

# Ganglion Cyst Associated with Triangular Fibrocartilage Complex Tear That Caused Ulnar Nerve Compression

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**Summary:** Ganglions are the most frequently seen soft-tissue tumors in the hand. Nerve compression due to ganglion cysts at the wrist is rare. We report 2 ganglion cysts arising from triangular fibrocartilage complex, one of which caused ulnar nerve compression proximal to the Guyon's canal, leading to ulnar neuropathy. Ganglion cysts seem unimportant, and many surgeons refrain from performing a general hand examination. (*Plast Reconstr Surg Glob Open* 2015;3:e318; doi: 10.1097/GOX.0000000000000291; Published online 5 March 2015)

**U**lnar nerve compression due to ganglion cysts at the wrist is rare. Most ganglion cysts seem unimportant, and many surgeons refrain from performing a general hand examination. Herein, we report 2 ganglion cysts arising from triangular fibrocartilage complex (TFCC), one of which caused ulnar nerve compression proximal to the Guyon canal, leading to ulnar neuropathy.

## CASE REPORT

Before this study began, the patient provided written informed consent. A 40-year-old male patient presented to our department with swelling on his nondominant left wrist and numbness on the ipsilateral fourth and fifth fingers. History revealed that the swelling on his wrist was present for the last few years and that numbness started 4–5 months previously. The patient had no history of trauma and did not rou-

tinely participate in any sport, although he did around 100 push-ups per day. Physical examination revealed a 2–3 cm diameter mobile mass on the volar-ulnar side of his wrist and hypoesthesia of the ulnar nerve sensory trace at fourth and fifth fingers. There was no motor deficit and no other pathological finding of the upper extremity. A magnetic resonance imaging revealed a 2.7×3.5×8 mm ganglion cyst arising from ulnar attachment of TFCC, neighboring the radial aspect of the extensor carpi ulnaris tendon and a 14×9×23 mm second ganglion cyst arising from the ulnar side of TFCC ligament, extending along the proximal volar side of the ulnar nerve (Figs. 1A-B). Grade I tear was also detected at the points of origin of the cysts. Electrodiagnostic tests did not reveal any proximal additional pathologies. Surgery was performed to relieve symptoms caused by compression of the ulnar nerve. The operation was performed under general anesthesia using loupe magnification and tourniquet.

A lazy “s” incision was performed on the ulnar aspect of the wrist exposing the cyst (Fig. 2A). The ulnar artery and nerve were carefully dissected from the cyst, and the cyst was successfully excised in 1 piece (Fig. 2B). No procedure was performed on the TFCC tear of the second cyst on the dorsal aspect. Total tourniquet time was approximately 30 minutes. The patient's hand was in a cast that keeps the wrist at a slight dorsiflexion for 5 days. No complication was seen in the postoperative period. Two weeks after surgery, the patient's hypoesthesia had significantly im-

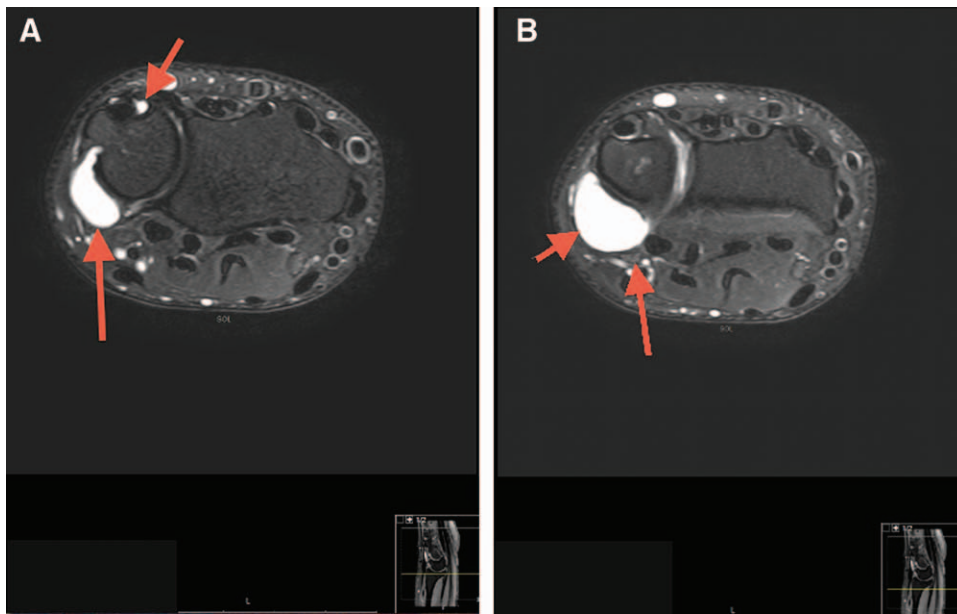
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**Fig. 1.** A, Fat-suppressed T2-weighted axial magnetic resonance imaging scans of the left wrist: ulnar-volar and dorsal ganglion cysts (arrows). B, Fat-suppressed T2-weighted axial magnetic resonance imaging scans of the left wrist: volar-ulnar wrist ganglion (short arrow) and compressed ulnar nerve (long arrow).

proved and had completely resolved after 2 months. Pathology reported the cyst to be a ganglion cyst.

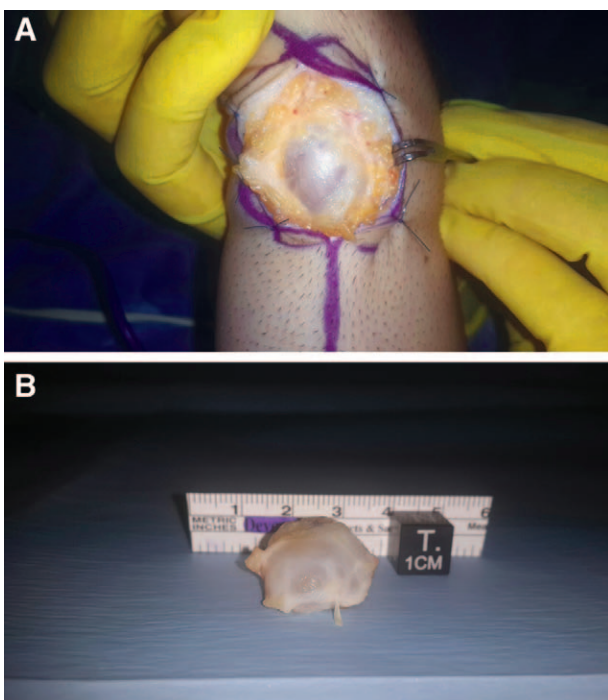
### DISCUSSION

Ganglions are the most frequently seen soft-tissue tumors in the hand. They are more common in females and young adults. Although these cysts can

arise from any joint or tendon sheath, they are most frequently seen on the dorsal side of the hand (60–70%),<sup>1</sup> on the volar side of the hand, on the flexor tendon sheath, and on the dorsal distal interphalangeal joint. Dorsal cysts more commonly arise from the scapholunate joint<sup>2</sup> (75%), and volar cysts more commonly arise from the radioscaphoid or scaphotrapezoid joints.<sup>2,3</sup> These cysts do not include epithelial lining and are therefore should be classified as pseudocysts rather than true cysts.<sup>4</sup> Their etiology is not fully understood; however, the theory of degeneration is commonly accepted. Although these cysts may not cause any complaints, they may cause symptoms specific to their location. Signs range from esthetic flaws to ulnar or median nerve pathologies.<sup>3,5</sup> Surgical indications are esthetic problems, pain, limitation of range of movement, and motor or sensory deficit due to nerve compression.<sup>4,6</sup> Although ganglion cysts are the most common cause of ulnar nerve compression in the Guyon canal, this is extremely rare, and there are only few case reports in the literature. The ulnar nerve is open to compression throughout its course of the upper extremity, although compression is most commonly observed at the elbow and seldom at the wrist. To our knowledge, our case is the first report of ulnar nerve entrapment neuropathy caused by a ganglion cyst originating from TFCC, immediately proximally to the Guyon's canal at the wrist.

### CONCLUSION

Although ganglion cysts are the most commonly observed masses of the hand, a full hand and upper



**Fig. 2.** A, Intraoperative view of the cyst. B, Gross finding of the ganglion cyst.

extremity examination plus detailed imaging should be performed for atypically located cysts, before any surgical or nonsurgical intervention is performed, to determine any relation to critical anatomical structures. We believe that early decompression with surgical removal of the ganglion cyst is an important step for complete recovery.

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