



GANGLION CYST, A TREATMENT DILEMMA : WHETHER TO EXCISE OR TAKE A CONSERVATIVE PATH?

Surgery

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ABSTRACT

Background: Ganglia are benign soft tissue tumors most commonly encountered in the wrist, but which may occur in any joint. Most patients present with a painless swelling, some with pain due to pressure on the posterior interosseous nerve and some for cosmetic reasons. Treating a ganglion cyst is a surgeon's dilemma. But very few literature compares Excision vs Aspiration vs Setoning. Hence a study was undertaken to compare the outcomes of all the three treatment options.

Methods: 108 patients who underwent treatment for ganglion wrist at command hospital, Pune from Jun 2016 to Jun 2017 were included in the study. All patients were explained about the natural history of disease and three procedures in detail. The surgeon's preference and patients choice dictated which of the three methods was used. The patients were followed on post op day 2, after 1 week, 3 months and after 6 months.

Results: A total number of 108 pts were recruited into the study out of which 68(62.96%) were females and 40(37.04%) were males. 29 out of 36 in the aspiration group and 15 out of 20 in the setoning group were females. There is a statistical difference in the rate of infection between the three interventions (p-value 0.017, chi-square statistics – 8.09). Highest of 35% in the setoning group, 11.53% in the excision group and lowest of 8.33% in the aspiration group. The recurrence rates were as high as 52.77% in the aspiration group as compared to 15% in setoning and 13.46% in the excision group.

Conclusion: Treating a ganglion cyst is a surgeon's dilemma. Providing the best care for patients is the prime aim. Our study suggest though Setoning provide a comparable recurrence rate but is associated with fairly high rate of infection. And Aspiration though has cosmetically favorable outcome with a low SSI rate but has a significantly high recurrence rate. Thus Surgical excision is the best possible solution with the least complication rates.

KEYWORDS

Introduction:

Ganglia are benign soft tissue tumors most commonly encountered in the wrist, but which may occur in any joint. The dorsal aspect of the wrist is the most common site for a ganglion of the wrist or hand, followed by the palmar aspect of the wrist (Angelides, 1998). The dorsal ganglion arises as a diverticular swelling from the portion of the joint capsule that attaches to the scapholunate ligament. The exact etiology is unknown but analysis of cystic fluid reveals that it is different biochemically and is much thicker than intra-articular synovial fluid. The origin of the fluid has not been fully elucidated, but it has been postulated to arise from one of three mechanisms. First, it may originate from within the joint, pumped into the cyst by motion of the wrist, second, from an extra-articular degenerative process resulting in cyst formation and subsequent communication to the joint, or finally it may originate from mesenchymal cells within the cell wall. It is possible that a combination of these mechanisms contribute.

Most patients present with a painless swelling, some with pain due to pressure on the posterior interosseous nerve and some for cosmetic reasons. Diagnosis is generally clinical based on the history, size, location and consistency.

Many treatment options have been studied separately like observation, surgery, aspiration alone or with steroids and seton. But very few literature compares all the three modalities. Hence a study was undertaken to compare the outcomes of all the three treatment options.

Materials and Methods:

Study Type: Prospective observational study

108 patients who underwent treatment for ganglion wrist at Tertiary care hospital from Jun 2016 to Jun 2017 were included in the study. All patients were explained about the natural history of disease and three procedures in detail. No attempt was made to influence either the treatment received or who administered it and the surgeon's preference and patients choice dictated which of the three methods was used. The patients were followed on post op day 2, after 1 week, 3 months and after 6 months. The outcomes observed were surgical site infection (defined by Southampton grading) and recurrence.

Technique:

All procedure were done taking all aseptic precautions, in operation

theatre after proper consent.

Surgical excision: Using a small incision directly over the ganglion under local anesthesia the cyst identified and the stalk traced till capsule and removed along with a small cuff of joint capsule. Incision was closed after irrigation, haemostasis with 5-0 nylon and sterile dressing applied. Patient was sent home with 3 days of antibiotics and analgesics. The dressing was removed on post op day 2 and left open.

The data was compiled patient-wise in MS-Excel worksheet. Data analysis was done using statistical software SPSS (Statistical Package for Social Sciences) Version 20.0. The p-value was calculated using Chi square test and a value of less than 0.05 were considered significant.

Aspiration :

A 14 gauge IV cannula was used to puncture the ganglion and the metallic needle was removed. Using a 20 ml syringe the contents of the cyst were aspirated with simultaneous pressure over the ganglion with thumb. No anesthesia was used and the site of puncture was covered with a sterile dressing. Patient were sent home on SOS oral analgesia and without antibiotic. The dressing was removed on post op day 2 and left open.

Setoning:

The No 1 silk suture was used for setoning. After stabilization of the ganglion with index finger and thumb, the ganglion was pierced from one side and removed from other. The seton was fixed with a knot. The location of seton in ganglion confirmed by transparent material from the puncture site. Sterile dressing was applied. Patient was sent home with 3 days of antibiotics and analgesics. The dressing was removed on post op day 2 and patient was advised to move the seton at least 15 times a day. Seton was removed on post op day 7 or if SSI is noticed whichever is earlier.

Results:

A total number of 108 pts were recruited into the study out of which 68(62.96%) were females and 40(37.04%) were males. The age of the study population was between 8 yrs to 62 yrs with an average of 31.18 yrs. Ganglions were predominantly encountered on the right side (59.25%).

1. Preference: 29 out of 36 in the aspiration group and 15 out of 20 in the setoning group were females. However almost equal male: female ratio in excision group.(Table 1)

Table 1. Demography of the study population

2.Complications:

	Excision	Aspiration	Setoning	p-value
Male	28	7	5	0.0021
Female	24	29	15	
Age(average in years)	32.23	14.33	35.85	
min (yrs)	14	8	26	
Max (yrs)	62	21	50	
Total	52	36	20	

a)Surgical site infection: There is a statistical difference in the rate of infection between the three interventions(p-value 0.017, chi-square statistics – 8.09). Highest of 35% in the setoning group , 11.53% in the excision group and lowest of 8.33% in the aspiration group.

Table 2. SSI rates with different interventions

SSI	Excision	Aspiration	Setoning	Total
Yes	6	3	7	16
No	46	33	13	92
Total	52	36	20	108

Chi-square : 8.09 , p-value -0.17

- a)**Recurrence:** The recurrence rates were as high as 52.77% in the aspiration group as compared to 15% in setoning and 13.46% in the excision group

Table 3. Recurrence rates with different interventions

Recurrence	Excision	Aspiration	Setoning	Total
Yes	7	19	3	29
No	45	17	17	79
Total	52	36	20	108

Chi-square : 18.49 , p-value -0.000096

Discussion:

Ganglion is a benign herniation of the joint capsule containing synovial fluid. Though most are asymptomatic , surgeons are frequently consulted either because of pain or cosmesis. Though spontaneous resolution of ganglion has been reported of around 40-50%. Any intervention for the palmar wrist ganglion, whether by aspiration or by excision or by setoning, which provides less recurrence and fewer complications is justified.

In our study majority of young females choose aspiration than surgery. Average age of patients preferring aspiration was 14.33 yrs vs 32.23 yrs and 35.85yrs in excision and setoning group. This female preference towards aspiration and setoning can be explained as this group is more cautious about post-op scar.

Surgical site infection was more commonly see in the setoning group(35%) as compared to the excision (11.53%) and aspiration (8.33%). This high complication rate can be explained by the presence of foreign body (No1 silk) in the setoning group leading to inflammation and infection. However Farzana M et al have reported a far less complication rate(5%).

Recurrence in our study was 52.77% in the aspiration group, 15 % in the setoning group and 13.46% in the surgical group. Varley et al has mentioned 67% recurrence in case of aspiration, which was confirmed by Dias JJ et al in his study as 47%.

Conclusion:

Treating a ganglion cyst is a surgeon's dilemma. Providing the best care for patients is the prime aim. Our study suggest though Setoning provide a comparable recurrence rate but is associated with fairly high rate of infection. And Aspiration though has cosmetically favorable outcome with a low SSI rate but has a significantly high recurrence rate. Thus Surgical excision is the best possible solution with the least complication rates.

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