Scholars Journal of Medical Case Reports **ISSN 2347-6559 (Online)**
Sch J Med Case Rep 2015; 3(7):598-601 **ISSN 2347-9507 (Print)**

(An International Publisher for Academic and Scientific Resources) DOI: 10.36347/sjmcr.2015.v03i07.013

Infiltrating Angiolipoma around Ankle: A Case Report

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Abstract: Angiolipomas are benign adipocytic neoplasms with vascular structure, having all other features of a typical lipoma. They are commonly painful. Rarely these lesions may invade the contiguous bone, adjacent soft tissues and behave in an aggressive manner. They can occur anywhere, and are divided into infiltrating and non-infiltrating varieties. Non-infiltrating angiolipomas are seen in young individuals and are treated by simple enucleation. Infiltrating angiolipoma is a rare neoplasm and are usually non capsulated or rarely partially encapsulated and tend to infiltrate bony, neural, muscular and fibro cartilaginous tissues. We present a rare case report of infiltrating angiolipoma in a 17 year old female involving the ankle. The treatment of these lesions is predominantly surgical, although infiltrating tumours are difficult to excise completely.
Keywords: Angiolipoma, Infiltrating, Non infiltrating, Soft tissue neoplasm.

INTRODUCTION

Angiolipoma is a subcutaneous nodule with vascular structure, having all other features of a typical lipoma and constituting only 6-17% of all lipomas.[1] Benign lipomatous lesions are classified into nine distinct varients: lipoma, lipomatosis, lipomatosis of nerve, lipoblastoma or lipoblastomatosis, angiolipoma, myolipoma of soft tissue, chondroid lipoma, spindle cell lipoma and pleomorphic lipoma, and hibernoma [2]. Angiolipomas were first described by Bowen in 1912 [3], but were first established as a distinct entity in 1960 by Howard and Helwig [4]. They are commonly painful [5]. Sometimes the tumor may be more aggressive and invade the contiguous bone and adjacent soft tissues [6]. They can occur essentially anywhere, and can be divided into infiltrating and non-infiltrating varieties [7].Surgical excision is the treatment of choice for both infiltrating and non-infiltrating angiolipomas [8]. We describe a rare case of infiltrating angiolipoma around ankle in a 17 year old female.

CASE REPORT

A 17 year old female patient presented to the orthopaedic out patient department with history of swelling and pain over right ankle and foot for past 5 years. There was no history of trauma, fever, night cries or weight loss. The swelling was insidious in onset, slowly progressing to its present size of 5cm x 4cm. Pain was associated with the swelling since 1 year, which was slowly progressing in nature. The pain increased on walking and was reduced on taking rest and analgesics.

On local examination a lobulated swelling was seen around the ankle. The swelling was present below the medial aspect of right ankle and was extending to the medial aspect of right sole. The swelling was well defined, non compressible mobile and painful on palpation. The skin over the swelling was free and mobile.(Figure 1).

X ray of the ankle and foot did not reveal any significant abnormality. The blood investigations of the patient were within normal limits. Magnetic resonance imaging (MRI) of the right ankle and foot revealed a lobulated soft tissue mass at medial aspect of right foot and ankle approximately 38mm x 24mm in size. The lesion displayed low signal intensity on T1 weighted image and hyperintensity on T2 weighted image and STIR images. Quadratus plantae muscle and flexor retinaculum appeared to be involved by the lesion. The medial and lateral plantar nerves were not separately visualized. The possible diagnosis of nerve sheath tumor possibility of schwannoma was made based on the MRI features. (Figure 2).

The lesion displayed low signal intensity on T1 weighted image (Figure 2A) and hyperintensity on T2 weighted image and STIR images (Figure 2B). The lesion is seen extending into sole of foot (Figure 2C).

After taking anaesthetic clearance, the patient was posted for excision biopsy of the swelling. An incision is given over the swelling starting from lower fourth of tibia and extending upto sole of foot.

Meticulous dissection of the skin and soft tissue done to expose a yellowish fatty mass along the tendon of flexor hallusis longus. (Figure 3).

En block excision of the lobulated mass along with a rim of normal tissue was done after cauterizing the two feeding vessels which was encountered during dissection. (Figure 4A) The mass was sent for histopathological evaluation. The wound was closed in layers and the post operative period was uneventful.

The histopathological evaluation of the tissue comprised of mature adipose and proliferating vascular tissue. The blood vessels were thick-walled with collagen deposition which caused obstruction of their lumens. Few capillaries demonstrated fibrin thrombi. (Figure 4 B and C).

At 2 month follow up, the patient was asymptomatic with no local recurrence.

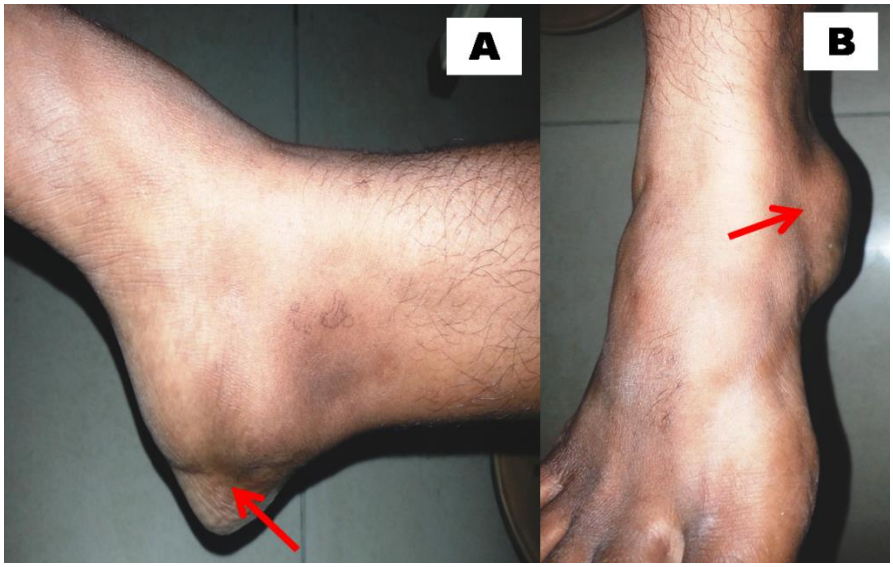

Fig-1: (A and B): Lobulated swelling present below the medial aspect of right ankle and extending to the medial aspect of right sole (Red arrow).

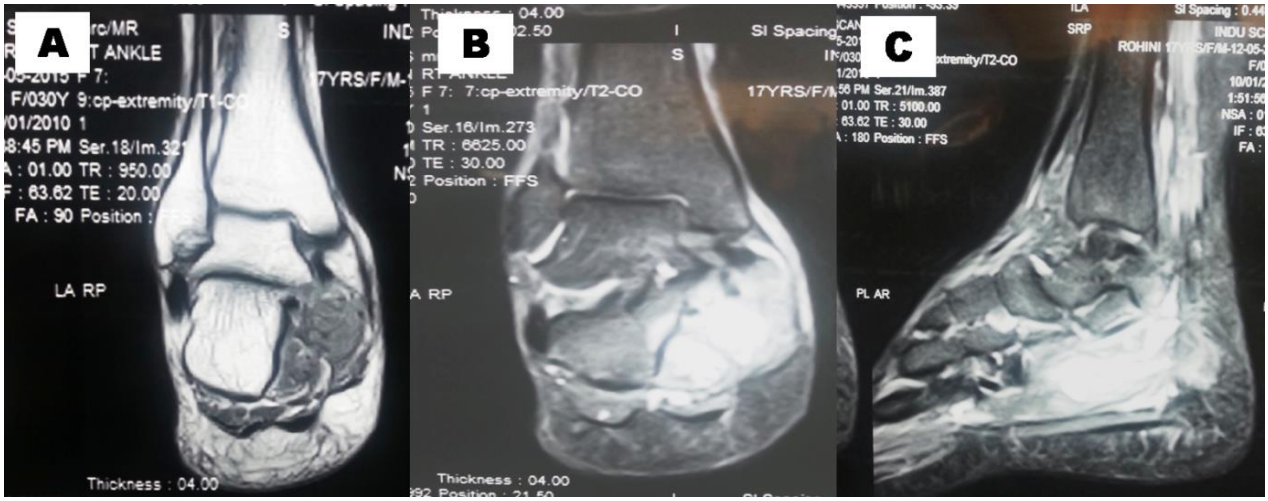

Fig-2 (A,B and C): Magnetic resonance imaging (MRI) of the right ankle and foot showing a lobulated soft tissue mass at medial aspect of right foot and ankle approximately 38mm x 24mm in size.

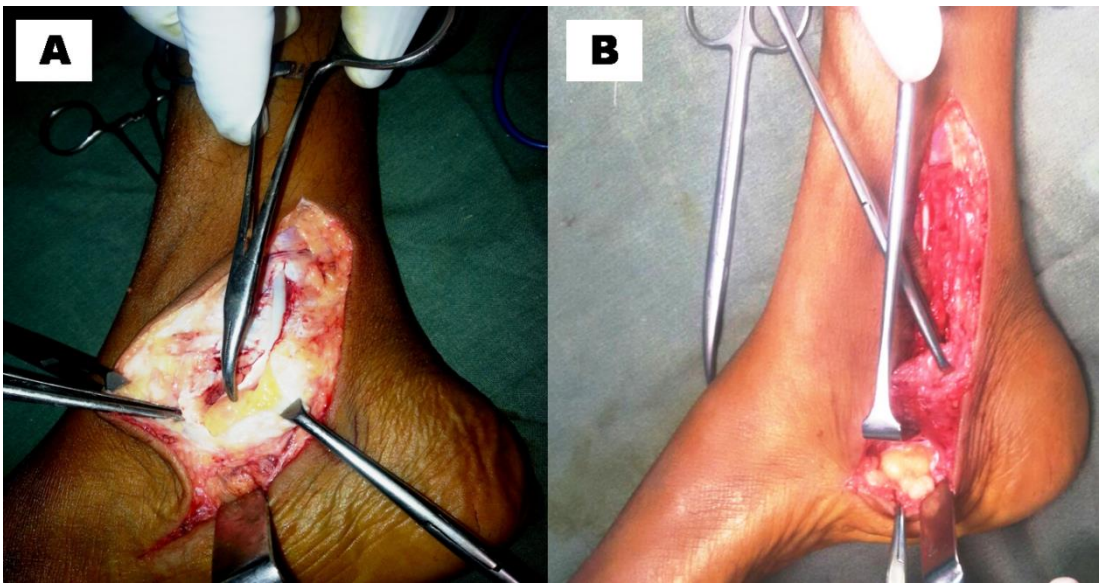

Fig-3 (Aand B): Intra-operative images showing a yellowish fatty mass along the tendon of flexor hallusis longus. (Figure 3A). The lesion is seen extending upto the sole of foot (Figure 3B).

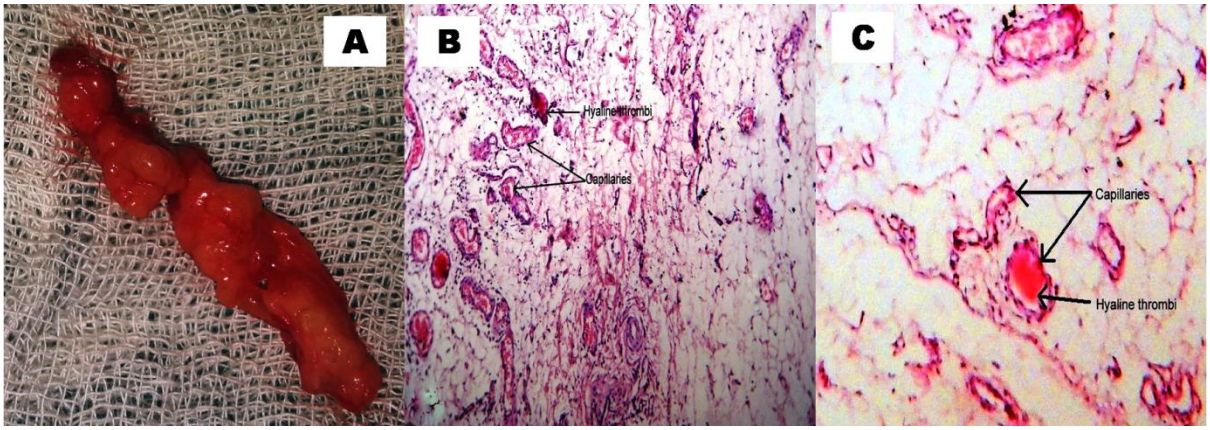

Fig- 4: 4A: Gross image of the lobulated, yellowish unencapsulated lesion. 4B: Histological section showing mature adipose tissue intervening capillaries and fibrous tissue. Few capillaries show hyaline thrombi. (magnification x 100; haematoxylin and eosin). 4C: Histological section showing mature adipose tissue and capillaries. A capillary is showing hyaline thrombi. (magnification x 400; haematoxylin and eosin).

DISCUSSION

The pathogenesis of angiolipomas is unknown. They may result from abnormal development of the primitive, pluripotential mesenchymal cells or may be hamartomatous in nature [9]. Other proposed etiology include fatty degeneration of a central hemangioma or vascular proliferation of a congenital lipoma [10,11]. Angiolipoma is a rare variant of lipoma and they occur in the extremities in the spinal axis and in the neck and head [6,9,10,12,13]. Only three cases occurring at the foot have been previously described [6,12,13]. The most common symptom is a constant, dull pain with associated neuropathies secondary to vascular engorgement and edema, which can lead to compression of the adjacent neural tissue [14,15]. Our patient also presented with pain that was exaggerated on physical activity and walking and relieved on taking rest and analgesics.

The diagnosis of angiolipoma can be aided by computed tomography (CT) or magnetic resonance imaging (MRI). MRI could be a useful tool to diagnose local areas of infiltration [6].In our patient, MRI detected a well-defined lobulated lesion with infiltration into adjacent tissues.

The diagnosis of these lesions is usually established on histopathology alone. Immunohistochemistry may be helpful in rare cases if histology is not helpful in the final diagnosis.

Based on studies by Dionne [16] and Lin [1], angiolipomas are subdivided into two histological types: infiltrating and non-infiltrating. Infiltrating angiolipomas are characteristically not encapsulated, and they infiltrate into surrounding tissue. In our case the mass was infiltrating into the Quadratus plantae

muscle and flexor retinaculum and hence a diagnosis of infiltrating angiolipoma was rendered.

The treatment of both infiltrating and non-infiltrating angiolipomas is total surgical excision. The infiltrating type of lesion is associated with more treatment difficulties. These lesions have been reported to recur after surgical excision in 35 to 50% of cases [16]. For non-infiltrating angiolipomas, simple excision is curative because these lesions have no tendency to recur following surgical removal. In our case an en block excision of the mass was done with a normal tissue rim around the mass.

CONCLUSION

Infiltrating angiolipomas are uncommon in the foot and present as slowly growing insidious swelling associated with pain. The diagnosis of these lesions is based on clinical examination along with radiology and histopathology. Though rare, these lesions must be considered in the differential diagnosis of tender swellings in the foot.

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