

Giant cell tumor of tendon sheath at the right flexor carpi radialis: A case report

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Abstract

Introduction: GCTTS is the second most common soft tissue tumour at the wrist next to ganglion cyst, and also named tenosynovial giant cell tumour or pigmented villonodular tenosynovitis. It is divided into localized form and diffuse form. We introduce a report of a rare case of GCTTS in a female where lesion was identified at right wrist.

Presentation of case: We describe a 31-year-old female patient with GCTTS over right wrist since eight months. Radiographic and histopathological examination is necessary to help determine whether to take further treatment. Surgical excision was performed, including complete removal of the tumour.

Histopathology suggested that the tumour was consistent with GCTTS without malignancy. There was no clinical and radiologic evidence of recurrence six months after surgery.

Discussion: GCTTS is a benign fibrous tissue tumour originating from the tenosynosheath, bursae and joint synovium. This tumour is more common in adults aged

30–50, and is slanted toward females. The major risk of GCTTS is recurrence and joint damage, which requires surgical resection. The integrity of the tendon plays an important role in the function of the wrist.

Conclusion: This case represents a rare case of GCTTS at the wrist. Due to its high recurrence rate, the tumour should be completely removed to reduce the possibility of recurrence. Radiographic and histopathological examination must be performed on the tumour, which is determined to be benign and does not require further treatment.

Keywords: Cell Tumour, Radiographic, Histopathology

Introduction

GCTTS is the second most popular soft tissue tumour at the wrist next to ganglion cyst, and also named tenosynovial giant cell tumour (TSGCT) or pigmented villonodular tenosynovitis (PVNS) [1,2]. According to clinical and biological manifestations, it is divided into localized form and diffuse form. Also there are two types: intra-articular and extra-articular. Localized form is benign and involve the hand and fingers and wrist,

while diffuse form is more aggressive and occurs in large joints [3]. Several hypotheses were formulated about the etiological factors of these tumours, but still there is not a common opinion on etiology, prognostic factors and recurrence rate. Age group 30-50 year is most affected by giant cell of tumour sheath and is found more often in women than men (4)

Case presentation

A 31-year-old female, right hand dominant, visited to tertiary health care center with eight-month history of right wrist discomfort and obvious growing masses. Based on physical examination, the nodules were $1.8 \times 1.5 \times 1.0$ cm in size at the volar aspect of the right wrist. (figure 1) Physical examination showed painless mass; These masses were irregular in shape and unclear from the surrounding tissue; not adherent to underlying tissue, non tender, firm in consistency and transillumination was not present however, no paraesthesia was noted, and normal circulation of the capillaries were present. The motion of the right wrist joint were moderately restricted, patient does not have any history of trauma. The patient has no history of smoking and alcohol abuse, and no family member has any history of related diseases.

X-ray examination of the right wrist showed a mass shadow with normal underlying bone. The FNAC report was suggestive of sections showing a tumor composed of multinucleated giant cells scattered within a monomorphic stroma; the nuclei of the giant cells were similar to those of the stromal cells. The patient was taken for elective surgery after due pre-operative evaluation and was given regional anesthesia (supraclavicular block) before the procedure.



Figure 1: Clinical picture of right wrist showing swelling



Figure 2: Radiograph of right wrist joint (AP and LAT) A tourniquet was applied, and a 5cm volar incision was made, extending from the proximal wrist crease to the distal third of the forearm. Soft tissue dissection was performed. After dissection, the tumour appeared to be attached to the flexor carpi radialis tendon. The tumour was dissected out after separating its margin, and it was resected en masse. The flexor carpi radialis tendon remained intact after tumour resection. The tourniquet was released, hemostasis was achieved, and suturing was done in layers.



Figure 3: Intraop photo showing tumour



Figure 4: Intraoperative dissection photo

Histopathologic examination showed that the tumour was lobulated and multinucleated giant cells scattered within monomorphic stroma, nuclei of giant cell are similar to stromal cells, there is no evidence of malignancy (Fig. 5). Histopathology suggested that these masses were consistent with GCTTS without malignancy

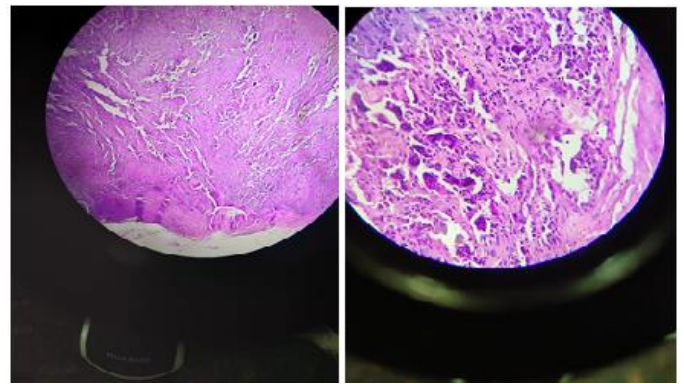


Figure 5: Histopathological slide of giant cell tumour of tendon sheath (multinucleate giant cell)

Postoperative follow-up was conducted every three months (figure 6) the patient expressed her gratitude that there was no deformity or numbness that might occur in preoperative communication. The patient made a full recovery without significant swelling and restricted movement. The flexion and extension of the wrist joint painless and non-restricted there was no clinical and radiologic evidence of recurrence.



Figure 6: Post-operative scar

Discussion

GCTTS is a benign fibrous tissue tumour originating from the tenosynosheath, bursae and joint synovium [5]. This tumour is more common in adults aged between 30–50 and is more common in women [6]. The etiology of GCTTS is uncertain, which may be related to

inflammatory reaction process, local lipid metabolism disorder, osteoclastic proliferation, trauma, infection, etc [7]. GCTTS presents painless, swelling, slow-growing masses in general. The major risk of GCTTS is recurrence, which requires surgical resection [8]. Choughri et al. considered that the recurrence rate of tumour after surgery was about 15–45% [9]. Williams et al. reported the overall recurrence rates ranged from 7 to 44% [10]. At present, radical surgical management is particularly important to reduce recurrence. In our study these lesions with tendon sheaths has been achieved complete excision to prevent recurrence. No recurrence was found at the six-month follow-up, which was continued in the following study.

Conclusion

Our case represents a case of GCTTS of right flexor carpi radialis. Moreover, because of its high recurrence rate, the tumor should be completely removed to reduce the possibility of recurrence. Incomplete excision and leaving behind satellite nodules is considered as the most important factor deciding recurrence pattern. In addition, radiographic and histopathological examination performed on the tumour, which is determined to be benign does not require further treatment.

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