



## GANGLION CYST: TREATMENT BY SURGICAL EXCISION VERSUS DOUBLE LOOP SUTURING TECHNIQUE

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### ABSTRACT

**Introduction:** Ganglion cysts are benign soft tissue swelling common in second and third decade of life. Pathogenesis represent sequelae of synovial herniation or coalescence of small degenerative cyst containing mucinous material. **Material and methods:** Total of 30 cases were included in the study and was carried on outpatient basis. Based upon choice of treatment by the patient were divided into two groups. Group A includes surgical excision and Group B where double loop suture technique is done. **Results:** Total of 15 patients were on both group. There was 1 case of recurrence in excision and 2 cases in double loop suturing technique. Incidence of 1 case of infection in excision. **Conclusion:** Double loop suturing technique is the best alternative to excision being simple, inexpensive and associated minimum complication.

**KEYWORDS:** Ganglion, double loop suture, excision.

### INTRODUCTION

Ganglion cysts are benign soft tissue swelling that occurs most commonly around wrist and ankle.<sup>[1]</sup> They are common in second and third decade of life.<sup>[2]</sup> Though the pathogenesis of the cyst remains unclear; they may represent sequelae of synovial herniation or coalescence of small degenerative cyst arising from tendon sheath, joint capsule and bursae. Histologically ganglion cyst contains mucinous material rich in hyaluronic acid.

Usually clinical symptoms include swelling with or without pain and rarely associated with weakness and paresthesia. The gold standard for diagnosis being ultrasonography.<sup>[3]</sup>

Different treatment options have been described in the literature for the management of ganglion cysts of which the gold standard being surgical excision of the cyst<sup>[4]</sup>, other surgical procedures include arthroscopic resection which has advantage of minimum scar as well as evaluation of any intraarticular pathologic condition.

Conservative treatment includes aspiration along with steroid injection which is one of the simplest methods though recurrence rate is reportedly higher.<sup>[5]</sup> The other technique is the double loop thread technique wherein two sutures are passed through the ganglion cyst in perpendicular fashion and each tied with loop wherein the reported recurrence is less.<sup>[6]</sup>

The purpose of the study is to compare the effectiveness of double loop suture technique and open surgical excision for treatment of ganglion cyst.

### MATERIAL AND METHODS

The study was carried on outpatient basis within a period of six months from January 2017 to June 2017 in the department of orthopaedics. A total of 30 cases were included in the study. All ganglion of the wrist were included in the study. Ganglion less than 1cm were excluded from the study.

After obtaining written consent patients were duly explained about both the procedures with due risk and advantage involved and subsequently based upon their choice of treatment they were divided into two groups. Both the procedures were carried under local anaesthesia.

In group A surgical excision was performed where incision is taken just above the swelling, haemostasis obtained and under direct vision excision done and skin closure done with prolene and compression dressing applied.

In group B double loop suturing technique was done. We used mersilk no1 for all cases. Ganglion was punctured at one end with needle and then passed through centre of ganglion and exited from the opposite side, again same procedure repeated at right angle to the first one. Thread

was moved to and fro to create a path and then ganglion pressed firmly to express out mucinous material. Then both suture loosely tied over the top and bandage applied.

In both groups oral antibiotics were given. Patients were asked for follow up after 1 week followed by 1 month, 3 months and 6 months. The success of the treatment was assessed by absence of swelling in flexed position.

## RESULT

A total of 30 cases were selected between January 2017 and June 2017 in the study. Total of 15 patients were in

both group each. Study comprised 16 females(53.33%) and 14 males(46.66%) in both the groups. All patients were between the age group of 18 years to 48 years. The reason for intervention being pain was 18 cases(60%) and cosmesis in 12 cases(40%). There were no recurrence upto 3 months following which there was 1 case of recurrence (6.6%) in excision and 2 cases(13.3%) in suturing technique. There was incidence of 1 case of infection(6.6%) in excision.

**TABLE 1:**

	<b>Group A (Surgical Excision)</b>	<b>Group B (Double Loop Suture)</b>
1. TOTAL PATIENTS	15	15
MALE	10(66.6%)	4(26.66%)
FEMALE	5(33.33%)	11(73.33%)
2. AFFECTED SIDE		
RIGHT	8(53.33%)	6(40%)
LEFT	7(46.66%)	9(60%)
3.SYMPTOMS		
PAIN	13(86.66%)	5(33.33%)
COSMETIC	2(13.33%)	10(66.66%)
4.SIZE		
1 – 3 CM	6(40%)	8(53.33%)
> 3 CM	9(60%)	7(46.66%)
5.INFECTION	1(6.6%)	0
6.RESULT		
SUCCESS	14(93.33%)	13(86.66%)
RECURRENCE	1(6.6%)	2(13.33%)

## FIGURES



**Figure 1 – Preoperative.**



**Figure 2 – Preoperative.**



**Figure 3 – Incision.**



Figure 4 – Cyst isolated by dissection.



Figure 5 – Excision.



Figure 6 – One month follow up.



Figure 7 – Preoperative local anaesthesia.



Figure 8 – Injecting.



Figure 9 – Suture needle through one end.



Figure 10 – double loop Suture Passed



Figure 11



Figure 12 – Suture tied and dressing done



**Figure 13 – One week follow up.**



**Figure 14 – One month follow up.**

### DISCUSSION

Ganglion is one of the commonest benign swelling with a very common occurrence around wrist. There are various treatment protocols used to treat this cystic swelling. Results of different treatment methods reported in literature are variable.

In present study after 9 months follow up success rate of surgical excision is 93.3% whereas that of double loop suture being 86.6%. This result were comparable to other studies like Humail S M et al which stated surgical excision and closure of capsule has a success rate of 92%.<sup>[7]</sup> The loop suture technique was first introduced by Gang and Maktlood and achieved success rate of 95%. This is the simplest and only method to come close in success rate when compared to excision. The passage of suture leads to a tract for expulsion of mucus and leads to collapse of cyst wall and obliteration of cystic cavity. Retaining suture lets the content escape on movement and also produce fibrosis along the ganglion lining which reduces the chance of recurrence and associated complication.

### CONCLUSION

The excision of ganglion remains the gold standard for the treatment of ganglion where recurrence rate is low but it is associated with complications like infection and scarring whereas the best alternative to excision is the double loop suturing method which is simple, inexpensive and associated with very minimum complication.

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