

# Angioleiomyoma of the Plantar-Medial Arch: A Case Report

OMAR BAARINI<sup>1</sup>, MARK GILHEANY<sup>2</sup>

## ABSTRACT

An angioleiomyoma is a benign soft tissue tumour that arises from smooth muscle layer of blood vessels. The true aetiology of these masses is largely unknown and quite often may not be associated with pain. This paper illustrates the occurrence of an angioleiomyoma in the medial arch of the foot, a previously unreported location. Significant delay occurred in the patient being referred for specialist consultation, after attending numerous general practitioners for management. This highlighted the need for ongoing publication for case reports of this nature. The patient underwent excision with no recurrence of the lesion reported at 12 months. Often masses of this type may be left alone. However, when symptomatic simple excision will suffice where no other surrounding complication exists and where the mass is well encapsulated in the sub cutaneous area.

**Keywords:** Leiomyomas, Subcutaneous/soft tissue tumour, Vascular leiomyomas

## CASE REPORT

A 51-year-old fast food store owner presented with a 2-year-old asymptomatic and slowly growing mass in the right mid foot in the region of the medial arch. The mass was initially described as a painless subcutaneous soft tissue tumour about 20mm in diameter. The general practitioner did not advise surgery initially as the mass was well encapsulated and not causing any pain [Table/Fig-1].

The patient presented for Podiatric consultation for a second opinion. Of particular concern to the patient was the cosmetic appearance of the mass and the ongoing irritation in footwear. After clinical and radiographic assessment of the mass a decision to excise was made. Based on the imaging results full excisional biopsy was discussed with the patient and identified as suitable alternative to fine needle biopsy.

Clinical considerations in assessing the patient's suitability for surgery in this case included a medical history of long standing well controlled non-insulin dependent diabetes mellitus and hypertension. Recent HbA1c results, as well as neurological and vascular assessment indicated the patient's suitability for surgical excision of the tumour.

There was no history of previous trauma to the area. The patient was sent for X-ray and ultrasound. X-ray examination was insignificant, with no signs of any bone erosion secondary to mass pressure. Ultrasound examination reported a soft tissue tumour which was hypo echoic and hyper vascular in a well defined capsule. Reported diagnosis was fibroma or lipoma.

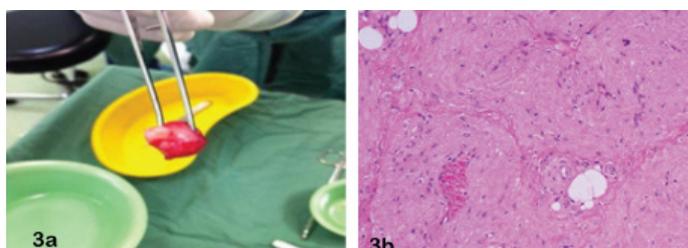
The mass was excised under mild sedation and a local anaesthetic block (10ml of 0.5% Bupivacaine); and was approached via a curvilinear incision proximal to the lateral border. Sub cutaneous blunt dissection with a small curved artery forcep was utilised, exposing a well circumscribed solid mass [Table/Fig-2]. This allowed for sharp dissection and clean extraction of the tumour. The wound was closed with 3/0 Monocryl.

The mass was sent for histopathology testing of which two transverse slices were processed. The results reported an encapsulated mass (23x15x15 mm) with margins marked. A section showed a nodular lesion with the periphery of the nodule surrounded by a thin rim of mildly compressed fibrotic tissue. Proliferating within the nodule were numerous thick walled blood vessels and smooth muscle bundles.

Scanty collections of adipocytes were also noted in neoplasm. The histopathology findings were consistent with Angioleiomyoma [Table/Fig-3a,b]. Healing proceeded without complication, and at 12 month review there was no evidence of regrowth.



[Table/Fig-1]: Encapsulated mass on mid foot. [Table/Fig-2]: Excision of tumour for biopsy.



[Table/Fig-3a,b]: (a) Mass identified as Angioleiomyoma. (b) Histopathology slide (Stain Haematoxylin & Eosilin with magnification X40) showing numerous thick walled blood vessels and smooth muscle bundles.

## DISCUSSION

Angioleiomyoma is a one of the three different forms of a leiomyoma, which may otherwise be known as vascular leiomyoma. These are uncommon and are categorized as a benign neoplasm that arise from smooth muscle layer of blood vessels [1,2]. They have been categorized histopathologically by a well-circumscribed dermal nodule surrounded by a compressed connective tissue and separated from it by clefts. Variable sized veins with muscular walls are present within the nodule and smooth muscle bundles extend tangentially from the periphery of the vessels. The lumina of

the veins is rounded or slit like and as a rule angioleiomyoma only contain a small amount of collagen [3]. They frequently occur in extra-skeletal sites which include the ovaries, uterus, bladder, lung, and the gastrointestinal tract [4]. Other forms of leiomyoma include piloleiomyoma which arise from arrector pili muscles; and genital leiomyoma which arise from smooth muscles of the scrotum, vulva, or nipple [5]. Angioleiomyoma are twice as prevalent in women as men and affect middle aged population mainly; however they can be found throughout the body in male and female adults of all ages [4]. Approximately 50-70% of all the Angioleiomyoma found are within the lower limbs [6]. These masses account for approximately 4.4% of all benign soft tissue tumours [7]. The aetiology of the formation of this tumour is unknown, however factors such as trauma, infection, hormones and arteriovenous malformations have been discussed [5].

Differential diagnosis includes lipoma, fibroma, ganglions, schwannomas, cutaneous angiomyolipomas, glomus tumours and others [5]. Arteriogram, or a Doppler study may be used to determine arterial and venous anatomy adjacent to the mass. The tumour is rarely diagnosed until it is excised and histopathological examination conducted [8,9]. Pre operative planning is aided and often depends on the multiple imaging modalities, especially ultrasound, and MRI [3-5]. Although such imaging as ultrasound and MRI allow for visualisation of the mass for excision, and are helpful with assessing for the hypervascular characteristics of the mass; they are not specific, and the final diagnosis depends on histopathological examination [8-11].

Pain is not always associated with the presence of an Angioleiomyoma. However, about 60% of patients do report some kind of pain, which includes pressure pain, sharpness or pinching, which may be affected by temperature [2]. It has been hypothesised that the pain may be associated with local tissue anoxia, or due to the compression of local neural structures [6,12].

Complications such as secondary calcification, myxoid degeneration, hyalinization and malignant transformation have been reported [4].

Simple excision and biopsy is often all that is needed [2,8-10]. The decision to proceed to surgery often depends on the size of the lesion and the severity of the symptoms [4]. Once excised, malignant

recurrence of the mass is noted to be extremely rare [13]. In cases of recurrence, it has been discussed that the new lesion should be removed widely and treated like other low grade malignancies [7,12].

## CONCLUSION

Angioleiomyoma is a relatively uncommon benign subcutaneous soft tissue mass that most often occurs in the extremities. Simple excision and histopathology is recommended, especially in cases where patients report pain or other difficulties associated with the protruding mass. Imaging can be of assistance in visualizing the mass and its surrounding structures prior to surgical excision. This report presented a case where this was evident with a successful outcome and no recurrence of the tumour.

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### PARTICULARS OF CONTRIBUTORS:

1. Senior Registrar, Australasian College of Podiatric Surgeons, Australia.
2. Fellow, Australasian College of Podiatric Surgeons, Australia.

### NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Omar Baarini,  
Senior Registrar, Australasian College of Podiatric Surgeons,  
PO BOX 248, Collins Street West Melbourne, VIC 8007, Australia.  
E-mail: obaarini@hotmail.com

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