Research Article

Excision of ganglion cysts of hand: A study of 71 cases

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Abstract

Introduction: Ganglia are one of the most common conditions seen in the outpatient department. Here, we present a study of 71 cases of open excision of wrist ganglia with an average follow up of 11 months and analysis of recurrence rate and complications with reference to the literature. Complete excision with a cuff of capsule around the base is important for minimizing the recurrence rate (4 percent in this series). Proper case selection with correct indications is essential as surgical excision is not warranted in every case.
Keywords: ganglion, excision, recurrence, complications.

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INTRODUCTION

Ganglion is the most common soft tissue tumor of the hand accounting for almost 60-70% of all soft tissue tumors of the hand[1]. Most wrist ganglia are dorsal followed by volar in location. They are more common in females in the second to fifth decades of life[2]. Ganglion is a cyst containing gelatinous, stringy and translucent liquid. The diagnosis is clinically made by history and examination. The etiology and pathogenesis of occurrence of ganglia is still not clear. Angelides and Wallace[3] observed that ganglion communicates with wrist capsule by a tortuous duct functioning like a unidirectional valve pumping synovial fluid into the cyst. A ganglion has to be differentiated from epidermoid inclusion cyst, rheumatoid extensor tenosynovitis, radial artery aneurysm and other benign cysts[4]. Patients come for consultation due to pain, cosmesis or concern for malignancy. From times immemorial, various treatments have been tried like rupture with a Bible or benign neglect or splinting or aspiration alone or with injection of steroid or sclerosants[4,5]. Recurrence rates are in general higher for aspiration or aspiration with injection than surgery i.e. excision alone or with capsulectomy[6,7]. The purpose of this study was to analyze the results of surgical excision of ganglia in a single institution with regards to recurrence, complications and patient satisfaction and comparison with current literature.

METHODS

Seventy one patients underwent surgical excision for ganglion of wrist from 2012 – 2014 in the department of orthopaedics at the Indian Institute of Medical Sciences and Research. Only wrist ganglia with a minimum follow up of six months were included.

Figure 1: Intra operative photograph showing dorsal wrist ganglion being excised

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Most patients were given local anaesthesia with lignocaine and adrenaline except children (general anaesthesia). Transverse incision was taken for dorsal ganglia and longitudinal for volar ones. In all the cases, the cyst was dissected up to its connection with the wrist joint capsule and the whole cyst with a 3mm cuff portion of the attached joint capsule was excised and the margins were electro cauterized to prevent recurrence. Capsule was not repaired. Subcuticular closure was done for good cosmetic results. No splinting was given after surgery. Patients were followed up at 1week, 2weeks, 1month, 3 months, 6months and 1year. Pain relief was evaluated using visual analog scale.

RESULTS

Our mean follow up duration was 11 months. Fifty six were dorsal (78.8%), twelve were volar(16.9%), two on radial(2.8%) and one on ulnar aspect (1.4%)of the wrist.

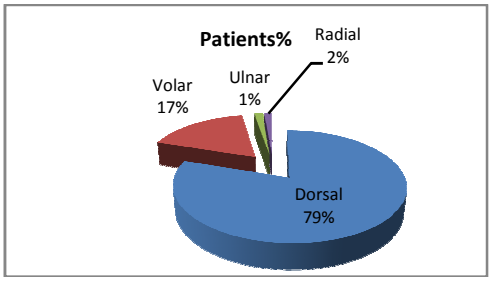

Figure 2: Graph showing distribution of ganglia of wrist by location

Gender was predominantly female in a ratio of 2:1 approximately. The patients aged between 6 to 63 years with an average of 29 years. Fifty four percent patients had surgery for pain in the wrist, thirty one percent for cosmesis and fifteen percent for fear of malignancy. Twenty seven patients (38%) gave history of trauma in the past. At the time of maximum follow up, 85% patients had no pain (VAS=0) and 96% had good pain relief (VAS=0-2). There were 3 recurrences (4%) in this study all within first four months of excision. One patient had severe intraoperative hemorrhage due to a branch of radial artery and also developed superficial infection later. Two patients had scar tenderness which subsided after a couple of months. One patient had a hypertrophic scar while 3 patients had a worsening of pain after surgery.

DISCUSSION

A number of explanations have been proposed to explain the ganglia like herniation of joint capsule, retention cysts, mucoid degeneration, trauma etc. Trauma was noted in a minority of cases in our study and moreover, it was trivial in most cases. Theory of mucoid degeneration has the grave objection that ganglia are fairly common in children[5]. 8% of our cases were paediatric. McEvedy[8] hypothesized that ganglion arises from a bursa. Angelides and Wallace[3] showed that ganglion was attached to the joint capsule and communicated with a tortuous duct. They advocated resection of 1 cm^2 area of joint capsule around the pedicle to reduce recurrence. Mehdian and Mckee[9] reported a case of scapholunate instability following dorsal ganglion excision probably due to overzealous removal of scapholunate ligament. In the present study, we have excised a cuff capsule of 3mm width only to avoid iatrogenic damage to ligaments and cauterized the margins of excised capsule to minimize recurrence. Surgical excision offers the best option in terms of recurrence rate which is lower when compared to aspiration alone or with steroid injection. For ganglion excision, Angelides had the lowest 1% recurrence rate while Clay and Clement[10] reported 3% recurrence. But other studies have given a much higher recurrence rate like zacharie[11] *et al* (34%) and Barnes[2] *et al* (40%) suggesting the importance of surgical technique and a significant learning curve associated with this supposedly simple surgery. There are 3 recurrences (4%) in the current study all of which presented in first four months of surgery, most probably due to insufficient excision. These recurrent cases were all from earliest part of study and no recurrence in the later cases show that better surgical skills and experience can reduce recurrence rate. Complications of the surgery can be numerous like infection, scar tenderness, hemorrhage, keloid formation, scapholunate instability, injury to radial artery, dysaesthesias, loss of motion etc. We suffered complications in 7 patients (10%) which is comparable to other studies[4,5,7]. Patients had good pain relief (97%) overall in the long term. There were 3 patients in whom pain actually worsened. They are from the subgroup of patients who had surgery for cosmetic reasons and did not have significant pain to begin with. Hence, we need to be cautious in advising surgery to such patients where reassurance alone would suffice. In our study, 31% had cosmetic reasons to go for surgery and 15% were afraid of malignancy while only 54% had pain as a cause for seeking treatment. Literature shows that a significant number of ganglia can undergo spontaneous resolution i.e. 40- 58% in various studies[8,11,12]. It can be inferred that non surgical treatments like aspiration, steroids, sclerosants etc with their high recurrence rates are ineffective compared to reassurance given the natural history of spontaneous resolution. A strong case can be made for allaying patients fears about malignancy and proper patient selection for surgery because only roughly half the patients had pain before surgery. Surgical excision has the lowest recurrence rate but it is not without its fair share of complications. Complication rates

can vary from 0-56% across various studies for open excision[12]. Hence, surgical excision should be offered as an option to only those who are symptomatic enough. In conclusion, surgical excision with limited capsulectomy gives acceptable results and is a good option considering the low recurrence rate in patients with correct indications for surgery.

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