

## Post-stapedotomy reparative granuloma following use of acellular porcine small intestinal submucosa

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### Abstract

**Introduction:** There have been multiple proposed etiologies of reparative granuloma following stapes surgery. This study presents the first case of post-stapedectomy reparative granuloma following the use of Biodesign (Cook Medical, Bloomington, IN) otologic graft material, an acellular matrix derived from porcine small intestinal submucosa. It includes a review the literature of post-stapes surgery reparative granuloma.

**Case:** 50-year-old woman developed a reparative granuloma following stapedotomy for otosclerosis with graft of acellular porcine intestinal submucosa. She presented post op with profound hearing loss and vertigo confirmed with audiogram. Oral steroids provided temporary mild relief followed sudden recurrence of severe symptoms. Middle ear exploration was performed and granuloma was found centering on the acellular matrix material used and overlying the footplate and a part of the piston. Surgical excision of granuloma and revision stapedotomy was done with fascial graft which resolved vertigo. Audiologic outcomes as measured by pure-tone air and bone conduction thresholds and word recognition scores showed improvement in vertigo. Hearing has improved progressively postoperatively.

**Conclusions:** This study reports the first case of post-stapedotomy reparative granuloma following the use of acellular porcine intestinal submucosa. A literature review was conducted finding 370 reported cases of reparative granuloma following stapes surgery with their respective implicated etiologies. Various hypothesis for the pathogenesis of reparative granuloma have been posed in the literature, mainly foreign body reaction, but also processes that could be autoimmune, allergic, pyogenic, exacerbated otosclerosis, or post-fistula irritation. Although exact pathogenesis cannot be determined from a single case report, the granuloma in this case was clearly centered around the acellular porcine small intestinal mucosa graft material. This illustrates the need for careful use of novel foreign graft material and calls for further investigation into this specific material. This case additionally confirms that removal of granuloma and inciting materials can salvage serviceable hearing.

### Biography

Talha U Ghazi is a third year medical student pursuing Radiology. He is the senior editor coordinator for the Medical Student Research Journal at the Michigan State University. He has previous publications in Neurocardiophysiology and Otoneurology. His current projects involve dental pain in sinusitis, the efficacy of multidisciplinary airway teams, functional swallowing outcomes before and after head and neck Oncological surgery, and the utility of CT scan hounsfield units in diagnosis of osteoporosis. Outside of his medical interests, Talha enjoys handywork, the outdoors, and classical Arabic literature.



[9<sup>th</sup> International Conference on Clinical Case Reports](#) | May 07, 2021

**Citation:** Talha U Ghazi, Post-stapedotomy reparative granuloma following use of acellular porcine small intestinal submucosa, Clinical Case Reports 2021, 9th International Conference on Clinical Case Reports | May 7th, 2021, 01