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CASE REPORT

Tenosynovial haemangioma of the finger

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Haemangiomas developing in the hand in relation to tendon and the tenosynovium (tendon sheath) are very rare. To our knowledge only three cases have been described arising in relation to the tenosynovium of the tendons of the hand, only one of which showed infiltration of the underlying tendon. We report the case of a 16-year-old right hand dominant student who presented to her family doctor with a swelling on her left little finger. An MRI scan was arranged which confirmed a soft tissue lesion between the flexor tendons and the proximal phalanx of the left little finger, with appearance similar to giant cell tumour of the tendon sheath. Surgical exploration demonstrated a dark red fleshy tumour that appeared to infiltrate the flexor digitorum sublimis tendon, and extend around either side of the proximal phalanx. For complete excision of the lesion the infiltrated sublimis tendon and a part of the A2 pulley were sacrificed. There was no resultant bowstringing of the profundus tendon.

Histologically the tenosynovium was expanded by a vascular lesion consisting of dilated, thin-walled vascular channels within fibrous tissue ; the appearances were consistent with those of a synovial haemangioma of the flexor tendons.

Our case illustrates the pitfalls in diagnosis and the invasive potential of a synovial haemangioma. A complete surgical excision is critical to prevent recurrence.

Keywords : haemangioma ; tenosynovial ; finger.

INTRODUCTION

Haemangiomas occurring in relation to the tenosynovium in the hand are uncommon. In a series of 300 consecutive tumours of the hand, Stack *et al* (*14*) identified six haemangiomas, none of which involved tendons or tendon sheaths. To our knowledge only three cases (*12, 13, 15*) have been described arising in relation to the tenosynovium of the tendons of the hand, only one of which showed infiltration of the underlying tendon (*15*). Rico *et al* (*12*) described a haemangioma arising from the synovial sheath of the flexor tendon of the ring finger, which presented with symptoms of tenosynovitis. The tumour was distinct from the flexor tendons and could be resected easily. Waddell (*15*) and Spinner *et al* (*13*) described a case each of a haemangioma of the extensor tendons and suggested its possible origins from the synovial sheath. We present a rare case of an invasive tenosynovial haemangioma presenting in

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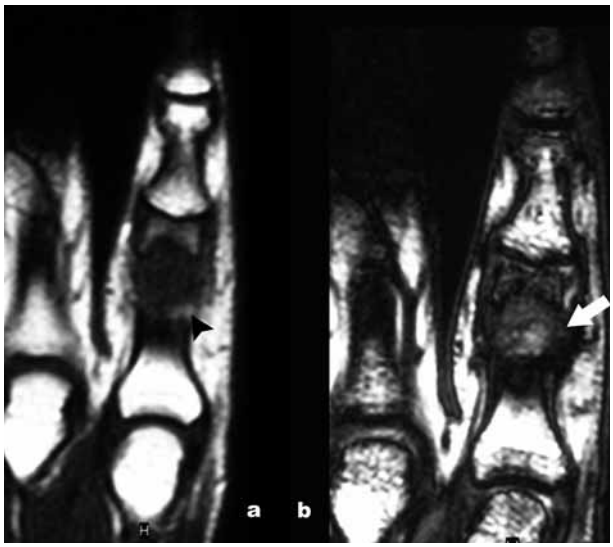

***Fig. 1.* — a**) Coronal T1 weighted MR image (TR = 260, TE = 17). The tumour has indistinct margination with intermediate intensity and a small area of increased uptake suggestive of intra-tumoral fat overgrowth (*arrowhead*) ; **b**) Coronal T2 Gradient Echo view of little finger (TR = 19, TE = 12, Flip = 50). The tumour is seen as a high signal intensity lesion (arrow) in relation to the distal end of the proximal phalanx.

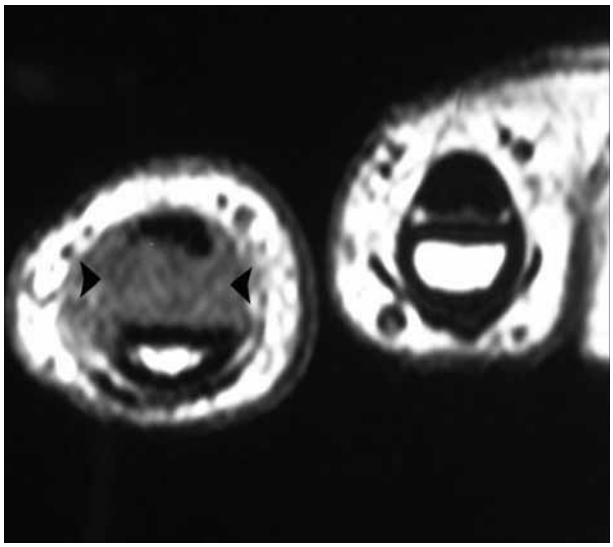

Fig. 2 a, b. — Axial T1 (TR 500 ms, TE 17) weighted images of the proximal phalanx of little finger before (a) and after (b) administration of intravenous gadolinium. Note the intermediate signal intensity lesion (arrowhead) arising between the bone and the flexor tendon on the pre contrast T1 weighted image (a) and the marked contrast enhancement following administration of gadolinium (b).

the little finger, which was initially indistinguishable from a giant cell tumour of the tendon sheath.

CASE REPORT

A 16-year-old right hand dominant student presented to her family doctor with a swelling on her left little finger. It had been present for approximately 12 months and although not painful was gradually enlarging. An urgent referral was made to a hand surgeon. She was seen in the outpatient department and a diffuse 2-cm swelling was noted. The swelling extended over the volar surface of her left little finger in the zone II region and appeared to extend around the ulnar border of the digit to the dorsum. There was no limitation in hand function, no neurovascular deficit, the flexor digitorum profundus tendon was intact but it was difficult to demonstrate a functioning sublimis. A plain radiograph was performed which showed the soft tissue shadow but no other abnormality. A magnetic resonance scan was arranged which confirmed a soft tissue lesion between the flexor tendons and the proximal phalanx of the left little finger (figs 1 and 2 a, b).

The lesion showed heterogeneous but marked contrast enhancement on T1 contrast axial scans. The flexor tendons appeared thinned at the level of the tumour and the appearances were not those of a cystic or fatty mass. In view of the location of the tumour and the clinical presentation, a probable diagnosis of a giant cell tumour of the tendon sheath was made pending histology.

Surgical exploration was performed with a Bruner incision, which demonstrated a dark red fleshy tumour that appeared to infiltrate the flexor digitorum sublimis tendon, and extend around either side of the proximal phalanx (fig 3).

The infiltration was not clearly obvious without magnification. For complete excision of the lesion, the infiltrated sublimis tendon and a part of the A2 pulley were sacrificed. There was no resultant bowstringing of the profundus tendon. The pathological specimen was sent to the pathologist for examination. The opinion was that for the most part sections through the tendon were unremarkable,

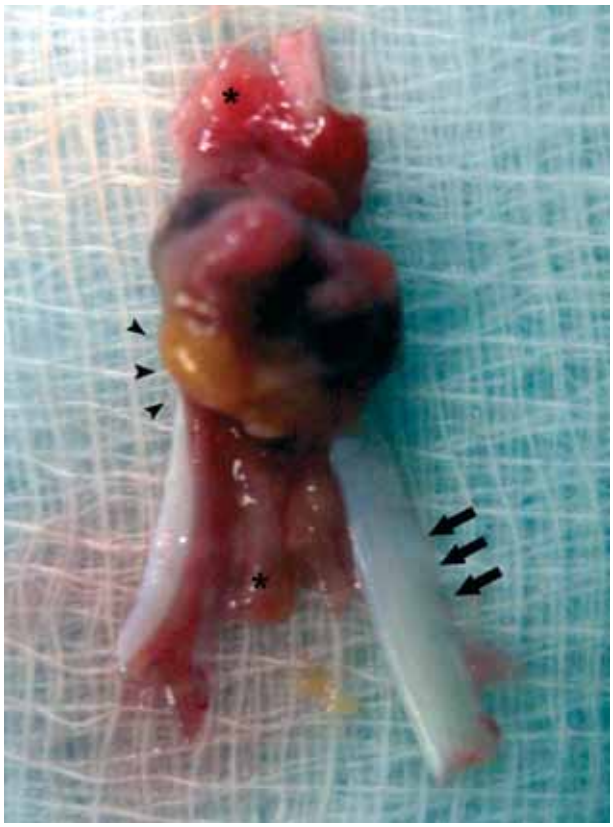

Fig. 3. — Surgical specimen showing excised lesion with portion of the sublimis tendon (*arrows*), tenosynovium (*asterisk*), intratumoral fat deposition (*arrowheads*).

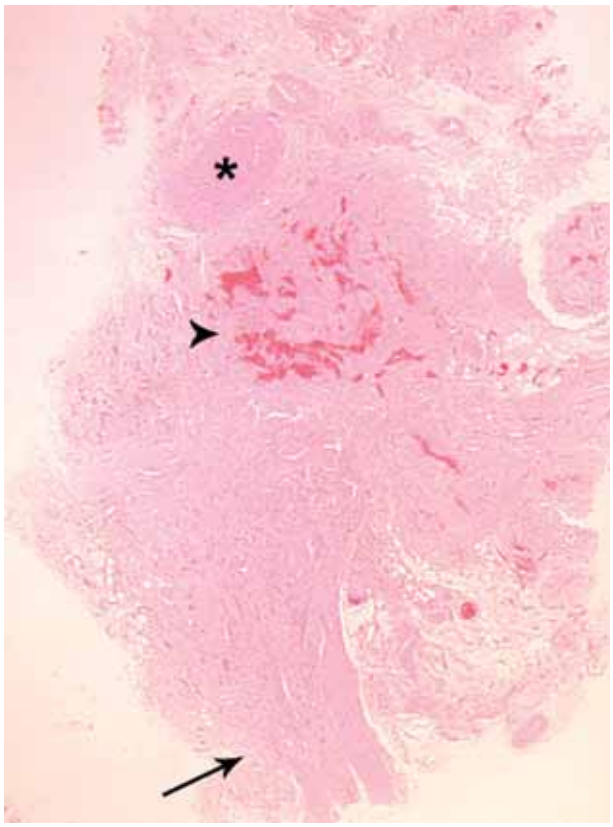

Fig. 4. — Histological section of the tumour showing the haemangioma (*arrowhead*) arising from the flexor tendon (*arrow*) with a feeding artery (*asterisk*).

however from one section an associated nodule was attached to one side of the tendon. Histologically the tenosynovium was expanded by a vascular lesion consisting of dilated, thin-walled vascular channels within fibrous tissue (figs 4 and 5).

The endothelial cells lining the vascular channels showed no evidence of cytological atypia. “Feeder” vessels were present in the biopsy specimen. The appearances were those of a synovial haemangioma of the tenosynovium of the flexor tendons. The patient was informed of the histology and its prognosis and is under regular review in clinic. At her last follow-up at twelve months following the procedure there was no evidence of any recurrence. The patient has a 20 degree flexion deformity at the PIP joint with full further flexion which does not interfere with her activities of daily living.

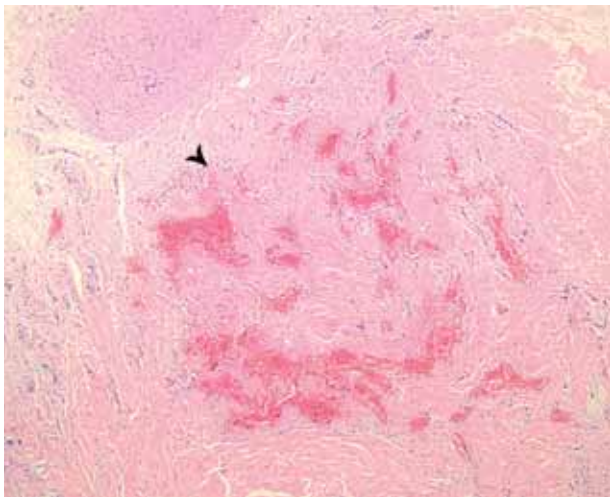

Fig. 5. — Histological section of the tumour showing dilated blood vessels within the haemangioma (*arrowheads*).

DISCUSSION

Synovial haemangiomas are benign vascular lesions arising from any structure lined by synovium, including the intra-articular region from bursal spaces and from tendon sheaths (*5*). They are rare tumours occurring commonly around the knee (60%) and the elbow (30%), usually in children or young adults, with a slight male predominance (*4*).

In the hand these tumours have been described in relation to peripheral nerves (*9, 11*), muscles (*1*), volar plate (*6*), and tendon sheaths (*12, 13, 15*). However those located in or around tendon sheaths are very rare.

Clinical diagnosis of these uncommon tumours is difficult, Devaney *et al* (*4*) reported a low rate of 22%. This is in part due to the non specificity of the symptoms and physical examination (*2*). Radiographs are not of great use in pinpointing a specific aetiology as they are normal in half of the cases, whereas in the remaining cases they show a nonspecific soft tissue mass (*3, 7*). Magnetic resonance imaging frequently provides a specific diagnosis (*3, 7, 8*) showing a lesion that is typically poorly marginated, does not cause a mass effect and has characteristic signal intensity. On T1-weighted images, it usually appears with intermediate signal intensity although areas of high signal intensity as seen in our tumour can be seen due to intra-tumoral fat overgrowth. This has been reported before (*10*) and is demonstrated by our case. On T2-weighted images marked hyperintensity is seen reflecting pooling of blood within vascular spaces (*3*).

In the hand another lesion to be considered in the differential diagnosis would be a giant cell tumour of the tendon sheath, which shows a low signal on T1 and T2 weighted images and strong gadolinium enhancement, making differentiation between a synovial haemangioma difficult without the histology. These tumours are locally invasive and are frequently complicated by recurrence.

Our case illustrates the pitfalls in diagnosis and the invasive potential of a synovial haemangioma which in our case had infiltrated the flexor sublimis tendon and the area around the A2 pulley. A complete surgical excision is critical to prevent recurrence.

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