

# Infiltrating Angiolipoma: A Rare Benign Soft Tissue Neoplasm with Malignant Potential

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## Abstract

Angiolipomas are benign neoplasms of adipose tissue with a rich vascular component and are classified as infiltrating and non-infiltrating. Non-infiltrating angiolipomas are seen in young individuals, presents as painful, soft, subcutaneous nodules and are treated by simple enucleation. Infiltrating angiolipoma is a rare neoplasm with only 23 previously reported cases. The lesions are usually non capsulated or rarely encapsulate partially and tends to infiltrate bony, neural, muscular and fibrocartilagenous tissues. Treatment of infiltrating angiolipoma aims at wide local excision with radiotherapy indicated for cases of recurrence. A case study of infiltrating angiolipoma of a 10-year-old girl presented with symptomatic painful swelling over right lower one-third of the thigh on posterior aspect involving popliteal fossa, extending up to middle 1/3<sup>rd</sup> of leg causing discomfort while walking. Magnetic resonance imaging and histopathology confirm the diagnosis of infiltrating angiolipoma and treated with wide local excision.

**Keywords:** Angiolipoma, Infiltrating, Soft tissue neoplasm

## INTRODUCTION

Infiltrating angiolipoma is a benign lipomatous lesion that mainly occurs in the soft tissues and frequently presented in the extremities and the trunk in a locally aggressive manner.<sup>1,2</sup> The nature of these lesions was first documented in 1960 by Howard and Helwig<sup>1</sup> who reported a large series of cutaneous angiolipomas, described as small, painful, completely encapsulated subcutaneous nodules, which could be easily and completely shelled out. In 1974 Lin and Lin reviewed angiolipomas and divided them into infiltrating and non-infiltrating groups based on their biologic behavior.<sup>3</sup> Tumors with similar benign histology were capable of infiltrating into and between skeletal muscle planes.<sup>2,4,5</sup> They differ clinically and histologically from the pure primary angiomata of skeletal muscle. Here, we describe infiltrating angiolipoma of right lower extremity.

## CASE REPORT

A 10-year-old girl presented to our out-patient department with complaints of a progressively increasing painful subcutaneous swelling over right lower 1/3 of the posterior aspect of thigh involving the popliteal fossa causing little discomfort to the patient while walking since 6-8 months (Figure 1).

Ultrasonography (USG) reveals small hyperechoic lesions (Figure 2) and in color and power Doppler study multiple small vessels with predominant arterial flow are seen (Figure 3). Magnetic resonance imaging study of right leg shows a 13 cm × 4 cm, large, ill-defined intramuscular and inter-muscular lesion almost nearly replacing flexor compartment muscles at distal 2/3 of the thigh on right side showing extensive fatty tissues interposed between the vascular channels appearing hyperintense on T1W images (Figure 4). The vessels are draining into dilated superficial subcutaneous veins, short saphenous vein and popliteal vein. Histopathological findings consistent with angiolipoma showing a non-epithelial neoplasm made up of adipose tissues without any intervening septae deep to reticular dermis with several thin and thick walled capillaries interspersed in between the adipocytes (Figure 5). Our case was diagnosed and confirmed on the basis of histopathology, USG and radiological findings.

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## DISCUSSION

Lipomas are most common cutaneous soft tissue tumors and trunk and extremities are the most common sites. Angiolipoma is a variant of lipoma, with a prominent vascular component, constituting only 6-17% of all lipomas.<sup>3</sup> They usually present as painful or tender subcutaneous mass in young adults. Infiltrating angiolipomas can lead to muscular pain and neural deficits.<sup>1,3</sup>

Histological finding of our patient shows the tumor was infiltrating angiolipoma predominantly composed of mature adipose tissues with angiomatous infiltrations. Blood vessels often contain fibrin rich thrombi.<sup>1</sup> Infiltrating angiolipoma is a non-capsulated mass that tends to involve the deeper tissues.<sup>2,3</sup> Infiltrating is a non-capsulated mass that tends to involve the underlying plane.<sup>3</sup> Symptoms like muscle pain and neural deficit these characteristics.<sup>1,6</sup>

Surgical excision is the treatment of choice for both infiltrating and non-infiltrating angiolipomas.<sup>7</sup> Carbon dioxide laser and liposuction may be alternative options for treatment of single and multiple angiolipomas. In the present case we performed surgical excision. Wide local



Figure 1: Ill-defined subcutaneous swelling



Figure 2: Ultrasonography



Figure 3: Doppler study

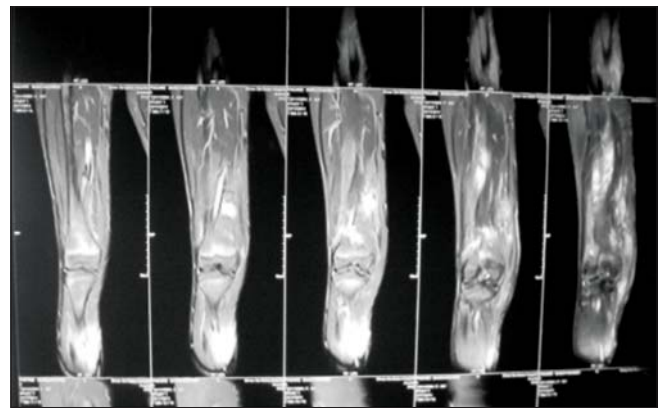


Figure 4: Magnetic resonance imaging

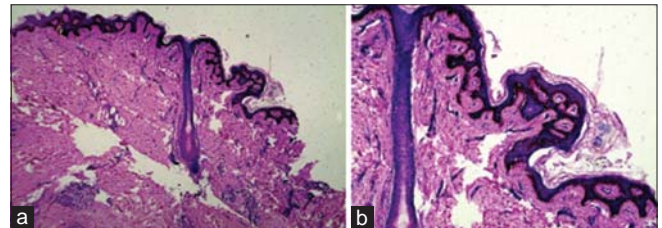


Figure 5: (a and b) Histopathological findings



Figure 6: (a and b) After wide local excision

excision, beta-blockers and interferon alpha has been successfully tried in many cases.<sup>5</sup> Our patient successfully treated with wide local excision (Figure 6a and b) and no recurrence after 3 years follow-up.

## CONCLUSION

The above case is reported due to its rarity, often misdiagnosis, long follow-up requirement and very infrequent literature documentations. Infiltrating angiolipoma has locally malignant potential that involves underline dipper planes leading to neuromuscular deficient features. Wild local excision is the treatment of choice for infiltrating angiolipoma.

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