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Combined maxillary sinus floor elevation and endonasal endoscopic sinus surgery for coexisting inflammatory sinonasal pathologies: a one-stage double-team procedure

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Abstract

Objectives: To report our experience with combined one-stage double-team maxillary sinus floor elevation (SFE) and endonasal endoscopic sinus surgery (ESS) procedure for concomitant inflammatory sinonasal pathologies.

Material and methods: Clinical records of all patients that underwent maxillary SFE in conjunction with endonasal ESS for the treatment of inflammatory sinonasal pathologies between 2011 and 2013 were retrospectively reviewed. All included patients had a sinonasal-related pathology that was first suggested by the referring physician and was later confirmed clinically and radiographically by our combined team comprised of otorhinolaryngologist and maxillofacial surgeons.

Results: Fifteen combined SFE+ESS surgeries were performed using either xenograft–allograft mixture or autograft–xenograft–allograft mixture. The study group included seven males and eight females, whose median age was 55 years (range, 45–78 years). Seven patients underwent a unilateral SFE, and eight patients underwent bilateral SFEs. During the same session, four patients also underwent septoplasty for deviated nasal septum, five patients underwent bilateral maxillary antrostomy, 10 patients underwent unilateral maxillary antrostomy, and six patients underwent maxillary sinus cyst resection. Seven combined procedures were performed under active infection. There were no intra-operative complications, and all SFE+ESS combined procedures were successful. Three patients required extended postoperative antibiotic treatment for persistent sinusitis. One patient reported infraorbital hypoesthesia.

Conclusions: We first report the promising outcomes of the double-team one-stage SFE+ESS procedure performed by a combined team of otorhinolaryngologist and maxillofacial surgeons, including on patients presenting with an infection of the sinuses at the time of surgery.

Reconstruction of the atrophic edentulous posterior maxilla is required before implant placement because of the proximity of the structure to the maxillary sinus and its insufficient bone height (Anavi et al. 2008). The most accepted procedure is open maxillary sinus floor elevation (SFE) that was conceived and introduced by Tatum in 1976 (Tatum 1976) and first described by Boyne & James (1980). Maxillary SFE consists of creating a mucoperiosteal pocket between the schneiderian membrane and the maxillary floor via the lateral wall of the maxilla and filling it with autogenous bone graft or bone substitute.

It was previously suggested that given the strict anatomical relationship between the maxillary floor and the overlying maxillary sinus, SFE may obstruct physiological maxillary drainage into the middle meatus which can lead to maxillary sinusitis that can comprise surgical outcome and cause bone graft loss (Buiter 1976). Several mechanisms have been suggested including perforation and swelling of the schneiderian membrane that may contribute to diminished mucociliary function or conditions impairing maxillary clearance, such as osteomeatal complex (OMC) or internal antral ostium (Pignataro et al. 2008).

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