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Case Report: An Unusual Case of Fibroma of Extensor Tendon Sheath of Hand

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Abstract: ***Fibroma of tendon sheath (FTS) is an uncommonly encountered soft tissue mass, which is morphologically distinct from the more commonly seen giant cell tumour of tendon sheath (GCTTS). FTS is typically a slow growing, painless, firm mass with a predilection for the upper extremity, frequently involving the hand. Cases of associated triggering or compression neuropathies have been described when underlying tendons or nerves are affected. It is distinguished histologically by the lack of giant cells, foamy histiocytes and synovial cells. We present a case of FTS involving extensor tendon sheath leading to the 2nd metacarpal. A 30 year old female presented with a 3 month history of a painless mass in her left palm that was gradually increasing in size. Examination revealed a swelling which was 5x4cm in size, hard in consistency, non mobile, non adherent. Radiograph revealed a soft tissue mass with no bony abnormality. Ultrasound demonstrated a solid heterogenous mass. The patient underwent excision of the mass which was then sent for histopath examination which revealed it to be fibroma of the tendon sheath.***

Keywords: Fibroma, extensor tendon, excision

1. Introduction

Fibroma of the tendon sheath (FTS) is a rare, benign, soft tissue lesion. It was first described in the literature by Buxton in 1923, further defined by Geschickter and Copeland in 1949, and Chung and Enzinger in 1979. Clinically, FTS presents similarly to the more common giant cell tumor of the tendon sheath. It is distinguished histologically by the lack of giant cells, foamy histiocytes and synovial cells. FTS is typically a slow growing, painless, firm mass with a predilection for the upper extremity. The literature on FTS is sparse and largely limited to case reports or small series. Commonly, patients present with a painless, minimally tender solitary mass. However, cases of associated triggering or compression neuropathies have been described when underlying tendons or nerves areaffected. Recurrence rates vary and, although rare in many case reports, have been recorded up to 24% in larger series. Here, we present a case report of FTS in a 30 - year - old female with a painless enlarging mass of the dorsal side of the left hand treated by excision.

2. Case Presentation

A 30 year old female presented to our OPD with a history of painless enlarging mass over the dorsal aspect of left hand near the 2nd metacarpal area since 3 months. She had no history of trauma or fall. She had no comorbidities. No significant family history. Examination demonstrated a 5x4 cm, firm, hard, superficial mass in the dorsum of her left hand that was non adherent to the overlying skin (fig.1). There was neither venous thrill nor Tinel's sign, and there was a normal Allen's test.

Radiographs of the hand revealed a soft tissue mass without bony abnormality.

Ultrasound demonstrated a solid, heterogeneous and hypoechoic mass with slight internal vascularity. All her routine investigations were carried out and she was posted for surery. A longitudinal incision was taken along the 2nd metacarpal. Soft tissue was dissected. A firm mass was found lying above the extensor tendons. The mass was carefully dissected all along the tendons and it was removed as a whole keeping the tendons intact. Wash was given and the incision was closed. The mass was sent for histopathology examination which later revealed it to be fibroma of the tendon sheath.

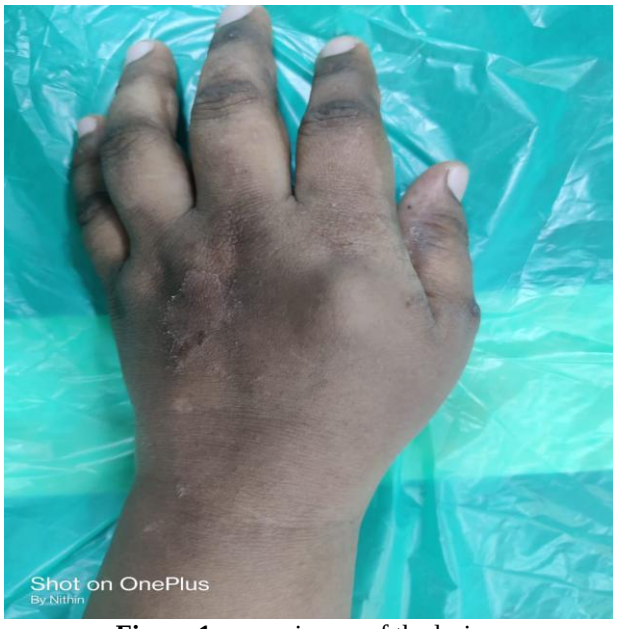

Figure 1: preop image of the lesion

Pre op image

Figure 2: intra op images

Intra op image

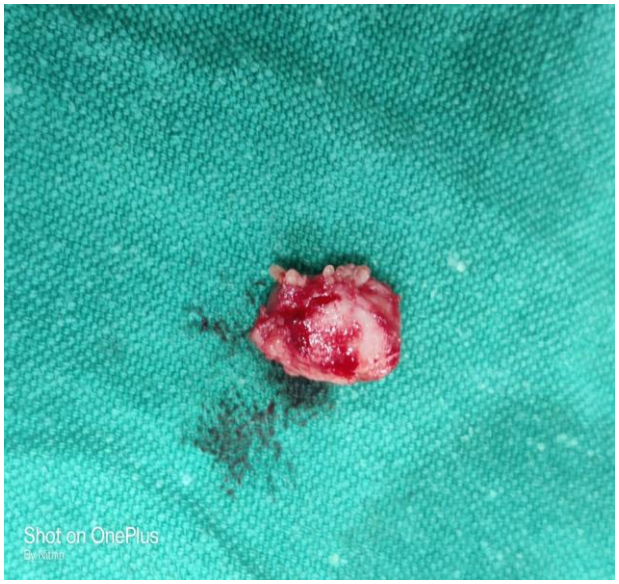

Figure 3: Excised Mass

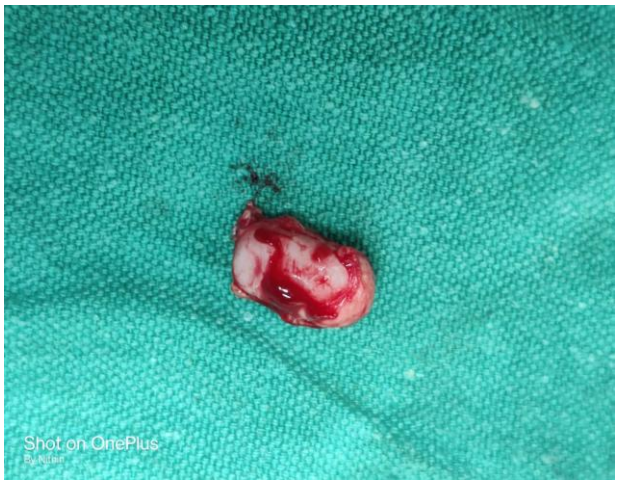

Figure 4: Excised Mass

Medical Laboratory Report

SHEHNAAZ SHAIKH-0054613
PID NO: P1122005256S
Age: 31 Year(s) Sex: Female

Reference:
Sample Collected At:
Processing Location: Metropolis Healthcare Ltd,Unit No.409-416,4th Floor Commercial Building-1,Ashirvad Mall,mumbai-70
VID: 1122494667
Registered On: 04/06/2022 11:39 PM
Collected On: 04/06/2022
Reported On: 05/06/2022 12:51 PM

METROPOLIS HISTOXPERT

HISTOPATHOLOGY

CASE SUMMARY

CASE NO	:22MLH21142
SPECIMEN	:Ganglion cyst - dorsal hand
DIAGNOSIS	:Fibroma of tendon sheath

Clinical Notes :? Ganglion cyst

Gross Examination :Received single well circumscribed grayish white tissue measuring 2.5 x 2 x 1.5 cm.
Cut surface. - Homogenous tan white.
Entirely submitted. (2 Blocks)

Grossed by :SD
Assisted by :PN

Microscopy :The section shows a well circumscribed encapsulated tumor with attached peripheral part of a tendon. The tumor contains abundant collagen with haphazardly arranged fibroblasts and thin walled slit like vessels. The stroma shows degenerative changes in the form of myxoid degeneration. Few histiocytes and occasional multinucleate cell is present. No significant increase in mitotic activity is seen.

Dispatch Summary :
1. Gross specimens are retained until at least 15 days after the final reports are signed.
2. All slides and blocks are retained; available on request.(Codes H0295 & B0072 respectively)
3. Case images / WSI available on request (Test code – W0022)

Report typed by : VRUSHALI.KUDALE
-- End of Report --

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Roshani Gala
Associate Consultant M.B.B.S, D.C.P, DNB Pathology

CAP ACCREDITED

Figure 5: histopath report

3. Discussion

Fibromas of tendon sheath are slow - growing, firm, benign tumors that occur throughout the body. As reported by Chung and Enzinger, 98% of these originate in the extremities with 81.8% of these occurring in the fingers, hands or wrists. Of their series, 21% or 29/138 occurred in the hand. They noted that the tumors were more likely to be located on the flexor surface of the hand as well as to be located in the right hand. There was a male predominance and the most likely period of incidence was between the third and fifth decades of life. Within the subset of hand cases they studied, 27 of the 29 cases involved lesions on the palmar side. They found a recurrence rate of 24% for all lesions involved in their study. Millon et al. were the first to focus on FTS within the hand in 1994. They found that of all hand tumors, FTS had an incidence of 3% in their practice with 0% recurrence after marginal excision. They related the lack of recurrence to more aggressive resection of lesions including occasionally removing neurovascular structures adhered to the tumors. An important point raised in their report was of the possibility that these lesions are caused from some form of inciting event or trauma to the region. They had one patient who had a fibroma of tendon sheath develop at the same pulley where she had previously had surgery for a trigger release. The rest of their patients, however, did not have reported trauma to the region. In our case the patient did not have any history of trauma to the region. The ultrasound appearance of FTS has only been reported once. Bertolotto et al. described the lesion as a "solid, hypoechoic, flattened mass. In this case the lesion's ultrasound features were once again solid and hypoechoic, but also demonstrated some vascularity and heterogenous composition.

With the aforementioned features, giant cell tumor of the tendon sheath, synovial sarcoma and neurofibroma were considered in the radiologic differential diagnosis. As with this case, most fibromas of the tendon sheath are fairly smooth and well - circumscribed with a multi - lobulated appearance. More often than not attachment to a tendon or tendon sheath is noted at the time of surgical resection. Sectioning usually reveals a uniform cut surface with an opaque to gray color. Areas of cyst formation and myxoid change are also common.

Classically, fibromas of the tendon sheath exhibit spindle - or stellate - shaped cells admixed diffusely within densely collagenized stroma. These cells are cytologically unremarkable with fusiform nuclei, smooth chromatin, and small nucleoli. The majority of lesions are hypocellular with variable cellularity present amongst different regions of the tumor. Areas of increased cellularity, arranged in patterns resembling nodular fasciitis, may also be present. Elongated cleft - like spaces lined by flattened epithelial cells resembling tenosynovial spaces, but which stain with von Willebrand factor (suggesting vascular etiology), are another common feature. Some lesions have been described which display nuclear atypia and pleomorphism and have been given the designation 'pleomorphic fibroma of the tendon sheath'. Immunohistochemistry is not typically needed for confirmation of diagnosis, however, lesional cells express vimentin and muscle markers (muscle - specific actin and smooth muscle act in) and do not express desmin.

Treatment for FTS consists of marginal excision of the lesion. As noted by Millon et al, this sometimes requires removal of adjacent structures which may decrease function of the extremity post - surgically. This was not required for our patient as the mass was able to be resected from around the tendons and was not adherent. Another important distinction of these tumors is that they do not pose any risk of malignant degeneration. This may make conservative resection, with a 76%cure rate, preferred by some patients over more aggressive margins. Treatment by marginal excision allows for extremely low recurrence rates and excellent, rapid return of function to the affected extremity. It is important to include FTS in the differential diagnosis for any soft tissue lesion in the hand. They are slow growing, benign lesions and are more likely to occur in the fingers, hand and wrist than anywhere in the body. The primary differential consideration is a giant cell tumor of the tendon sheath. Upon clinical, radiographical, and even gross pathologic examination, fibroma of the tendon sheath and giant cell tumor of the tendon sheath are difficult to distinguish from one another. Both arise in similar locations, possess similar radiographic signals, and have firm, well - circumscribed, multi - lobulated gray white appearances. However, microscopically the typical fibroma of the tendon sheath is not a difficult diagnosis and differs significantly from giant cell tumor of the tendon sheath. The features of a paucicellular proliferation of collagenized tissue with scattered bland spindle cells is characteristic and not diagnostic of other entities. No atypical mitotic figures are present and necrosis is not identified. More cellular lesions may be confused with nodular fasciitis or fibrous histiocytoma. Giant cell tumor of the tendon sheath (top of the differential clinically) is a predominantly round mononuclear cell proliferation with multinucleated giant cells, hemosiderin - laden macrophages, and inflammatory cells set in a dense fibrous stroma. Mitoses are common and often readily apparent in stark contrast to fibroma of the tendon sheath.

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