

MOTIVATION

- Contribute to the limited clinical data on the etiology and management of acquired ear canal atresia.

QUESTIONS

- What were the most common etiologies within our patient population?
- Did hearing improve post-op?
- What was the rate of hidden cholesteatoma?

APPROACH

- Retrospective case series
- Resection of fibrotic plug via meatoplasty and canaloplasty +/- mastoidectomy +/- tympanoplasty
- Ear canal reconstruction with STSG

RESULT

- Most common etiology: Chronic otitis
- No patients with recurrent atresia
- All patients with better hearing post-op
- Rate of cholesteatoma: 46%**

CONCLUSION

- Consider the presence of **cholesteatoma** when deciding workup and treatment for patients with acquired ear canal atresia

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Introduction

Acquired ear canal atresia is a rare pathology with possible etiologies including inflammatory, traumatic, iatrogenic, and neoplastic. Hidden cholesteatoma (trapped squamous epithelium), within the ear canal and medial to the atretic segment, has been described. Literature that guides management and describes surgical technique and outcomes is limited.

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Methods

This is a retrospective case series of patients who underwent surgery for acquired ear canal atresia by a single surgeon in New Orleans, LA, from 2018-2023. Etiology, type of surgery, the thickness of the fibrotic plug, presence of cholesteatoma, integrity of the tympanic membrane (TM), subjective improvement of hearing, and follow-up period were recorded. When available, change in the air pure tone average (PTA) and word recognition score (WRS) pre- versus post-op were reported.

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Results

Thirteen patients (Male=8), with a mean age of 50yrs, underwent surgery for acquired ear canal atresia. The average thickness of the plug in the axial plane was 8mm in ten patients. The etiology of atresia and key intra-operative findings are summarized in **Table 1**. Notably, the rate of cholesteatoma was 46%. The ear canal skin was reconstructed with a split-thickness skin graft (STSG) in ten (80%) patients, **Figure 1**. Donor sites included the auricle (n=6, 60%) and leg (n=4, 40%). Thus far, the follow-up period ranges from 1 week to 4 years. Atresia has not recurred for any patient. Every patient has reported improved subjective hearing. The changes in PTA are shown in **Chart 1** for the four available patients, at an average 4 months post-op. There was an average improvement of 21dB for PTA. Three patients had available pre- and post-op WRS data. Two patients remained at 96% and 100%, and the other improved by 16% at average seven months post-op.

Table 1: Etiology and Key Findings

	N (%)
Etiology	
Chronic infection	7 (54%)
Traumatic	3 (23%)
Post-surgical	3 (23%)
Neoplastic	0 (0%)
TM violated / damaged	7 (54%)
Cholesteatoma	6 (46%)

Chart 1: Pre- vs. Post-op PTA (dB)

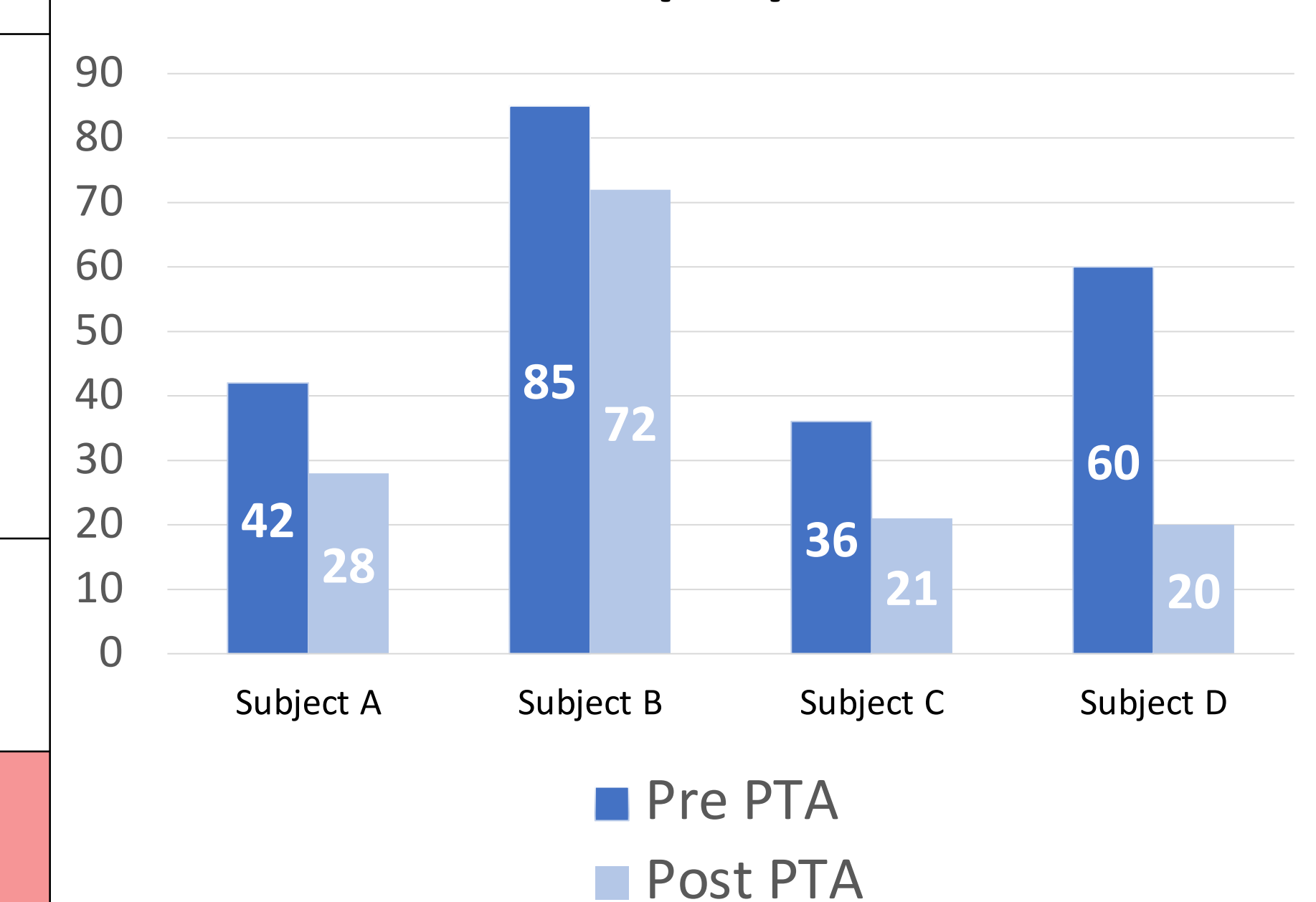


Figure 1:

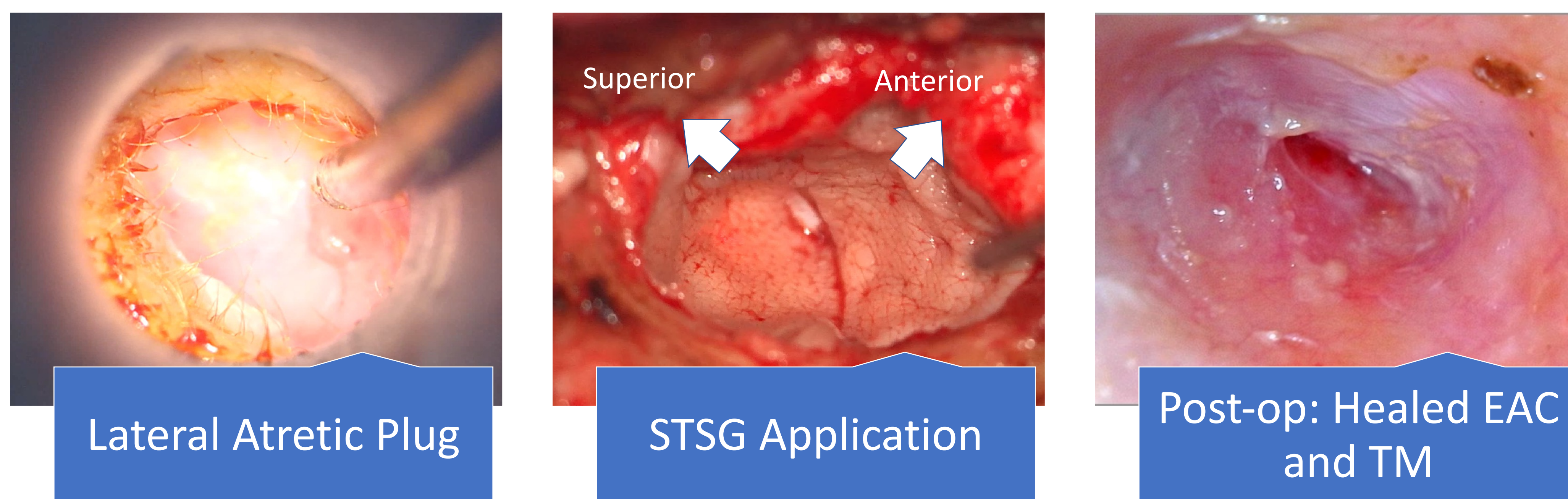


Figure 2:



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Conclusions

- Surgical repair of acquired ear canal atresia is possible with EAC grafting
- Hidden cholesteatoma was identified in nearly half (46%) of our patients.**
- MRI with DWI can be performed to evaluate for cholesteatoma if surgery not pursued, **Figure 2**
- This study is ongoing and has now accrued 15 patients (16 surgeries) with the following data:
 - Rate of cholesteatoma: 56%
 - Patient reported hearing improvement: 88%