Solitary noninfiltrating angiolipoma on the finger, an unusual localization.

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Abstract

Angiolipoma, a subtype of lipoma, is a benign adypocytic soft tissue tumor composed of mature adipose tissue and small vascular proliferations. This entity makes up 5–17% of all lipomas. The diagnosis is made by clinical and pathological examination, ultrasonography, and/or magnetic resonance imaging (MRI). It is generally an encapsulated tumor (noninfiltrative), but rarely has an infiltrative form. Angiolipoma mostly occurs on the trunk and extremities with male predominance. The forearm is the most frequent location for angiolipomas. It is very rarely seen on the fingers. Herein, we report a patient with solitary noninfiltrating angiolipoma on a finger. The patient was treated with surgical excision and no recurrence has been noted over one year of observation.

Keywords: angiolipoma, adypocytic tumor, acral tumors, hand tumors, finger

Introduction

Angiolipoma is a benign adypocytic soft tissue tumor composed of mature adipose tissue and small blood vascular proliferations, reported originally by Howard et al. [1]. This entity makes up 5–17% of all lipomas. Clinically, it usually occurs as multiple, painful, bluish, reddish or skin colored subcutaneous nodules with a predilection for the upper extremities in male patients; they are less common on the trunk [2, 3]. A presumptive diagnosis may be via ultrasonography and/or magnetic resonance imaging (MRI), [4]. Its definitive diagnosis may be made by clinical examination. Histologically, one observes an encapsulated tumor (noninfiltrative) and rarely an infiltrative form [5]. The most common treatment option for this tumor is surgical excision. Recurrence has been reported for infiltrating type of angiolipomas. Noninfiltrating forms generally do not recur after excision [3]. The forearm is the most frequent localization for angiolipomas [1]. In the literature lipomas of the fingers are very uncommon; we could locate only one prior case [6]. Herein, we report a patient with noninfiltrating angiolipoma on the finger.

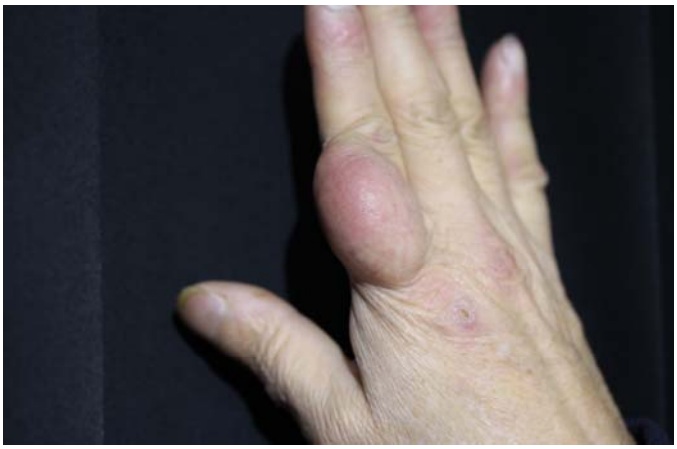

Figure 1. *Examinational findings. A 5×2.5cm skin-colored, soft, round and asymptomatic subcutaneous nodule on the extensor of right index finger running along between second metacarpophalangeal and proximal interphalangeal joint.*

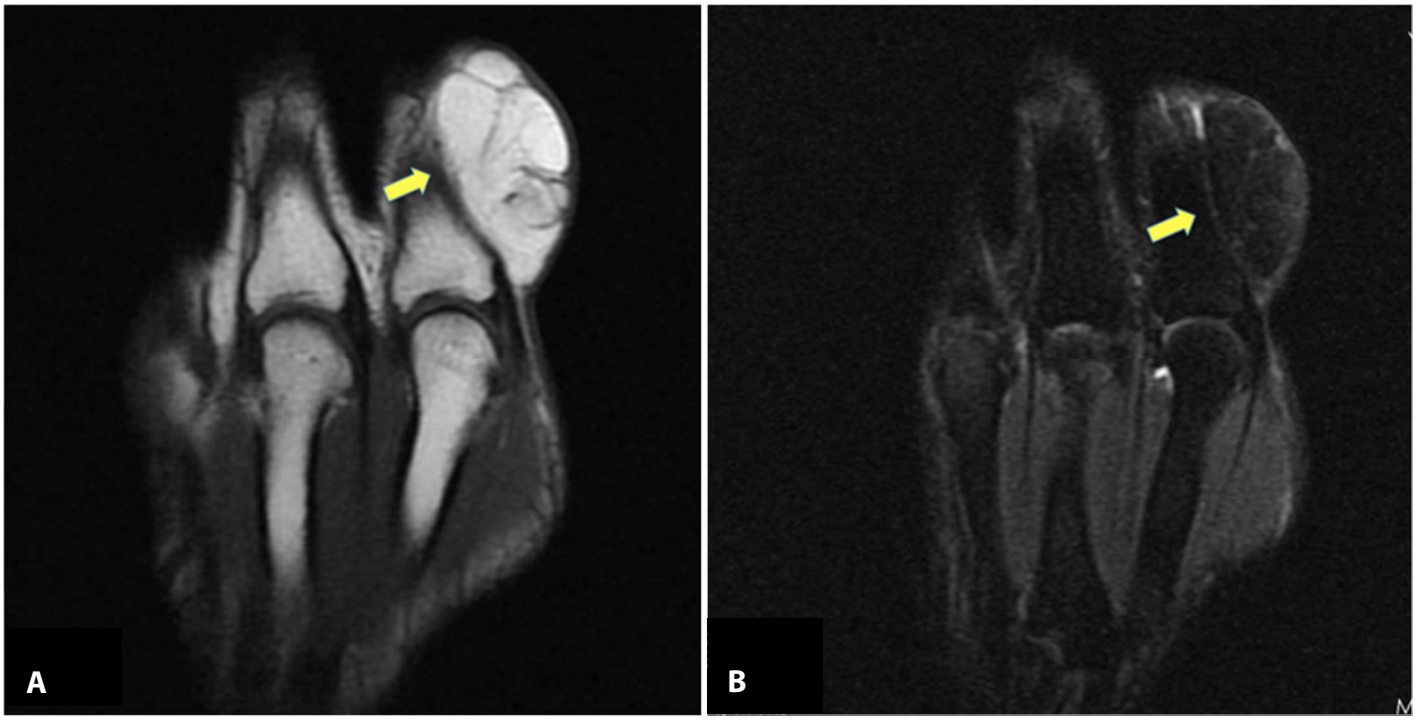

Figure 2. *MRI.* ***A)*** *Solid mass with thin septations, hyperintense in T1-weighted coronal images.* ***B****) Lipomatous structure with mild heterogenous appearance in T2-weighted coronal images. A mass with septations and lobule contour in subcutaneous tissue, 39×21mm in size, hyperintense in T1 and hypointense in T2 sequence with any contrast enhancement.*

Case Synopsis

A 60-year-old otherwise healthy man presented with a 20-year history of a soft tissue mass on his right index finger. Physical examination showed a 5×2.5cm skin-colored, soft, round and asymptomatic subcutaneous nodule on the dorsum of his right index finger, between the second metacarpo-phalangeal and proximal interphalangeal joint on lateral side (**Figure 1**). There was no tenderness with palpation and no history of prior trauma.

Ultrasonography examination revealed a 30×15mm lesion with calcifications and central hypoechoic areas with peripheral hyperechogenic areas in the subcutaneous fat. MRI showed a 39×21mm mass

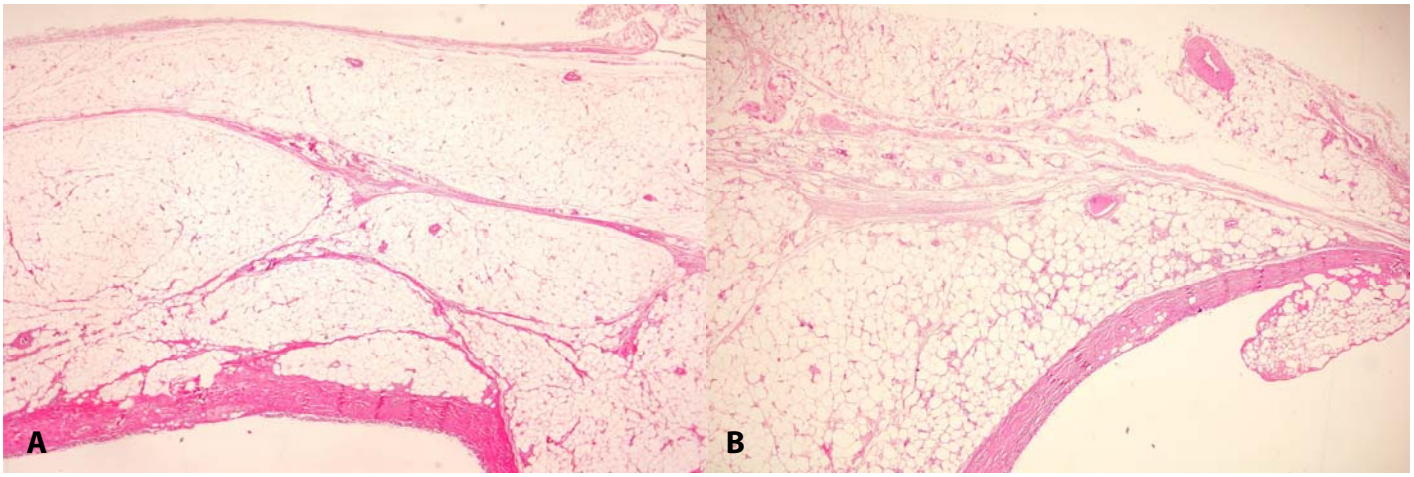

Figure 3. *Pathological examination.* ***A)*** *A tumor composed of mature fat tissue and vascular proliferation separated with a fine connective tissue (H&E, 4×).* ***B)*** *Vascular structures were usually thin and sometimes thick-walled and fat necrosis surrounded by thick fibrous tissue (H&E, 4×).*

Table 1. *Comparison of demographic and clinicopathologic characteristics of the first case of angiolipoma on the finger in literature, and our case.*

	Case of Weinzwerg et al. [6]	Our case
Age (year)	38	60
Sex	Female	Male
Duration of lesion	Not mentioned but the duration of symptoms was several days	20 year
Localization	Flexor side of right long finger between distal and proximal interphalangeal joint	Extansor side of right index finger between second metacarpophalangeal and proximal interphalangeal joint
Size	Not mentioned	5×2.5cm
Symptoms	Pain and swelling	No symptoms
Pathology	Increased neural elements and vascular septa containing hyalin trombi	A tumor composed of mature fat tissue and vascular proliferation separated with a fine connective tissue Fat necrosis surrounded by thick fibrous tissue
Imaging studies	Plain X-ray: scalloping of the radial aspect of the middle phalanx of the digit	Ultrasonography: Calcifications and centrally hypoechoic areas and peripherally hyperechogenic areas in subcutaneous fat tissue MRI*: Septations and lobule contour in subcutaneous tissue. Hyperintense in T1 and hypointense in T2 sequence with any contrast enhancement and evaluated as a solid mass lesion with a predominantly lipomatous structure
Treatment	Complete surgical excision	Complete surgical excision
Follow up	Not mentioned	no recurrence (one year)

* Magnetic resonance imaging

with septations and lobule contour in the subcutaneous tissue. It was observed as hyperintense in T1 and hypointense in T2 sequence with contrast enhancement and evaluated as a solid mass lesion with a predominantly lipomatous structure (**Figure 2**).

The patient underwent complete surgical excision. Grossly the tumor measured 4×x2.5×2cm in size. It was encapsulated yellow adipose tissue with a smooth surface. Microscopically, a tumor composed of mature fat tissue and vascular proliferation separated with fine connective tissue was observed. Additionally, vascular structures were usually thin, but sometimes thick-walled and fat necrosis was observed surrounded by thick fibrous tissue (**Figure 3**). These findings led to the diagnosis of noninfiltrating angiolipoma. No recurrence was noted for one year after excision.

Case Discussion

Angiolipoma is a benign connective tissue tumor, which was first reported in 1960 as a distinct histopathological entity [1]. Howard et al. have reported 288 angiolipomas in 248 patients, with male predominance and a mean age of 17 [1]. In our case the patient was older than most reported cases in the literature.

Howard et al. published that angiolipomas presented frequently with local pain and tenderness [1]. Painful tumors can be remembered by the acronym of "LEND AN EGG." "A" represents angiolipomas and the other letters for: leiomyoma, eccrine spiradenoma, neuroma, dermatofibroma, neurilemmoma, endometrioma, glomus tumor, and granular cell tumor [7]. However, our patient's tumor was asymptomatic in accordance with a report mentioning that angiolipomas may sometimes be asymptomatic [8].

A history of localized trauma and pressure is sometimes elicited for angiolipomas. The lesions may be solitary or multiple. Multiple angiolipomas may be familial or associated with diabetes mellitus and antiretroviral therapy [7, 9]. In our case the lesion was localized and solitary on the extensor surface of the index finger.

Table 2. *Differential diagnoses for acral soft tissue tumors in alphabetical list.*

Acral myxoinflammatory fibroblastic sarcoma	Giant cell tumor of tendon sheath
Acral angioosteoma cutis	Hemangioma
Angiofibroma	Hematoma
Aponeurotic fibroma	Intramuscular myoma
Calcifying (juvenile) glomus tumor	Lipofibromatous hamartoma
Clear cell sarcoma	Liposarcoma
Dermoid cyst	Lymphangioma
Digital mucous cyst	Neurofibroma
Epidermoid cyst	Schwannoma
Epithelioid sarcoma	Sclerosing perineurioma
Fibrolipoma	Superficial acral fibromyxoma
Fibro-osseous pseudotumor of digits	Tenosynovitis
Fibrosarcoma	

So far, one case of angiolipoma has been published with a finger localization [6]. Unlike our case, the prior report described a 38-year old woman with a painful lesion on the flexor surface of the right third finger with a presumptive diagnosis of flexor tenosynovitis [6]. Comparison of this case and our case has been shown in **Table 1**.

Although a definitive diagnosis can only be made with histopathological examination, ultrasonography and/or MRI can be helpful [4]. MRI is more sensitive for the diagnosis of soft tissue pathologies. In a paper presenting ultrasonography findings for soft tissue lesions of the limbs, a proper presumed diagnosis for angiolipomas was reported in 8.3% of 36 angiolipoma cases [4]. Awareness of this tumor is important because of the large numbers of other growths in the differential diagnosis for acral soft tissue tumors, as listed in **Table 2** [4, 10].

Surgical excision is the first-line treatment recommendation for angiolipomas [3]. Our patient was treated by surgical excision under local anesthesia.

Conclusion

Angiolipoma is a benign, painful, soft tissue tumor. However, they rarely occur on the finger. Because of the infrequency of this entity presenting as an acral tumors, physicians should be aware of this possibility.

Potential conflicts of interest

The authors declare no conflicts of interests.

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