



A COMPARATIVE STUDY BETWEEN NYLON AND SILK SUTURE IN THE HYBRID TECHNIQUE FOR GANGLION MANAGEMENT.

Orthopedics

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ABSTRACT

Background- the ganglions on dorsum of the wrist is a common and recurring problem, unless dealt with properly. So, we use an easy to learn, simple OPD based hybrid method for the same.

Materials and Methods- we treated 16 ganglion cysts with this method, and the follow-up was seen at 3 weeks time.

Result- there was recurrence in only 1 case out of 16 (~5%), with no recurrence or any complication in the others. Thus, this hybrid technique is effective, safe procedure for management of ganglions.

KEYWORDS

Ganglion, aspiration, hybrid technique

INTRODUCTION

Ganglion cyst is the most common soft tissue swelling in Hand and wrist. It occurs most commonly on the dorsal side of the wrist (70%), followed by volar side (20%) of wrist and tendon sheath of fingers. A ganglion is a cystic cavity which develops in the dermis or in the subcutaneous tissue and is filled with a liquid which varies in viscosity and colour from fairly liquid to gelatinous, and from clear to yellow. Majority of patients with ganglion do not have symptoms besides swelling, while others may present with pain, weakness, or paraesthesia. Many may not opt for any treatment if they are reassured of the benign nature of the disease. Even the painful ganglions, cause less pain compared to other common orthopaedic problems, like carpal tunnel syndrome and osteoarthritis. If untreated it recurs in almost 50% of cases¹⁻⁴ after spontaneous resolution. Hence in almost half the patients there is recurrence, so it should be better treated with an intervention that is easy, effective and easily acceptable to the patient. There are various treatment modalities available for individuals wanting an intervention.

The conservative modalities such as aspiration with or without steroid /sclerosant /hyaluronidase injection and the traditional thread technique.

The other option being the surgical modality of complete excision with or without using an arthroscope.

We used the hybrid technique¹⁵ for management of ganglion cysts. And compared the outcomes between the use of nylon and silk suture for the threading part.



Fig 1. Transillumination test

MATERIALS AND METHODS

All the ganglion swellings were clinically tested and checked with transillumination test, to diagnose them to be unilocular. Which was later confirmed with ultrasonography.

We treated 24 ganglion cysts with the hybrid technique, with patient age 18-65 years and had a mean follow up of 2 years (6 months – 5 years).

The ganglion cyst is initially threaded with a 2-0 nylon suture (cutting needle), creating outlet portals for the cyst contents. Then using a 16 gauge needle the cyst contents are aspirated. Keeping the needle in the same place, the cyst is irrigated with Lignocaine 2% local anaesthetic solution until all the remaining contents of cyst have come out of the outlet portal. The ganglion is then dressed with a compression dressing.

The patient is given a suitable short course of antibiotics and analgesics for 5 days. The patient is advised to open the dressing daily under aseptic precautions and rotate the thread followed by re-dressing. The thread is removed after 2 weeks. The patients are followed up for long periods to check for recurrence. 16 patients were threaded using the nylon suture while 8 patients were threaded with silk suture.



Fig 2. Pre procedure state



Fig 3. Aspiration of cyst material

RESULTS

In our study we treated 24 ganglion cysts around the wrist using the hybrid threading, aspiration and flushing technique. In which we got

satisfactory result in 23 cases , with recurrence in 1 case and infection in 3 cases in which threading was done with silk.

Table 1. Recurrence rates of different methods

DIFFERENT TECHNIQUES FOR GANGLION MANAGEMENT	RECURRENCE RATE
Spontaneous resolution ¹⁻⁴	40 – 58 %
Aspiration with or without steroids ^{5,6}	15 - 69 %
Aspiration with multiple puncture ^{6,7}	50 - 78 %
Steroids only ^{8,9}	60 – 83 %
Sclerotherapy ^{10,11}	6 – 94 %
Hyaluronidase ^{12,13}	51 – 77 %
Thread technique ¹⁴	~ 50 %
Our study - threading with aspiration and flushing	<4%



Fig 5. Follow-up at 3 weeks



Fig 6. Follow-up at 3 weeks

CONCLUSION

The hybrid technique¹⁵ is easier to perform at the OPD basis, is cost effective and quick, and is better performed with nylon suture. It is a better method for treatment of ganglion cysts with lesser patient apprehension, complications and recurrence than the other methods.

Reference

1. B. V. McEvedy, "Simple ganglia," *The British Journal of Surgery*, vol. 49, no. 218, pp. 585–594, 1962.
2. L. Zachariae and H. Vibe-Hansen, "Ganglia. Recurrence rate elucidated by a follow up of 347 operated cases," *Acta Chirurgica Scandinavica*, vol. 139, no. 7, pp. 625–628, 1973.
3. J. J. Dias and K. Buch, "Palmar wrist ganglion: does intervention improve outcome: a prospective study of the natural history and patient-reported treatment outcomes," *Journal of Hand Surgery*, vol. 28, no. 2, pp. 172–176, 2003.
4. J. J. Dias, V. Dhukaram, and P. Kumar, "The natural history of untreated dorsal wrist ganglia and patient reported outcome 6 years after intervention," *Journal of Hand Surgery: European Volume*, vol. 32, no. 5, pp. 502–508, 2007.
5. V. N. Zubowicz and C. H. Ishii, "Management of ganglion cysts of the hand by simple aspiration," *Journal of Hand Surgery*, vol. 12, no. 4, pp. 618–620, 1987.
6. B. Stephen, A. R. Lyons, and T. R. C. Davis, "A prospective study of two conservative treatments for ganglia of the wrist," *Hand Surgery: European Volume*, vol. 24, no. 1, pp. 104–105, 1999.
7. J. Korman, R. Pearl, and V. R. Hentz, "Efficacy of immobilization following aspiration of carpal and digital ganglions," *Journal of Hand Surgery*, vol. 17, no. 6, pp. 1097–1099, 1992.
8. W. H. Breidahl and R. S. Adler, "Ultrasound-guided injection of ganglia with corticosteroids," *Skeletal Radiology*, vol. 25, no. 7, pp. 635–638, 1996.
9. T. W. Wright, W. P. Cooney, and D. M. Ilstrup, "Anterior wrist ganglion," *Journal of Hand Surgery*, vol. 19, no. 6, pp. 954–958, 1994.
10. N. G'um'us, "A new sclerotherapy technique for the wrist ganglion: transcutaneous electrocauterization," *Annals of Plastic Surgery*, vol. 63, no. 1, pp. 42–44, 2009.
11. I. G. Mackie, C. B. Howard, and P. Wilkins, "The dangers of sclerotherapy in the treatment of ganglia," *Journal of Hand Surgery*, vol. 9, no. 2, pp. 181–184, 1984.
12. A. S. Paul and D. H. Sochart, "Improving the results of ganglion aspiration by the use of hyaluronidase," *Journal of Hand Surgery: European Volume*, vol. 22, no. 2, pp. 219–221, 1997.
13. M. J. O. Akkerhuis, M. van der Heijden, and P. R. G. Brink, "Hyaluronidase versus surgical excision of ganglia: a prospective, randomized clinical trial," *Journal of Hand Surgery*, vol. 27, no. 3, pp. 256–258, 2002.

14. R. Singhal, N. Angmo, S. Gupta, V. Kumar, and A. Mehtani, "Ganglion cysts of the wrist: a prospective study of a simple outpatient management," *Acta Orthopaedica Belgica*, vol. 71, no. 5, pp. 528–534, 2005.
15. A. Soni, H. S. Varma, D. Peepra, "A hybrid technique for ganglion management" *International journal of scientific research*, vol. 7, no. 1, pp. 3–4, 2018