

Ossifying Lipoma of the Hand: A Case Report

L C Teoh,**FAMS, M Med (Surg), FRCS (Glas)*, L K W Chan,***MBBS*, S H Lai,***MBBS*

Abstract

Introduction: Ossifying lipoma is an uncommon tumour and its occurrence in the hand is rare. It is often not diagnosed preoperatively. **Clinical Picture:** Our case presented with a lump in the hand which was painful with activity. The lipomatous component of the tumour was radiologically not distinguishable. **Treatment:** The hand was explored through a wide palmar incision, revealing a lipomatous tumour. The tumour was completely excised and diagnosis made after histological examination. **Outcome:** After 1 year, the patient has had normal function of the hand with no tumour recurrence. **Discussion:** The diagnosis of ossifying lipoma could be made with certainty only after radiological examination, excision and histological examination. The bony component is of mesenchymal origin and may come about as a result of metaplastic transformation.

Ann Acad Med Singapore 2001; 30:536-8

Key words: Ossifying lipoma, Osseous metaplasia, Lipomatous component, Metaplastic transformation

Introduction

Lipomata are one of the most common benign tumours in adults, occurring in almost any location of the human body, especially in the subcutaneous region. They are commonly found in the soft tissues of the neck, back and extremities.

Lipomata rarely undergo osseous metaplasia.¹⁻³ A literature search reveals only a few reports of ossifying lipoma over the past 50 years, and only two cases involving the hand were reported.^{4,5} We report a case of an ossifying lipoma of the hand, which was diagnosed after surgical exploration and confirmed histologically.

Case Report

Our patient, a 40-year-old homemaker, had a lump in her right hand for 3 years. It had slowly increased in size and recently became painful with activity. She had no history of significant trauma. Clinically she had an irregularly shaped hard tumour in the palmar aspect of her hand over the second metacarpal region. The tumour measured approximately 6 x 4 cm. It was not mobile and seemed to be fixed to the second metacarpal bone. The range of motion of the fingers was normal.

The plain radiograph of the hand showed a bony mass 2 cm in diameter with septations at the distal end of the second metacarpal bone (Fig. 1). The initial working diagnosis was that of a benign osteochondroma.

Treatment

During operation, the mass was found to be a well-defined lobulated lipoma, displacing the flexor tendons and neurovascular bundle towards the ulnar side (Fig. 2). The metacarpal was not involved. The tumour was excised carefully in one piece, and one section was found to contain bony fragments within the lipomatous lesion. (Fig. 3)

Microscopic examination of the tissue revealed a circumscribed lesion composed of lobules of mature adipocytes that merged into nodular areas of mature cartilage that surrounded bony trabeculae (Fig. 4). Areas of fibrosis were also present. The bony tissue showed trabeculae rimmed by osteoblasts, with the intertrabecular areas filled with fatty marrow (Fig. 5). There were no atypical nuclear features or lipoblasts present.

Outcome

She made a good postoperative recovery, regaining good functional use of the right hand in 2 weeks. She was contacted for a telephone interview 1 year after surgery. She was satisfied with the result of her surgery and had normal functional use of her operated hand. She had no recurrence of the tumour.

Discussion

Plaut et al⁴ in 1959 reported 5 cases of ossifying lipomata originating from the thigh, neck, groin and back in a

* Head and Senior Consultant

** Medical Officer

Department of Hand Surgery

Singapore General Hospital

Address for Reprints: Dr Lam-Chuan Teoh, Department of Hand Surgery, Singapore General Hospital, 1 Hospital Drive, Singapore 169608.

E-mail: ghtlc@sgh.com.sg

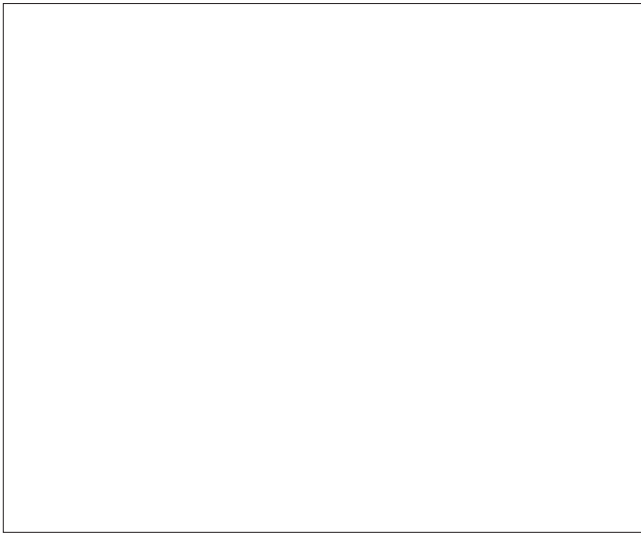


Fig. 1. X-ray showing the bony mass at the distal end of the second metacarpal bone in the right hand.

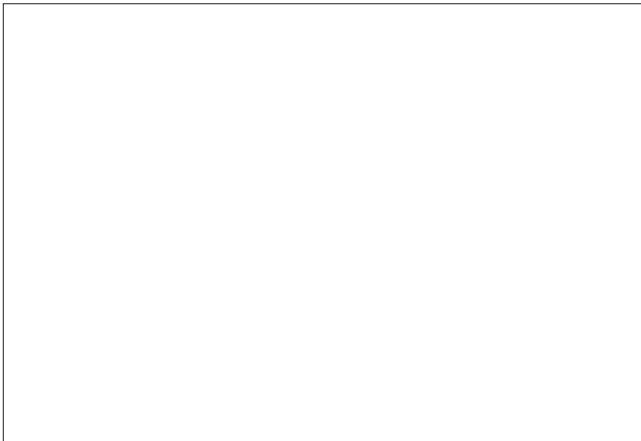


Fig. 2. The lobulated lipoma intraoperatively, showing the displacement of the adjacent tendons.

literature review. To these, they reported 3 cases of their own, one each in the thigh, forearm and hand. Subsequently, there are a few other reports of this tumour, including one found in the retropharyngeal region⁶ and another intracranially.⁷ The second case of this tumour found in the hand was reported by Tang et al in 1981.⁵ This was a congenital lipoma in the palm, which had repeated excisions, and manifested 8 years later with osseous changes. In our patient, there was no previous trauma or surgery.

An ossifying lipoma presents as a benign space-occupying lesion, firm to hard in consistency and give rise to pressure symptoms. Radiologically, the mass is translucent with irregular bony trabeculation and sharply demarcated from the underlying bone. Histologically, mature bone with areas of ossifying cartilaginous nodules is seen within the adipose tissue, either centrally or peripherally.

This tumour is of mesenchymal origin that had undergone osseous metaplasia.⁴ Recent work has suggested that blood-



Fig. 3. Bony collections can be seen within the lipoma.

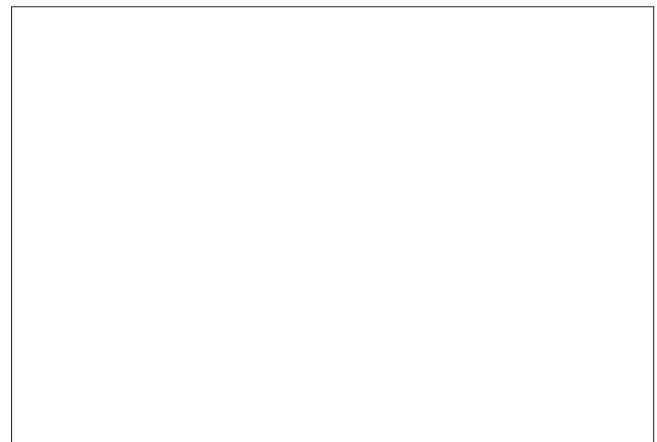


Fig. 4. A representative area of the lesion demonstrating adipose tissue merging into a nodular area of bony trabeculae surrounded by cartilage. (x20)

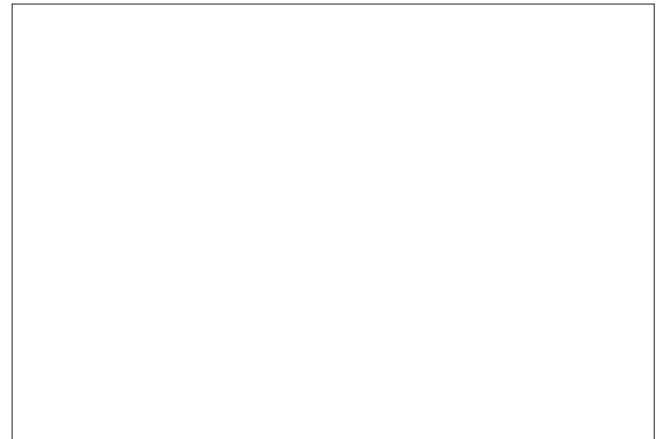


Fig. 5. Bony trabeculae seen adjacent to cartilage. (x40)

borne monocytes release factors that transform fibroblasts into osteoblasts.⁸ Bone then forms by membranous ossification.

The tumour does not arise from the adjacent bone and therefore, radiologically, there is no hyperostosis or pathological changes of the adjacent bone. It differs from a parosteal lipoma,⁹ which is situated directly on the bony

cortex beneath the periosteum, and shows pathological changes of the bone. It can also be distinguished radiologically from a tumoral calcinosis which has a denser pattern of calcification, and from myositis ossificans which has a typical diffuse ossification associated with a history of injury.³

In view of its rarity, this tumour may not be suspected preoperatively. In our case, plain radiographs showed well-circumscribed mature bone mass adjacent to the second metacarpal with no zone of lucency surrounding the ossification. The initial working diagnosis was that of an osteochondroma. As the clinical and radiological examination was clearly that of a benign non-vascular growth, surgical excision was proceeded without other imaging investigations. Computed tomography scan would have delineated the nature of the growth and may be recommended in future cases. Surgical excision results in a satisfactory outcome.

REFERENCES

1. Obermann E C, Bele S, Brawanski A, Knuechel R, Hofstaedter F. Ossifying lipoma. *Vir Arch* 1999; 434:181-3.
2. Hermann G, Rosen Y. Radiologic notes: Case no. 395, ossifying lipoma. *Mt Sinai J Med* 1977; 44:292-5.
3. Murphy N B. Ossifying lipoma. *J Radiol* 1974; 47:97-8.
4. Plaut G S, Salm R, Truscott D E. Three cases of ossifying lipoma. *J Path Bacteriol* 1959; 78:292-5.
5. Tang T T, Chamoy L, Meyers A, Babbitt DP, McCreadie SR. Congenital lipoma with ossification in the hand of a child. *J Pediatr Surg* 1981; 16:511-4.
6. Blanshard J D, Veitch D. Ossifying lipoma. *J Laryngol Otol* 1989; 103:429-31.
7. Wickremesekera A C, Christie M, Marks P V. Ossified lipoma of the interpeduncular fossa: a case report and review of the literature. *J Neurosurg* 1993; 7B:323-6.
8. Buring K. On the origin of cells in heterotopic bone formation. *Clin Orthop Rel Res* 1975; 110:293-302.
9. Miller M D, Ragsdale B D, Sweet D E. Parosteal lipomas: a new perspective. *Pathology* 1992; 24:132-9.