

**The Use of Allogenic Cadaveric Cartilage in Type III Microtia Auricular Framework Reconstruction**

**Purpose:** Allogenic cartilage is commonly used for grafts in nasal reconstruction surgery; however, limited information exists on its use in total ear reconstruction for type 3 microtia. In this case series we describe the novel use of allogenic cartilage for auricular framework construction in ear reconstruction.

**Methods:** Patients requiring total reconstruction of the auricle from August 2020 to October 2021 were eligible and underwent ear reconstruction using cadaveric costal cartilage from MTF biologics; Edison, New Jersey. Patients were evaluated for surgical site infection (SSI), skin necrosis, cartilage warping, and cartilage exposure during regular follow up visits.

**Results:** A total of seven ear reconstruction procedures using cadaveric costal cartilage were performed across five patients; all ears were classified as type 3 microtia. Patients ranged from 5 – 51 years old at the time of surgery. Follow up time ranged from 12 weeks to 57 weeks (mean follow up time 28 weeks). No patients experienced SSIs or significant cartilage resorption. One patient experienced construct exposure in the immediate post-op period, which was successfully salvaged with a local flap. One patient required explantation of the construct after reconstruction for a complicated revision surgery involving a previous TPF flap.

**Conclusion:** Cadaveric costal cartilage serves as a viable alternative to alloplastic material and autologous rib cartilage for construction of auricular frameworks during ear reconstruction. Longer follow up times and a larger sample size is needed for assessment of long-term efficacy.