

Efficacy of Aspiration and Steroid Injection in Treatment of Ganglion Cyst

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ABSTRACT

Background: There are several types of treatment modalities for wrist ganglions including both surgical and non surgical methods. The aim of the study was to assess the effectiveness of cyst aspiration and methyl prednisolone acetate injection.

Aim: To determine the Efficacy of Aspiration and Steroid Injection in Treatment of Ganglion Cyst.

Methods: This prospective study was carried out at Department of General Surgery, Lady Reading Hospital, Peshawar from August 2014 to July 2015. Thirty patients having wrist ganglions were seen and treated. The aspiration was carried out under sterile technique, area infiltrated with 1% lignocaine, followed by aspiration of ganglion content using 16 G needle and injection of Methyl-prednisolone Acetate BP 40 mg/ml. The patients were advised to carry out their normal activities and follow up was done at 6 weeks, 3 months and 6 month

Results: Out of total 30 patients 21(70%) were female and 9(30%) were male patients. The mean age of the patient was 23±9.21 with age range of 15-55. The patients were followed up for a period of one year, out of total 30 patients (17) 56.7% patients had no recurrence while (13) 43.3% patients had recurrent ganglion cyst.

Conclusion: It is concluded that aspiration with steroid injection can be a useful alternative in treating ganglion wrist. As most of the patients were young female and the purpose of treatment was mainly on cosmetic grounds so in comparison with surgical excision which gave a bigger scar to the patient, the aspiration and steroid injection is a useful alternative.

Keywords: Ganglion cyst wrist, aspiration, steroid (methyl prednisolone) injection

INTRODUCTION

Ganglion cyst is the most common soft tissue swelling in area around wrist region. It occurs most commonly on the dorsal side of the wrist (70%), followed by volar side (20%) of wrist and tendon sheath of fingers. Most of the ganglion cysts are asymptomatic besides swelling. Patients sought advice and treatment because of the cosmetic appearance or they were concerned that their ganglion was a malignant growth¹. Majority of patients with ganglion are asymptomatic, except for their presentation with a soft tissue lump, while some patients may present with pain, weakness, or paresthesia. A study has reported in their review that only 19.5% had symptoms other than a soft tissue lump².

Different treatment options have been described in the literature for the management of ganglion. There are certain reports showing spontaneous resolution of ganglion in 40-58% of patients^{3,4}. The mainstay of surgical treatment remains open surgical excision^{5,6}. A technique of arthroscopic excision of

dorsal wrist ganglia described by Osterman and Raphael in 1995. Arthroscopic resection has the potential advantages of minimizing the surgical scar and permits evaluation of any intra-articular pathologic condition⁷.

Apart from surgical treatment many conservative treatments have been described in the literature. Sclerotherapy has been proposed to treat ganglion. Sclerosant was injected into ganglion sac to damage the intimal lining and cause fibrosis to reduce the recurrence rate. Initial study showed high successful rate ranging 78–100%, however, it was confirmed later on that ganglion had no intimal lining by histological studies and failure rate of as high as 94% was reported. Since there is communication between ganglion and synovial joint, sclerosant might pass from ganglion to the joint and tendon and cause damage to them⁸. Some advocated the use of hyaluronidase, which depolymerizes the hyaluronic acid present in ganglion content. Otu reported a 95% cure rate after a follow-up period of 6 months⁹. Recurrence rate of 77%, for treatment of ganglion with hyaluronidase is reported¹⁰.

Immobilization following aspiration had showed conflicting results. A study showed that 3-week immobilization after aspiration and multiple puncture had a significantly higher successful rate for dorsal

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carpal ganglion¹¹. Thread technique is another option for conservative management by which two sutures were passed through the ganglion at right angles to each other, and each was tied in a loop. The contents of ganglion were expelled by massage at interval. The reported recurrence rate is 4.8 %¹².

Aspiration along with steroid injection is one of the simplest ways to treat ganglion..Aspiration is generally performed via single or double sharp pointed needle. Firstly, cyst fluid is aspirated and then steroid is injected into cyst cavity. The recurrence rate of this technique is relatively high as between 59-68% for dorsal ganglion and 88% for volar ganglion^{13,14}. The purpose of this study was to assess the effectiveness of cyst aspiration and methyl prednisolone acetate

PATIENTS AND METHODS

This prospective study was carried out at Department of General Surgery, Lady Reading Hospital, Peshawar from August 2014 to July 2015. Thirty patients having wrist ganglions presented to the surgical OPD of Lady Reading Hospital and treated by one surgeon. There were 19 female and 11 male patients with an average age of 23 years (15 to 55 years). Diagnosis was made on clinical examination, explained to patients about the condition and the patients were given three options of treatment. Reassurance,, Aspiration and steroid injection and Surgery with its associated complications. Those who opted for aspiration and steroid injection were included in the study. The aspiration was carried out under sterile technique, area infiltrated with 1% lignocaine, followed by aspiration of ganglion content using 16 G needle and injection of Methyl-prednisolone Acetate BP 40 mg/ml. The patients were advised to carry out their normal activities and follow up was done at 6 weeks, 3 months and 6 month.

RESULTS

Out of total 30 patients 21 (70%) were female and 9(30%) were male patients (Table 1). The mean age of the patient was 23±9.21 with a range of 15-55 years.

Table 1: Distribution of patients by gender (n=30)

Gender	No.	%
Male	9	30.0
Female	21	70.0

Out of the total 30 patients 15 patients were in the age group of 15-20, 13 patients were in the age group 21-30, one patient was in age group of 41-50 and 1 patient in 51-60 (Table 2). The patients were

followed up for a period of one year out of total 30 patients 17(56.7%) patients had no recurrence while 13(43.3%) patients had recurrence (Table 3).

Table 2: Distribution of patients by age (n=30)

Age (years)	n	%age
10 - 20	15	50.0
21 – 30	13	43.4
31 – 40	-	-
41 – 50	1	3.3
51 – 60	1	3.3

Table 3: Frequency of recurrence rate

Recurrence	n	%age
Yes	13	43.3
No	27	56.7

DISCUSSION

Wrist region ganglion cyst is the most common benign soft tissue lump, constituting approximately 50-70% of the swellings of the hand and wrist area. Furthermore, the majority of this kind of lumps (60-70%) were found on the dorsum of the wrist^{15,16}.

Different modalities of treatment have been used for the treatment of ganglion cyst .that include both surgical and non surgical treatment. The mainstay of surgical treatment remains open ganglionectomy^{5,6} with higher reported recurrence rates attributed to inadequate dissection in which the tortuous duct system located at the joint capsule is not fully excised. Some authors claim recurrence rates for dorsal wrist ganglia as low as 1–5%¹⁷ and 7% for volar wrist ganglia.¹⁸ Arthroscopic resection has the potential advantages of minimizing the surgical scar⁷.

Aspiration is one of the mainstay of nonsurgical treatment. Studies have shown remarkably variable rates of success. Zubowicz reported 85% success with up to three aspirations. He does, note that failure was much more common with each subsequent aspiration, a fact confirmed by other studies, of which some report no benefit with repeat aspiration.^{19,21} An other study showed that in 52% of patients treated via aspiration or with expectant management, the ganglion was still present at 6 weeks²². Literature shows the poorest success rates with aspirations of *volar ganglia of the wrist* and are associated with additional risk of adjacent structures damage, including the radial artery and the palmar cutaneous branch of the median nerve^{18,23}. Some author suggests ultrasound-guided aspiration²⁴.

To improve the success rate of simple aspiration, different additional measures have been introduced previously, Becker, in 1953, introduced steroid injection after aspiration and in 1966, remarkable 86% success rate was reported²⁵. Our study showed female preponderance, most of the

patients were in their second and third decade of life which corresponds to that mentioned in literature^{26,27}. Our study showed recurrence rate of 43.3% which falls within the range mentioned literature^{13,14,28,29} the success rate of treating ganglion cyst with aspiration and steroid injection is 56.7% in our study.

CONCLUSION

In our study we concluded that aspiration with steroid injection is a useful alternative in treating ganglion wrist. As most of the patient in our study were young female and the purpose of treatment was mainly on cosmetic grounds so in comparison with surgical excision which give a bigger scar to the patient, the aspiration and steroid injection can be offered as a useful alternative.

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