

Microtia Reconstruction and Auricular Anomalies in Facio-Auriculo-Vertebral Spectrum: A 25-Year Experience

Janey Lee, BS¹, Lucy Sheahan, MD², Avery Apostle, BA³, Jenna Stelmar, BS¹, Melissa Kanack, MD², Benjamin Massenburg, MD², Amanda Gosman, MD²
¹ School of Medicine and ² Division of Plastic Surgery, University of California San Diego, San Diego, CA ³ California University of Science and Medicine, Colton, CA

Objectives

- Measure prevalence and type of auricular anomalies in facio-auriculo-vertebral spectrum (FAV)
- Assess surgical management of FAV, focusing on microtia reconstruction

Methods

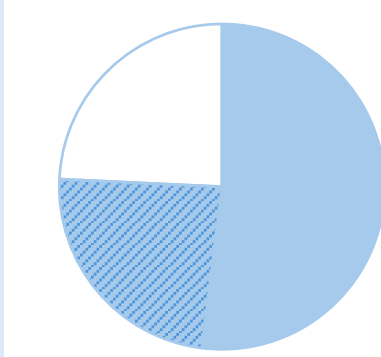
- Retrospective review
- Patients with FAV seen by Craniofacial team or Genetics Dysmorphology (1999-2025)
- Cohort
 - $n = 201$
 - Median age at presentation 0.6 years [IQR 0.2–1.9]
 - Median age at last follow-up 9.5 years [IQR 3.9–15.2]
- Variables
 - Craniofacial features
 - Surgical history
- Analysis
 - Descriptive statistics
 - ANOVA compared number of surgeries and age at surgery

Results

201 patients with FAV

→ Mean of 3.1 surgeries (SD 3.9); 74% of patients ($n=148$) had ≥ 1 surgery

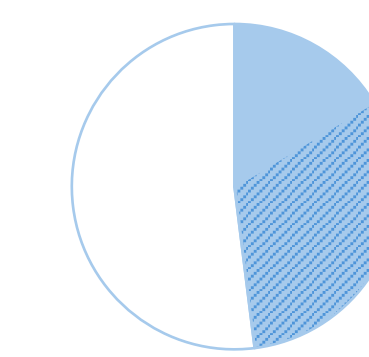
→ Mean of 1.9 craniofacial surgeries (SD 2.7); 61% of patients ($n=123$) had ≥ 1 craniofacial surgery



76% have microtia ($n=153$)

→ 31% underwent microtia reconstruction

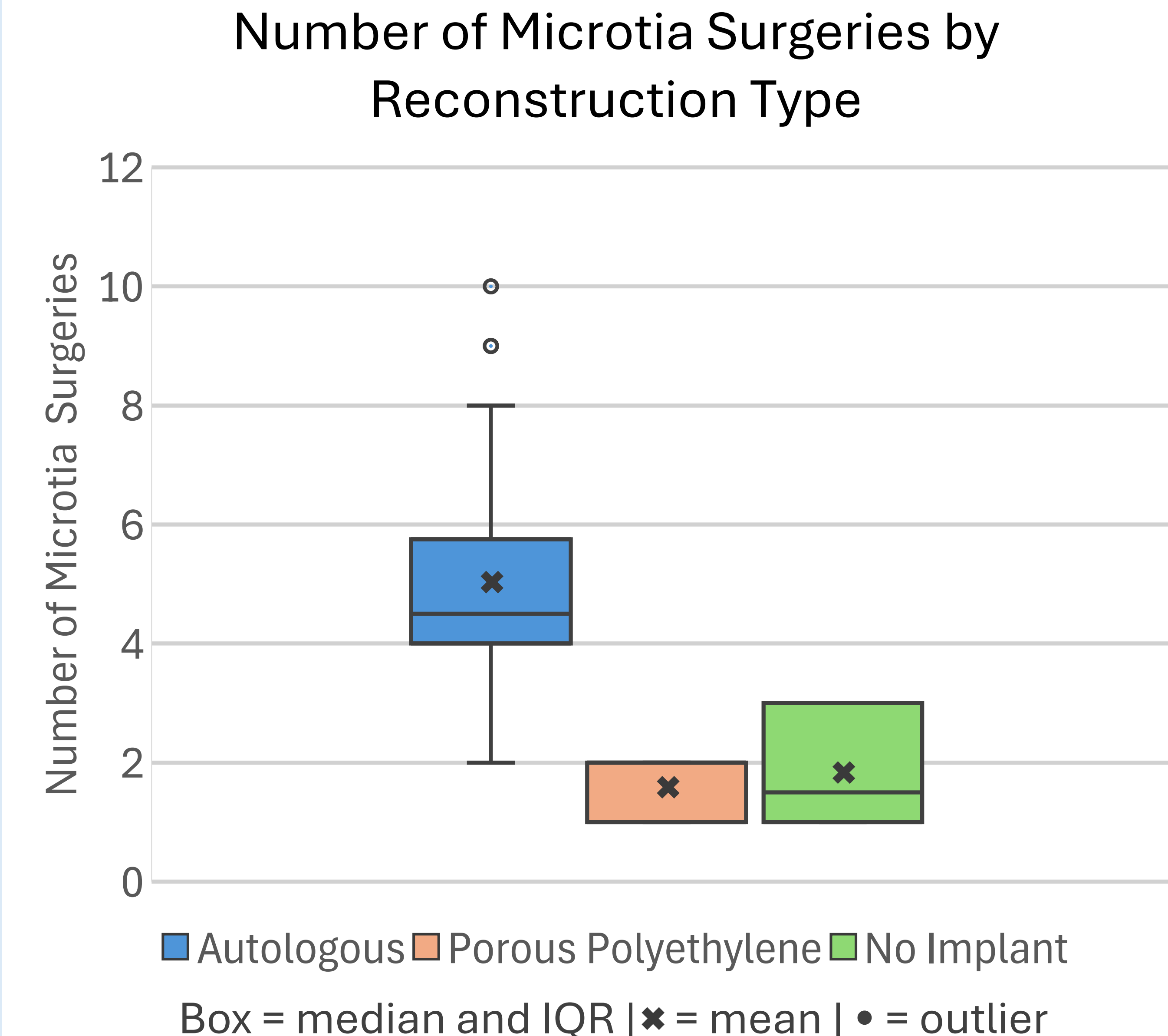
- Mean of 3.7 reconstructive surgeries (SD 2.2)
- Autologous reconstruction was associated with more surgeries and later age at last surgery



48% have accessory tragi ($n=96$)

→ 66% underwent excision

- Mean age at surgery was 1.7 years (SD 2.3)
- Accessory tragi excision was the first surgery for 78% of these patients



	n	Mean Number of Surgeries	Mean Age at First Surgery in years	Mean Age at Last Surgery in years
Total	48	3.7 (2.2)	7.9 (3.0)	10.1 (4.0)
Autologous	30	5.0 (2.1)	8.4 (2.4)	11.5 (3.7)
Porous Polyethylene	12	1.6 (0.5)	6.5 (2.6)	7.0 (2.6)
No Implant	6	1.8 (1.0)	7.6 (5.5)	10.3 (4.8)
Grade I Microtia	2	1.0 (0.0)	13.0 (0.0)	13.0 (0.0)
Grade II Microtia	5	2.2 (0.8)	6.6 (3.4)	9.8 (3.0)
Grade III Microtia	41	4.0 (2.3)	7.8 (2.8)	10.0 (4.2)

Conclusions

- Microtia was the most common craniofacial feature and a major driver of surgical intervention
- Reconstruction type influences surgical burden and timing
- Porous polyethylene enables fewer procedures at earlier ages
- Findings support counseling on variability in FAV presentation and reconstructive pathways



Figure 1. Examples of pre- and post-operative microtia reconstruction with autologous cartilage (top) and porous polyethylene (bottom)