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Management of Wrist Ganglion by Aspiration and Triamcinolone Injection Versus Surgical Excision of the Cyst

Tariq Saeed; Asif Mahmood; Maleeha Hussain; Sarem Zarak Wali; Hira Ashraf

INTRODUCTION Ganglion cysts are commonly occurring lumps of the hand usually found on palmer or dorsal surface of wrist and palmer surface of the base of fingers. They are idiopathic in origin but can be caused by trauma. Ganglion cysts disappear spontaneously, hence, in most cases they are only observed. However, if they persist, become painful or limit activity several treatment options are available.

OBJECTIVE To assess recurrence rate of ganglion cyst following aspiration and injecting triamcinolone into the cyst and surgical excision of the cyst.

DESIGN This is a prospective comparative study

PLACE AND DURATION OF STUDY This study was carried out in Surgical Unit of Fauji Foundation Hospital Lahore and Mohsin Medical Complex Walton Lahore for a period of time from February 2018 to March 2020.

RESULTS This study was carried out in 50 patients, results were obtained and compared. Two groups were formed Group A and Group B, with 25 patients in each group. It showed that 21 patients (84%) of the Group A who were managed with aspiration and triamcinolone injection had recurrence of the ganglion cyst and patients expressed dissatisfaction. In Group B all 25 patients had surgical excision of the ganglion with only 3 patients (12%) having recurrence.

CONCLUSION It was concluded that aspiration and injecting triamcinolone into ganglion cyst is a simple procedure that can be performed inside the doctor's office. It gives quick relief without requiring patient preparation or post-surgical complications. However, it is an ineffective management of ganglion cyst. Whereas, surgical excision showed better results. Patients expressed satisfaction despite the surgical trauma and discomfort of 1-day hospital stay.

KEYWORDS Ganglion Cysts, Triamcinolone, Cystic, Excision

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Ganglion cysts are idiopathic in origin but most common cause is trauma. Minor trauma which is sometimes not even recalled by the patient can be a cause and can presumably reflect a variation in normal joint or tendon sheath function [1]. Ganglion cysts, also known as Bible cysts, [2] are more common in women than men. 70% cysts are found in people between 20-40 years of age. Rarely, ganglion cysts occur in children younger than 10 years of age. Cysts near joints are connected to the joint and the leading theory is that a type of check valve forms that allows one-way flow of the fluid, only out of the joint [3].

Ganglion is a sac-like swelling or cyst that arises from synovium lining a joint or a tendon. The cyst contains clear fluid, which is similar to but thicker than normal synovial fluid [4]. They are most commonly found on the wrist joint, especially the scapho-lunate joint, which accounts for 80% of all ganglion cysts. Ganglion cysts are amongst common lumps of the hand and wrist that occur adjacent to joints or tendons [4]. They are most commonly located on dorsal or palmer surfaces of the wrist and the palmer surface of the base of fingers [5,6].

Ganglion cysts may change in size or even disappear completely. They may or may not be painful [3]. These cysts are non-cancerous and do not metastasize. Diagnosis is usually based on location and appearance. Ganglion cysts are usually oval or round in shape and soft or firm in consistency. Cysts on palmer surface of the base of fingers are typically pea sized firm nodules that are tender to pressure [7]. Ganglion cysts show positive trans-illumination test, which may be helpful in diagnosis. Clinician may request X ray to investigate adjacent joint. Cysts at the distal interphalangeal joint are frequently associated with arthritic bone spur [8].

Treatment can be non-surgical or surgical. In most cases, the cysts are only observed especially if they are painless, as they spontaneously disappear frequently. However, if the cyst becomes painful, limits activity, or is otherwise unacceptable for cosmetic reasons, several treatment options are available [9]. The use of anti-inflammatory medication and splints can reduce pain associated with activity.

Aspiration of the cyst followed by injecting triamcinolone can remove fluid from the cyst and decompress it [7,10]. It is a

simple procedure and can be performed in most office settings. However, recurrence of the cyst is common and is seen in more than 50% of the cases. Cystic fluid is identical to the normal fluid found within a joint or a tendon sheath. However, the fluid can become gelatinous over time [11]. If non-surgical management fails to provide relief or if recurrence occurs surgical management is availed [12]. Surgery involves removal of the cyst along with a segment of the joint capsule or tendon sheath. Even though surgical removal is the definitive treatment but recurrence is reported in a small number of cases [10]. If ganglion cyst is present on the wrist combined use of traditional and arthroscopic technique yield good results [6].

It is important to have such lumps examined by the doctor. While most lumps around the wrist and hand are ganglion cysts (by far the most common), there are other conditions requiring different management such as lipoma, giant cell tumor, infections or carpal bossing (bone spur) [13]. Sometimes ganglion cysts on wrists disappear spontaneously but most of the time they require management. Large ganglion cysts put pressure on surrounding structures especially underlying tendon which is painful.

An alternative traditional method is to smash the wrist ganglion cyst with a hard object [8]. This rupture the lining of the cyst. Because the lining is disrupted the smashed ganglion cyst may not return quite as often as those drained by a needle. However, many patients are uncomfortable with this barbaric method of treatment [8,9].

METHODS

We studied 50 patients who presented in the surgical outdoor patient department of Fauji Foundation Hospital, Lahore. All 50 patients had complaints of painful or painless swelling on the dorsum of the wrist joint. Patients were examined clinically and advised X- rays of the wrist joint. Patients were divided into two groups Group A and Group B with 25 patients in each group. Patients in Group A had aspiration of the ganglion cyst with 14 gauge I/V cannula followed by triamcinolone injection in the cyst wall. While patients in Group B were subjected to surgical excision of the ganglion cyst under general anesthesia. Patients were reassessed for any recurrent swelling after 6 months of the management.

Sample Collection: Patients were selected at random and their consent for inclusion in this study was taken. Patients were also divided in two groups at random. All patients reported to surgical outdoor patient department of Fauji Foundation Hospital Lahore and Mohsin Medical Complex Walton Lahore.
Inclusion Criteria: Patients between age 10-60 years were selected. Gender limit was not used. All selected patients had no systemic illness.
Exclusion Criteria: Children less than 10 years of age and patients with systemic illness were excluded.

AGE GROUP IN YEARS	NUMBER OF MALE PATIENTS	NUMBER OF FEMALE PATIENTS
10 to 15	0	03
16 to 25	03	26
26 to 60	03	15

Table 1: Of Sex Distribution

RESULTS

A total 50 patients were included in this comparative and analytical study. All of these patients presented in surgical outdoor patient department of Fauji Foundation Hospital Lahore and Mohsin Medical Complex Walton Lahore with ganglion cyst on the dorsum of the wrist joint. 44 out of 50 patients were females (88%), and 6 patients were males (12%). 60% of the patients were in their 2nd or 3rd decade of life with mean age of 24 years. 30% of the patients were in 4th decade of life. In Group A 21 patients (84%) showed recurrence and dissatisfaction with treatment. All patients were subjected to single attempt of aspiration followed by triamcinolone injection into the cyst. Patients in Group B were subjected to surgical excision of the ganglion cyst. Only 3 patients (12%) reported recurrence. Upon examination recurrence was seen in 2 patients (8%) while third patient (4%) had a fibrotic nodular swelling probably due to underlying fibrosis. Hence, it was concluded that surgical excision of the ganglion cyst should be the preferred method of management.

DISCUSSION

Ganglion cysts are idiopathic in origin. They presumably reflect a variation in joint or tendon sheath function. Occasionally, ganglion cyst formation is an early sign of arthritis. Dorsum of the hands and wrist joints are most commonly affected areas but ganglion cysts can sometimes be present on feet, knees or ankles. Ganglion cyst is the most commonly occurring lump of the hand, and tends to target women between the ages of 20 and 40 years, for unknown reason. Tendons anchor muscles to the bones but presence of a ganglion cyst on tendon may cause muscle weakness. Ganglion cysts may be present as just one large lump or a collection of many smaller ones attached to a single stalk deeper in the tissue [14].

One third to one half of ganglion cysts disappear spontaneously without the need for medical treatment [15,16]. However, it is always best to consult the doctor to rule out other possibilities. If the ganglion cyst is painful, limits activity, causes numbness or paresthesia doctor consultation becomes mandatory. Ganglion cysts can be diagnosed on medical history and physical examination. Furthermore, noninvasive investigations, such as ultrasonography and X-ray, and aspiration of cyst fluid aid in diagnosis [17].
Ganglion cysts can be managed using non-surgical and surgical approach. Needle aspiration and triamcinolone

injection in the cyst is one of the several ways to manage it [18]. However, high recurrence rate is reported with this method of management. Some studies suggest that approximately half of the patients report recurrence following aspiration and triamcinolone injection. A ganglion cyst that is aspirated three times has more than 80% chance of complete cure [19]. Another method is surgical excision of the ganglion cyst under general anesthesia. In this study it is seen that surgical excision of the cyst is far superior method of management with lesser rate of recurrence.

A splint is fitted whether ganglion cyst is aspirated or surgically removed. Complete recovery is seen in 2 to 8 weeks depending upon the site of excised ganglion cyst. Generally, early mobility of the joint is advised. Using splints for extended periods of time can hamper joint mobility and delay recovery.

CONCLUSION

Ganglion cysts are idiopathic in origin and have no definitive treatment with risk of recurrence. Depending upon size and location of the cyst and treatment preference of the patient several management options are available. In this study it is seen that surgical excision of ganglion cyst is far superior method of management in comparison with aspiration and subsequent triamcinolone injection.

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