Open versus Percutaneous Management of Pediatric Ganglia: A 12-Year Comparison

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INTRODUCTION:
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Our institution previously published on percutaneous ultrasound guided ganglia fenestration (PUGG) showing comparable recurrence rates to surgical excision. This study aims to further expand the complications and recurrence profile associated with PUGG compared to surgical excision
METHODS: A retrospective chart review was conducted for pediatric patients undergoing hand or wrist ganglia excision and/or PUGG from September 2012 to April 2024 at a single tertiary pediatric hospital. Patient demographics, treatment history, operative details, complications and recurrence were collected. Continuous variables were analyzed using independent t-tests, and categorical variables were analyzed using chi-square and Fisher exact tests.
RESULTS:
301 patients were included in this study, representing 311 ganglia. Female to male ratio was 2:1. Average age was 12.7 years (SD 3.98) at the time of treatment, and length of follow up was 6.4 months (SD 11.9). Most ganglia were seen in the dorsal wrist (66.2%), followed by the volar wrist (28.6%).

208 patients (66.9%) underwent surgical excision, while 95 (66.9%) underwent PUGG. There were no differences in sex, race, ethnicity, or social vulnerability index. Surgical patients were on average 1 year younger than those receiving PUGG (p=0.0404). Surgical patients had more frequently failed prior nonsurgical therapy (p=0.0038), but prior surgery was rare amongst both modalities. Patients who underwent PUGG experienced recurrence 2.2 times more frequently than surgical patients (p=0.0001). There were no differences in the frequency of reoperation between modalities.
DISCUSSION AND CONCLUSION:
Aside from having failed prior nonsurgical therapy and being younger, there were no demographic differences between patients undergoing surgery and PUGG. PUGG technique started in 2016 with recurrence rates of 14%. However, changes in technique after 2019 led to higher recurrence. Technique has since been modified in 2023 to reflect similar to prior technique, current risk profile data in collection. Our study demonstrates the rate of recurrence following surgical excision to be clinically and statistically lower than PUGG, though PUGG represents a more successful minimally invasive treatment modality than prior techniques. Ongoing research will incorporate a larger sample and cost-analyses.