

Evidence-based answers from the
Family Physicians Inquiries Network

CLINICAL INQUIRIES



Q/What is the best treatment for wrist ganglion cysts?

EVIDENCE-BASED ANSWER

A | OPEN SURGICAL EXCISION of wrist ganglion cysts is associated with a lower recurrence rate than aspiration with or without corticosteroid injection (strength of recommendation [SOR]: **B**, systematic review of randomized clinical trials [RCTs] and observational trials

and RCT).

Even though the recurrence rate with aspiration is about 50%, most patients are satisfied with aspiration and report a decrease in symptoms involving pain, function, and range of motion (SOR: **B**, individual cohort and case series).

Evidence summary

A 2015 meta-analysis of 35 studies (7 RCTs, 6 cohort studies, 22 case series) of 2239 wrist ganglion cysts examined the recurrence rate of cysts after common treatments.¹ Two RCTs and 4 cohort studies compared open surgical excision with aspiration with or without corticosteroid injection.

The RCTs found significantly lower recurrence rates following open surgical excision compared with aspiration (2 trials; 60 cysts; risk ratio [RR] = 0.24; 95% confidence interval [CI], 0.08-0.71; number needed to treat [NNT] = 3). The cohort studies likewise found markedly less recurrence of cysts after open surgical excision than aspiration (4 studies; 461 cysts; RR = 0.42; 95% CI, 0.21-0.85; NNT = 4). Recurrence rates didn't differ between aspiration and observation (2 cohort studies; 209 cysts; RR = 0.99; 95% CI, 0.77-1.28).

Overall, the RCT evidence was of moderate quality because of a lack of significant heterogeneity, and the cohort evidence was graded as very low quality because of heterogeneity.

More evidence of lower recurrence with surgical excision

A 2014 prospective RCT, not included in the foregoing meta-analysis because it was pub-

lished after the search date, compared ganglion cyst recurrence at 6 months for 2 groups: one group received aspiration accompanied by corticosteroid injection and the other had surgical treatment.² The trial included 173 patients ages 16 to 47 years with 187 ganglia of the wrist, ankle, or knee (143 wrist ganglia). Patients were excluded if they had a history of recurrent ganglia, prior treatment of ganglia, nearby joint injury, bleeding disorders, pregnancy, compound palmar ganglion, ganglion near arteries, infected ganglion, ganglion associated with arthritic disease, or ganglion measuring < 5 mm in size.

Patients were allowed to choose aspiration with corticosteroid injection or surgical excision. The aspiration group (143 ganglia: 106 wrist, 21 ankle, 16 knee) underwent aspiration using a 19-gauge needle and 10-mL syringe followed by injection of 0.25 to 1.0 mL of triamcinolone acetonide. Aspiration and injection were repeated if indicated at either 6 weeks or 3 months. The surgical excision group comprised 44 ganglia: 37 wrist and 7 ankle.

The success rate at 6 months following aspiration with corticosteroid injection was 81% compared with 93% after surgical excision (NNT = 8). Surgical treatment was associated with significantly less recurrence than aspiration and injection (7% vs 19%; $P < .028$).

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Patients report symptomatic improvement after aspiration

A 2015 retrospective case series assessed the long-term outcomes of 21 patients following aspiration of wrist ganglia.³ The patients, who were 41 to 49 years of age, each had a single wrist ganglion that was treated with aspiration between 2001 and 2011 by a single surgeon. Mean time to follow-up was 6.3 years. Outcomes reviewed included recurrence, satisfaction, and improvement in symptoms—pain, function, range of motion, and appearance—using a 1 to 5 Likert scale (1 = significantly worse; 5 = significantly improved).

Overall, 52.4% of patients experienced recurrence of their ganglia. However, 95% expressed satisfaction with treatment independent of recurrence. Mean symptom scores improved from baseline for pain (4.1 points), function (3.9 points), range of motion

(3.8 points), and appearance (4.1 points). Improvements in all symptoms were independent of recurrence.

Aspiration plus steroids results in 43% recurrence rate

A 2015 prospective study examined the recurrence rate at 1 year after therapy in 30 patients, ages 15 to 55 years, with a wrist ganglion treated by aspiration and steroid injection.⁴ Patients chose aspiration and steroid injection with 40 mg/mL methylprednisolone acetate over reassurance or surgical intervention. The recurrence rate at 1-year follow-up was 43.3% (13 patients).

Editor's takeaway

Surgical excision of ganglion cysts results in fewer recurrences than aspiration. However, moderately high-quality evidence shows that both methods help most patients. **JFP**

References

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