CASE REPORT

Angioleiomyoma of the finger: A case report

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ABSTRACT

Angioleiomyomas are benign soft tissue tumours originating from smooth muscle cells of arterial or venous walls. We report a case of such a tumour in the finger of a 41 year old man. After excision, histopathologic and immunohistochemical studies confirmed the diagnosis. Angioleiomyomas should be considered in the differential diagnosis of soft tissue masses, keeping in mind that the clinical diagnosis of such lesions is often difficult and usually requires pathologic examination. A brief literature review is included.

Keywords: Angioleiomyoma, finger

Citation

T. Rosen Marinou, E.Moustou, T.B. Grivas, A. Zizi-Serbetzoglou. Angioleiomyoma of the finger: A case report. Scientific Chronicles 2014;19(2): 190-195.

BACKGROUND

Angioleiomyomas are relatively rare benign, solitary, smooth muscle tumours [1]. They are twice as common in women as men [2], presenting in the 4th to 6th decades of life, usually in the lower extremities [3]. The tumour forms a nodule that elevates the skin and is on average less than 2cm in diameter. There is no distinctive clinical presentation other than pain and/or tenderness, which is a complaint in approximately 60% of patients, due to irritation of the underlying nerves either mechanically or through mast cell mediation [3]. We report a case of an angioleiomyoma of the finger of a man. To the best of our knowledge this location is extremely rare.

CASE PRESENTATION

A 41yr old male truck driver presented with a nodule located on the palmar and radial surface of the base of the fifth finger of the left hand. (Fig.1) The nodule was believed to have existed for 4 months with slow, progressive growth.

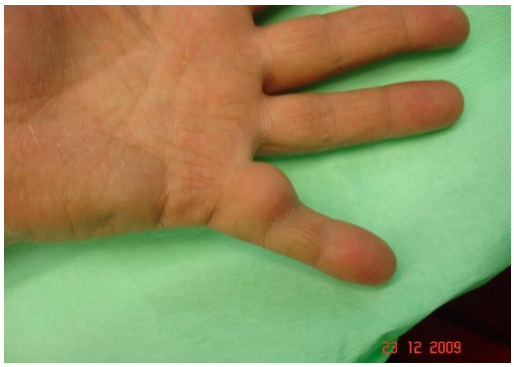

Figure 1. Pre-operative view of the tumour.

The patient's major complaint was difficulty in using the finger for work. The pain was exacerbated by gripping the steering wheel of his vehicle. There was slight limitation of movement of the finger. Upon physical examination a soft, non-fluctuant nodule was detected which was tender to palpation. No changes in the overlying skin were detected. Sensation in the distal finger was normal. The nodule was further investigated pre-operatively with radiological and MRI techniques.

Under local anesthesia, an L-shaped incision was made on the palmar l surface, extending distally along the radial side of the finger. (Surgeon TBG) The nodule was dissected from the skin with the aid of scissors. It was bound to the angioneurotic bundle on the radial side of the small finger. After being freed from the bundle the nodule was excised in full, revealing a kidney shaped tumor 2.5cm x1.5cm in size.(Fig.2)

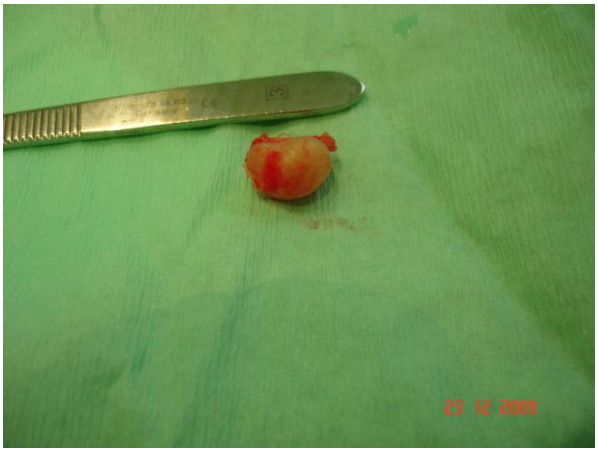

Figure 2. Macroscopic view of the tumour, after excision.

The skin was closed with 3/0 nylon sutures, which were removed after 15 days as the wound had satisfactorily healed.

Macroscopically the nodule was well circumscribed with an average diameter of 2cm, yellow and fairly firm. It was composed of small vessels with an apparent smooth-muscle thickening of their walls, in an edematous stroma with degeneration (Fig.3).

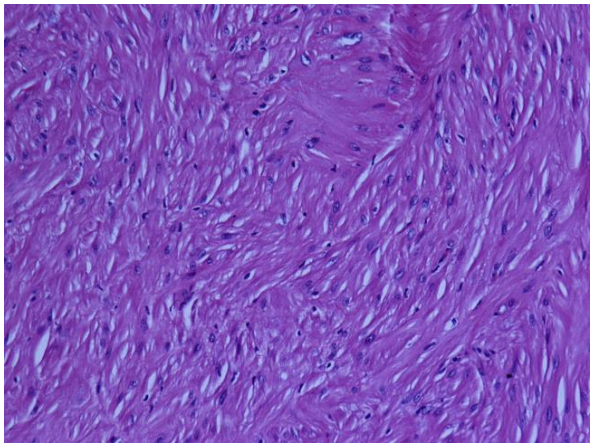

Figure 3. Tumour cells with H+E stain x200. The tumor consists of smooth muscle tissue punctuated with thick-walled vessels. The inner layer of muscle is usually arranged circumferentially and the outer layer blends with less well ordered smooth muscle tissue.

Immunohistochemically, the tumor cells were reactive for vimentin (+), desmin (+) (Fig.4), actin (+) (Fig.5), but not for S100p (-), which confirmed our diagnosis of angioleiomyoma.

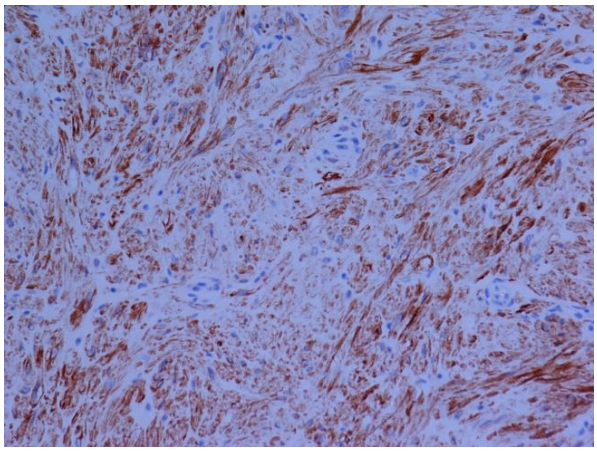

Figure 4. Tumour cells reactive for desmin (+), x200. Immunostain of an angioleiomyoma showing positivity of fascicles of spindle cells.

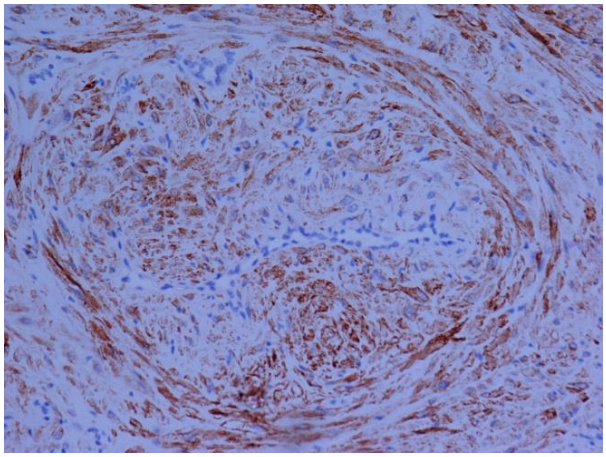

Figure 5. Tumour cells reactive for actin (+), x200. Immunostain of an angioleiomyoma showing positivity of fascicles of spindle cells.

At follow-up, the patient's little finger after 5 years is without any problem, (Fig. 6).

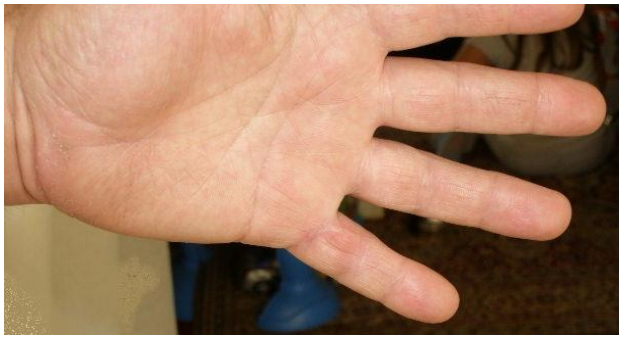

Figure 6. Clinical picture of the finger at follow–up after 5 years.

DISCUSSION

Angioleiomyomas, or vascular leiomyomas, were first described in 1937 by AP Stout [4]. Their clinical manifestations are limited to pain and/or tenderness in 60% of the cases, possibly due to local tissue anoxia or compression of a cutaneous nerve by the tumour. Pain is occasionally exacerbated by pressure, change in temperature, pregnancy [3,5]or menses [6]. Their size is up to 2cm in diameter in 80% of the cases, but cases of giant angioleiomyomas have also been reported [3,7]. Traumatic neuromas, glomus tumors, eccrine spiradenomas and angiolipomas constitute the classic five spontaneously painful nodules of skin and soft tissues [8].

There are no specific imaging techniques for angioleiomyomas [11], but MRI can better delineate the lesion and define its relationship with adjacent structures. Okahashi et al. used the ischemic test described by Hildreth for glomus tumours. This test is positive when a vascular component is discovered in a tumour and it might be useful in clinical practice [9,10].

These tumours occur more frequently in the lower extremities of women, while their appearance in the head, trunk or upper extremities is more common in men [3,7]. Reports of angioleiomyomas in the hand are rare and even more so in the finger. They account for 5-12% of all hand tumours.

Microscopically, Four histological subtypes of angioleiomyomas have been described [3,12]: (i) Capillary or solid angioleiomyomas having a rich smooth muscle cell stratification surrounding and holding a few thin vascular channels, (ii)Venous angioleiomyomas characterized by more numerous and thicker vascular channels than found in capillary angioleiomyomas, (iii) Cavernous angioleiomyomas having widened vascular channels surrounded by a thin layer of smooth muscle cells and (iv) Combined capillary and venous angioleiomyomas.

The tumours have a characteristic appearance that varies little from case to case, that being of a well demarcated nodule of smooth muscle tissue punctuated with thick-walled vessels with partially patent lumens. Typically, the

inner layers of smooth muscle of the vessel are arranged in an orderly circumferential fashion, and the outer layers spin or swirl away from the vessel, merging with the less well ordered peripheral muscle fibres. Areas of myxoid change, hyalinization, calcification and fat are seen. Mitotic activity is absent and there is no necrosis or haemorrhage [13]. Bizarre nuclear forms are occasionally encountered, a feature of no prognostic significance [14].

The spindle cells of smooth muscle tissue are immunoreactive for smooth muscle markers (actin and desmin)

Angiomyomas are benign soft tissue tumours; this category includes both cutaneous and deep soft tissue leiomyomas. The vascular angiomyomas differ from cutaneous leiomyomas in their anatomic distribution, predominantly subcutaneous, and in their predilection for women. The leiomyomas of deep soft tissue are much larger than their superficial counterparts and usually display a greater spectrum of histological changes [13].

Angioleiomyomas account for 5% of all benign neoplasms of soft tissues [15]. They should be distinguished from all nodular lesions of the extremities, like lipomas, ganglia, fibromas, schwannomas, hemangiomas, pseudoaneurysms, inclusion cysts, giant cell tumours of the tendon sheath and glomus tumours [16].

Very little is known about the molecular cytogenetic changes in angioleiomyomas. Nishio J et al have identified chromosomal regions that may contain genes involved in the development of at least some of them. Further, the most common recurrent loss was observed in chromosome 22 (the minimal common region was 22q11.2 in five cases) and the most recurrent gain was seen at Xq (three cases) [17].

Diagnosis is usually made after surgical excision and histological study of the tumour. Three case reports in the literature note that steroid injections and bandaging were of little therapeutic value. Simple excision is generally an adequate therapy as recurrence is very rare. However, malignant transformation has been reported. [13,18]

CONCLUSION

Angioleiomyoma should be considered in the differential diagnosis of every sub-cutaneous well-circumscribed tumour of the hand and finger. Surgical excision is curative and recurrence is minimal.

Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

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ΠΑΡΟΥΣΙΑΣΗ ΠΕΡΙΣΤΑΤΙΚΟΥ

Αγγειολειομύωμα του δακτύλου: περιγραφή περίπτωσης

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ΠΕΡΙΛΗΨΗ

Τα αγγειολυομυώματα είναι καλοήθης όγκοι των μαλακών μορίων προερχόμενα από τα λεία μυικά κύτταρα των τοιχωμάτων των φλεβών και των αρτηριών. Εδώ περιγράφουμε μια περίπτωση ενός τέτοιου όγκου στο δάκτυλο ενός 41 ετών άνδρα. Μετά την εκτομή του, η ιστολογική και ανοσοϊστοχημικές αναλύσεις επιβεβαίωσαν την διάγνωση. Τα αγγειολυομυώματα πρέπει να συμπεριλαμβάνονται στη διαφορική διάγνωση των όγκων των μαλακών μορίων, έχοντας κατά νού ότι η κλινική διάγνωσή τους είναι συχνά δύσκολη κι απαιτεί παθολογοανατομική εξέταση. Επίσης περιλαμβάνεται βραχεία ανασκόπηση της βιβλιογραφίας.

Λέξεις ευρετηρίου: Αγγειολυομύωμα, δάκτυλο

Παραπομπή

Τ. Ρόζεν Μαρίνου, Ε. Μούστου, Θ. Γρίβας, Α. Ζήζη-Σερμπετζόγλου. Αγγειολειομύωμα του δακτύλου: περιγραφή περίπτωσης. Επιστημονικά Χρονικά 2014;19(2):190-195.

Συγγραφέας επικοινωνίας

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