

# 2<sup>nd</sup> European Otolaryngology ENT Surgery Conference & International Conference on Craniofacial Surgery

Hyo Wan Suh, J Otol Rhinol, 6:6  
DOI: 10.4172/2324-8785-C1-006



October 16-18, 2017 Rome, Italy

## Resorbable mesh plate and human cancellous bone allograft, strong means of reconstructive modality for orbital medial wall defect

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**Rationale:** Medial orbital wall fracture is one of the most common fractures after facial trauma. It is essential to reduce and reconstruct bony defect adequately in this area. Among many reconstructive methods, alloplastic material has attracted attention because it is safe and simple. We previously reconstructed the orbital medial wall by attaching artificial bone substitutes to resorbable plates. Comparing with porous polyethylene plate, this was relatively effective implying minimal complications. However, resorbable plates' stiffness made it difficult to match the defect size precisely, and artificial bone's solidness possessed limitation for accurate volume filling. Therefore, we attempted to reconstruct the medial orbital wall with new paradigm. Resorbable plate was substituted for flexible resorbable mesh plate which enables insertion of matrix easily with small incision, and artificial bone was replaced with human cancellous bone allograft (Genesis Sponge, Hanmi Medicare, Inc., Songpa-gu, Seoul, Korea, Republic of) with a good volume filling effect and bearing power.

**Materials & Methods:** A total of 78 patients of medial orbital wall fracture treated with resorbable mesh plate and human cancellous bone allograft were included in the study. We compared the outcomes between the resorbable mesh plate plus allograft group and the resorbable plate plus artificial bone substitute group. Surgical results were evaluated by clinical presentation, exophthalmometry, and computed tomography minimum 6 months postoperatively. Orbital medial wall width discrepancy and orbital volume change between pre- and post-op were also calculated by CT scan.

**Results:** The average orbital volume change and orbital medial wall width discrepancy were not different between two groups. Also, changes in exophthalmometric measurements were not significantly different between the two groups. No significant postoperative complication such as permanent diplopia, proptosis, and enophthalmos were noted.

**Conclusions:** Use of a resorbable mesh plate with bone allograft to repair orbital medial wall defect yielded long-lasting, effective reconstruction without significant complication. In addition, the resorbable mesh plate with allograft has the advantage of easy fixation of the defect size of the orbital medial wall, with faster operation time. We, therefore, propose our approach as an effective alternative method for orbital medial wall reconstruction.

### Biography

Hyo Wan Suh is a 4th year resident in Plastic and Reconstructive Surgery Department, Uijeongbu St. Mary's Hospital. His main job in the hospital includes assisting & performing surgery, seeing patients in outpatient clinic. He worked as a Director of a branch office of the Public Health Center as substitute program of military service for 3 years. He graduated from Catholic University of Korea in 2009, majoring in Medicine. He has certified in ECFMG 2011.

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