

Fibrous Incudostapedial Joint in Congenital Aural Atresia

Objectives:

1. Determine the prevalence of a non-bony or fibrous incudostapedial (IS) joint in the setting of congenital aural atresia.
2. Assess this anomaly's impact on surgical management and associated hearing outcomes.

Methods: Operative reports and audiometric data of patients who underwent congenital aural atresia repair by a single surgeon from 2007-2011 were reviewed for operative anatomic findings and audiometric outcomes.

Results: 228 operations on 206 ears were performed. Median age was 5 years old. 55 (26.7%) of these ears had a fibrous IS joint. The severity of this anomaly was graded as mild in 23 ears, moderate in 20 ears, and severe in 12 ears. Average postoperative PTA2 in the severely fibrous group was 51 compared to 46 in the moderate group ($p=0.03$) and 41 in the mild group ($p=0.006$). Patients with a fibrous IS joint who underwent successful ossicular chain reconstruction (OCR) had an average postoperative PTA2 of 30, which was a significantly better outcome than in patients with moderately or severely fibrous IS joints who did not have OCR ($p<0.05$).

Conclusion: A fibrous IS joint was seen in 27% of patients undergoing repair of congenital aural atresia. The severity of this anomaly has important implications for postoperative hearing results. These findings suggest that ossicular chain reconstruction should be performed in moderately or severely fibrous cases.