

COMPARATIVE STUDY OF ASPIRATION WITH TRIAMCINOLONE INJECTION
VERSUS SURGICAL EXCISION IN THE MANAGEMENT OF DORSAL WRIST
GANGLIONS: A PROSPECTIVE ANALYSIS

Surgery

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ABSTRACT

Background: Dorsal wrist ganglions are common benign cystic lesions. Treatment options include aspiration with corticosteroid injection and surgical excision. This study compares both techniques for resolution, recurrence, and complications. **Methods:** Sixteen patients with dorsal wrist ganglions were divided into two groups: aspiration with triamcinolone injection (n=8) and open surgical excision (n=8). Outcomes were followed for 18 months. **Results:** Immediate resolution was 100% in both groups. Recurrence occurred only in the surgical group (12.5%). Postoperative pain and functional limitation were significantly higher in the surgical group. **Conclusion:** Aspiration with triamcinolone is minimally invasive and highly effective, with lower morbidity and no recurrence in this cohort. It may be preferred as first-line treatment.

KEYWORDS

Dorsal Wrist Ganglion, Aspiration, Triamcinolone, Surgery, Recurrence, Pain

INTRODUCTION

Dorsal wrist ganglions arise from joint capsules or tendon sheaths and are filled with mucinous fluid. Though benign, they may cause discomfort, reduced motion, and cosmetic concern. Aspiration with corticosteroid injection offers a non-surgical solution, while open excision aims to eliminate recurrence. This study compares both approaches for efficacy, complications, and recurrence.

MATERIALS AND METHODS

Study Design and Population

- Prospective comparative study conducted from Jan 2023 to Dec 2024.
- 16 patients clinically diagnosed with dorsal wrist ganglions.
- Inclusion Criteria:** Age 15–50, primary ganglion, consent for follow-up.
- Exclusion Criteria:** Volar ganglions, recurrent cysts, immunocompromised state.

Group Allocation

- Group A:** Aspiration + intralesional triamcinolone (1 mL, 40 mg/mL) — 8 patients
- Group B:** Open surgical excision — 8 patients

Follow-up Protocol

- Follow-up at 1 week, 1 month, 6 months, and 18 months.
- Outcomes:
 - Resolution
 - Recurrence
 - Post-procedural pain (subjective scale, analgesic use)
 - Functional limitation (wrist mobility)

RESULTS

Table 1: Comparative Outcomes of Aspiration vs. Surgical Excision

Parameter	Aspiration Group (n=8)	Surgical Group (n=8)
Immediate Resolution	100%	100%
Recurrence	0%	12.5% (1 patient)
Post-procedure Pain	25% (2 mild cases)	100% (8 moderate cases)
Duration of Analgesic Use	1–2 days	5 days
Wrist Mobility Restriction	None	All patients (7–10 days)
Time to Resume Daily Activity	3 days	7–10 days

Figure 1: Recurrence Rate in Both Groups

(Bar Chart – X-axis: Group; Y-axis: % Recurrence)

- Aspiration Group: 0%
- Surgical Group: 12.5%

Figure 2: Postoperative Pain Incidence

(Bar Chart – X-axis: Group; Y-axis: % with Pain)

- Aspiration Group: 25%
- Surgical Group: 100%

DISCUSSION

This study demonstrated that aspiration with corticosteroid injection offers comparable efficacy to surgical excision, with significantly fewer complications. The absence of recurrence in the aspiration group supports the anti-inflammatory effect of triamcinolone in suppressing mucin secretion and sealing the cyst tract.

Previous studies (Thornburg, 1999; Head et al., 2015) noted high recurrence with aspiration alone but improved outcomes with steroids. Our findings also align with Angelides and Wallace's (1976) anatomical insight into ganglion tract pathology.

Despite surgical excision being definitive, it was associated with higher morbidity, longer recovery, and recurrence in one patient—highlighting the need to consider patient comfort and outcomes.

CONCLUSION

Aspiration with triamcinolone is:

- Safe: No infections or complications in this study.
- Effective: 100% immediate resolution.
- Low recurrence: 0% in 18-month follow-up.
- Preferred first-line treatment, especially in young or active patients.

Surgical excision remains useful for recurrent or non-resolving cases but is associated with more pain and temporary functional limitations.

Limitations

- Small sample size (n=16)
- Short follow-up (1.5 years)
- Single-center design
- No objective scoring system for pain/function (e.g., DASH)

Future Recommendations

- Larger randomized controlled trials
- Longer follow-up (3–5 years)
- Use of PROMs (Patient-Reported Outcome Measures)
- Comparison with ultrasound-guided aspiration

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