Management of Juvenile Psammomatoid Ossifying Fibroma: A Systematic Review

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INTRODUCTION

Juvenile psammomatoid ossifying fibroma (JPOF) is a rare, benign, and locally aggressive fibro-osseous tumor of the craniofacial skeleton. This systematic review summarizes clinical presentation, surgical management, and outcomes from 127 articles and it includes 142 patients.

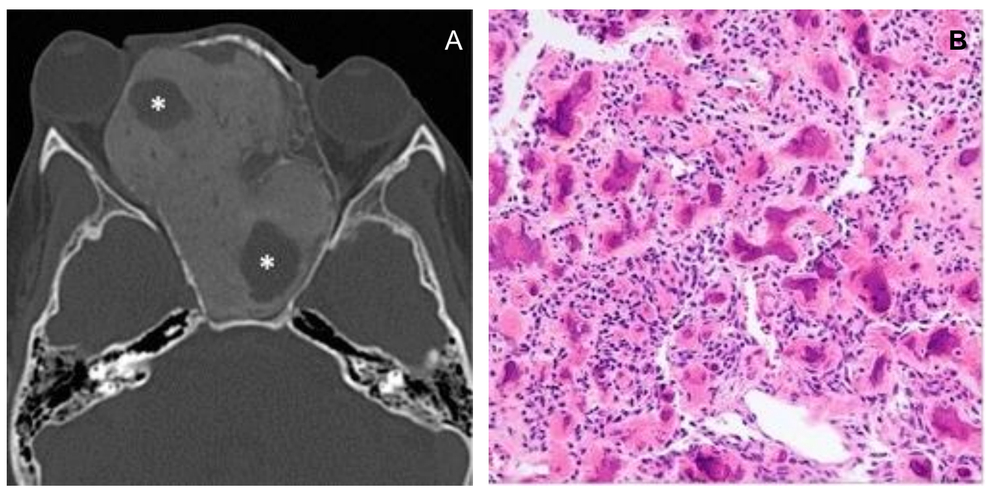


Figure 1. (A) Axial CT showing expansile ethmoid lesion with ground-glass opacity causing proptosis. (B) Histopathology displaying characteristic psammoma bodies. *Image adapted from Becker et al. (2017), CC BY 4.0.*

RESULTS

Demographics

- **Median age:** 15 years old
- **Age range:** 3 months – 68 years
- **Gender:** 54.1% male

Symptoms

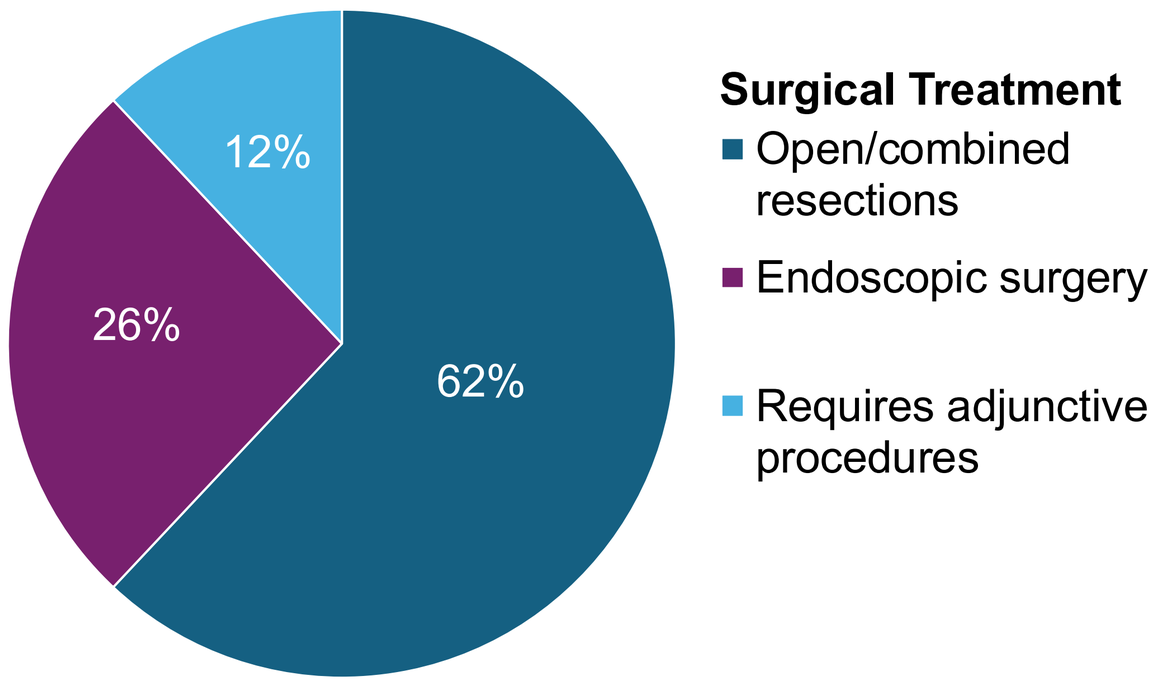
- **Duration:** 3 days – 20 years
- **Most common symptoms:**
  - Facial swelling (64.8%)
  - Proptosis (47.2%)
  - Nasal obstruction (34.5%)

Physical Characteristics of Tumor

- **Most common sites:**
  - Maxilla (36.6%)
  - Mandible (25.4%)
- **Lateralization:**
  - Left-sided (50.7%)
  - Right-sided (33.8%)
  - Midline/bilateral (15.5%)
- **Size:**
  - Median size: 4.7 cm
  - Range of sizes: 1.0 – 20.0 cm

Surgical Treatment

- Open/combined resections (62.0%)
- Endoscopic surgery (26.0%)
- Required adjunctive procedures (12.0%) such as
  - Orbital decompression
  - Craniofacial reconstruction



Follow-Up

- **Median follow-up:** 12 months
- 14.8% experienced recurrence, usually within 1 year, and were managed with endoscopic or open revision procedures

DISCUSSION & CONCLUSIONS

The cumulation of data indicated that JPOF most frequently arose from the maxilla, mandible, or ethmoid sinus, with additional sinonasal and craniofacial extension. Surgical excision was the mainstay of treatment. The recurrence rates support need for consistent long-term follow-up.

METHODS

This was a systematic review that utilized PubMed, Embase, Scopus, and Web of Science. We searched for studies from 2000 – 2025 using terms including “juvenile ossifying fibroma” and “psammomatoid.” Following PRISMA guidelines, studies were included if they reported histopathologically confirmed JPOF with surgical details.

REFERENCES & ACKNOWLEDGMENTS

Becker M, Stefanelli S, Rougemont AL, et al. Non-odontogenic tumors of the facial bones in children and adolescents: role of multiparametric imaging. *Neuroradiology*. 2017;59(4):327-342.

Keywords: Juvenile psammomatoid ossifying fibroma; JPOF; fibro-osseous lesion; sinonasal tumors; craniofacial tumors

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