

Resection of Volar Ganglia

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Dorsal wrist ganglia are usually caused by a capsular abnormality. More often than not, degenerative pseudocysts develop within the dorsal capsule of the wrist and involve the scapholunate ligament. Their arthroscopic resection is well-documented.¹⁻⁶ Cysts of the volar face of the wrist account for 20% of all synovial cysts of the hand. They usually appear between the flexor carpi radialis tendon and the abductor pollicis longus tendon. Their origin is usually radiocarpal and the cyst may be at some distance from its origin (Figure 23.1). There are also volar capsular abnormalities in the region of the scapholunate interosseus ligament.

Various treatments have been suggested ranging from complete abstention of therapy to open surgery. Surgical treatment is the most curative, but it can be responsible for numerous problems such as an unsightly scar, neuromas on the terminal branches of the radial nerve, or joint stiffness. In addition, the proximity of the radial nerve and artery make this surgery riskier. Arthroscopic resection of palmar synovial cysts of the wrist has several advantages. The postoperative follow-up is very simple, and this technique avoids the majority of the complications described above.

SURGICAL TECHNIQUE

All patients in our series were operated on as outpatients under local regional anesthetic using a pneumatic tourniquet. We use a 2.4-mm arthroscope with a 30-degree visual angle, a shaver, and miniaturized instruments. The arm is fixed to an arm table and the elbow flexed to 90 degrees with the wrist in vertical traction using a "Japanese" hand. First, the position of the cyst is located and the outline is drawn. The arthroscope is positioned using the 3-4 radiocarpal opening. In our experience, most cysts develop inside the radiocarpal joint.

The first step is to locate the origin of the cyst. Pressure is applied to the cyst, which enables its origin to be seen clearly. It is usually situated between the radioscapocapitate and the radiolunotriquetral ligaments (Figure 23.2A,B). It is easy to find the ganglion stalk inside the joint.

A 1-2 radiocarpal surgical approach is performed. To avoid damaging any vital structures, a transverse 3-mm incision of the skin is performed in line with the cutaneous folds. Then, using mosquito forceps, we enter directly through the capsule, retracting the adjacent structures. With the help of a shaver introduced through this lateral surgical approach, the ganglion stalk is resected and then the fine anterior capsule between the two ligaments is resected. (It makes it easier if you press on, or ask an assistant to press on, the cyst.) When the cyst wall opens in the joint, the mucus from the cyst clouds the arthroscopic vision. The shaver vacuums up this mucous liquid. Then, under arthroscopic control, the joint capsule, the tendon synovitis, and the ganglion sac are resected using a shaver (Figure 23.3A,B). The limits of the palmar capsulectomy are difficult to define, but our experience has shown that when the capsular resection becomes more difficult the capsule is healthy again. The general rule is a resection of about 1 cm. The flexor pollicis longus tendon and flexor carpi radialis tendon can be seen perfectly at the end of the operation, and care must be taken not to damage these tendons with the shaver.

We do not close the incisions, thus allowing evacuation of any surplus water inside the joint. The patient is discharged the same day with the hand and wrist free. The wrist and hand can be used normally as soon as the anesthetic has worn off.

RESULTS

We have operated on 12 patients using this technique, 27 women and 5 men. The average age was 46 years old (18 to 76). The average length of time between the apparition of the cyst and surgical resection was 13 months (between 3 and 52). Mobility was normal in all cases. Muscular strength was diminished in all cases, but only moderately, and was about 75% compared to the opposite side. The wrists were more often than not painless. The reason for the operation was usually aesthetic.

Our average follow-up is 26 months (between 12 and 39 months). At the longest follow-up none of the patients had complained of pain. Mobility was normal in all cases and strength identical to the opposite side.

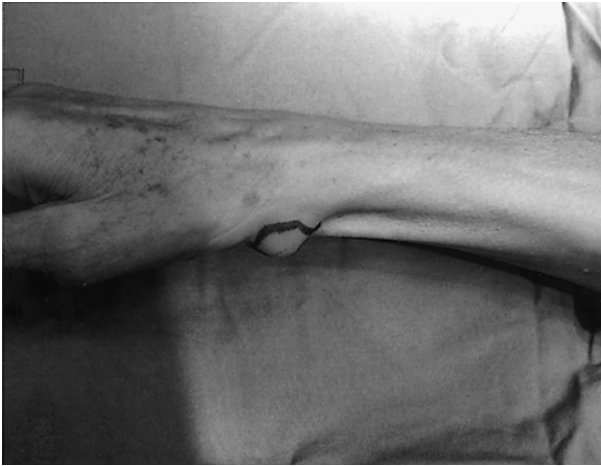
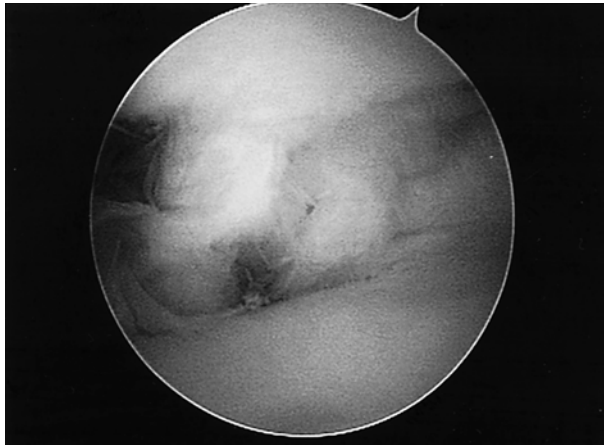
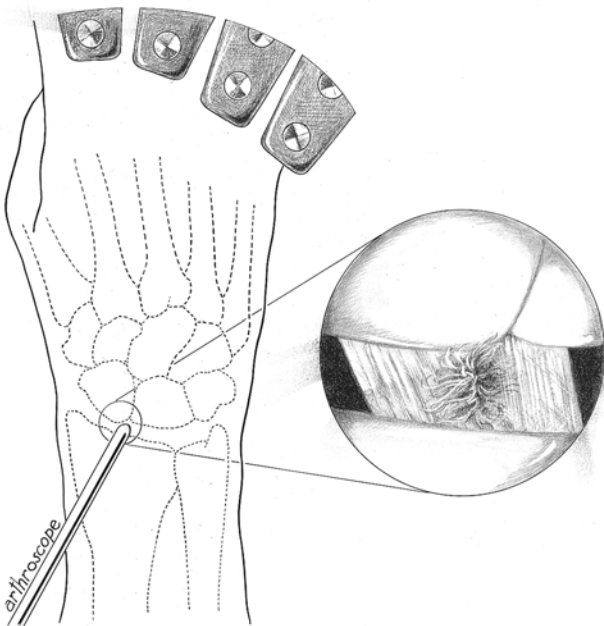


FIGURE 23.1. View of a classic volar ganglion of the wrist, located in front of radiocarpal joint, lateral to the FCR tendon.

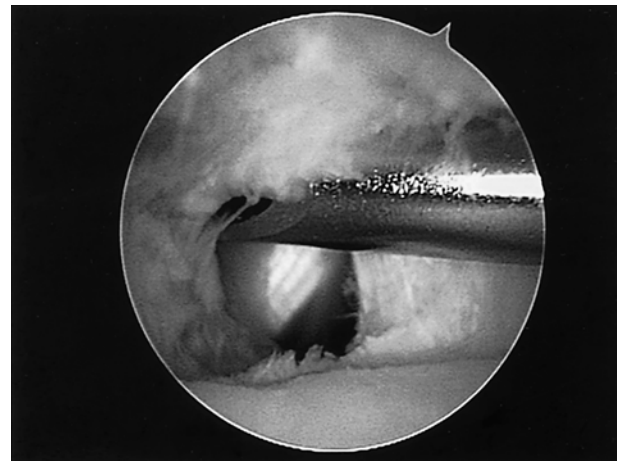


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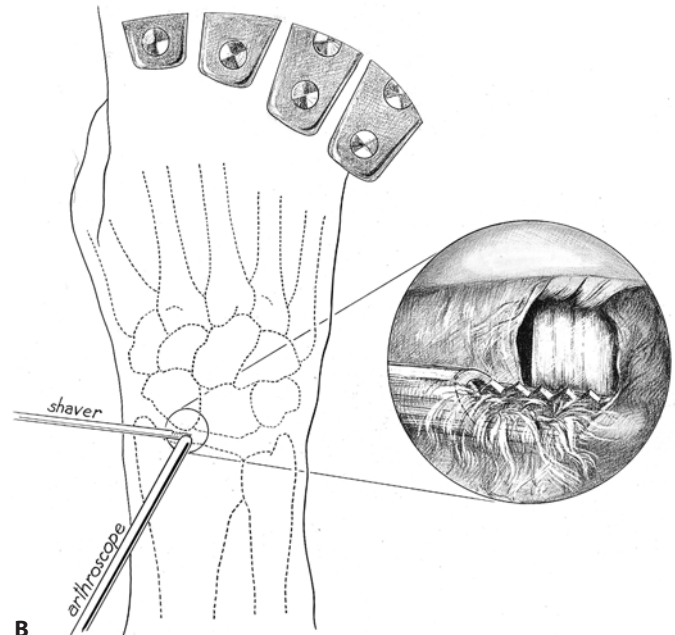


B

FIGURE 23.2. **A.** Operating view showing the location of the radiocarpal palmar ganglion. The ganglion stalk is located between the radioscapocapitate ligament and radiolunotriquetral ligament. **B.** Diagram showing the location of the radiocarpal palmar ganglion between the radioscapocapitate ligament and radiolunotriquetral ligament.



A



B

FIGURE 23.3. **A.** Operating view showing the capsular and cyst resection with a shaver placed through a 1-2 radiocarpal lateral approach. We can see the flexor pollicis longus tendon after cyst resection. **B.** Diagram showing the capsular and cyst resection with a shaver.

The small 3-mm horizontal incisions, which we performed to position the arthroscope, meant that the scars became totally invisible.

We had no radial artery lesions. One patient, the eldest, presented a moderate hematoma, which spontaneously resolved in three days. To date there have been no recurrences.

CONCLUSION

If the excision of the dorsal synovial cyst of the wrist has become a routine practice, arthroscopic resection of palmar synovial cysts of the wrist appears to be a reliable and elegant solution, particularly as standard surgical resection is not exempt from complications.

The description of palmar cyst resection technique was described by Mathoulin in Paris⁷ and Ho in Hong Kong. In 2003, Ho reported his experience of six palmar ganglions resected using arthroscopy with simple postoperative follow-up and no recurrences.⁸ It is a sure and easy technique that allows a satisfactory resection of the cyst and the adjoining joint capsule, provided that the limits of the cyst are located accurately. The satisfaction level of the patients is very high, helped by the fact that there are no cutaneous sutures and no wrist immobilization.

References

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