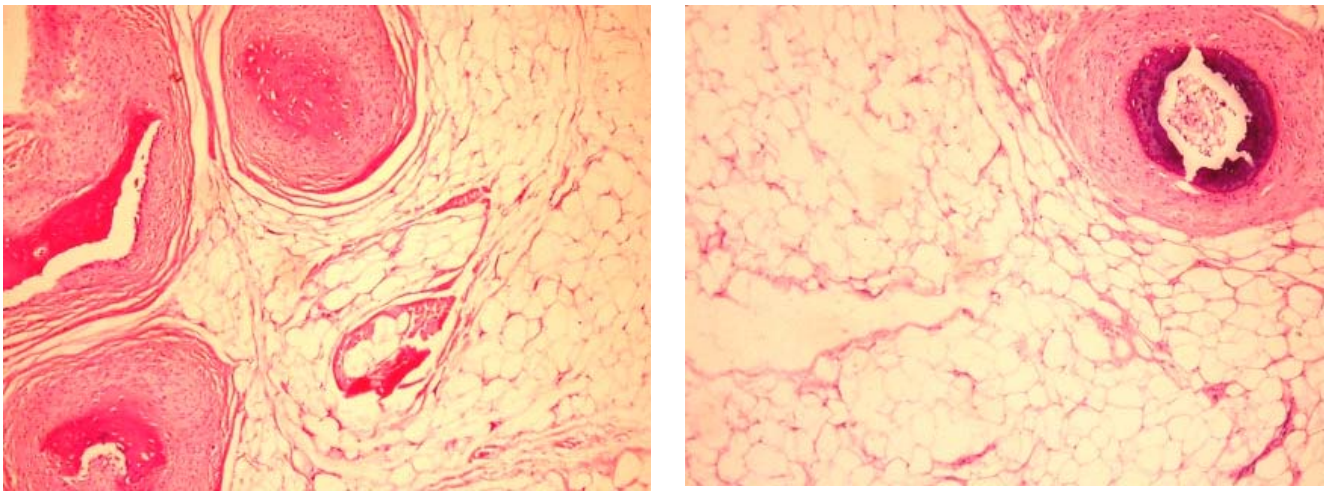

Figure 4 a, b. Mature adipose tissue showing foci of chondro-ossification (HE X100).

volar aspect of hand, in the present study there is no major trauma.[3]

Ossifying lipomas have been reported in middle-aged or elderly patients with a very long history even years.[1,2,5] Congenital malformations of bones, benign tumors containing bony tissue (teratomas, dermoid), secondary ossification due to trauma, liposarcoma with metaplastic changes should be considered in the differential diagnosis. Ossifiying lipomas especially parosteal lipomas may be confused with congenital bone anomalies.

Patients are usually asymptomatic and precise diagnosis and treatment could be done with excisional biopsy. Lipomas with osseous changes have the same prognosis as lipomas. The pathogenesis of the presented case is emphasized whether it is due to neoplastic changes or reactive ossification otherwise the treatment of choice does not differ.

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