Mucosal Cyst Aspiration with Maxillary Sinus Elevation: A Case Report

Tien-Hsin Chang[12], Hidetada Moroi[1]

[1]Tufts University School of Dental Medicine, Department of Periodontology

[2]University of Pennsylvania School of Dental Medicine, Department of Periodontics

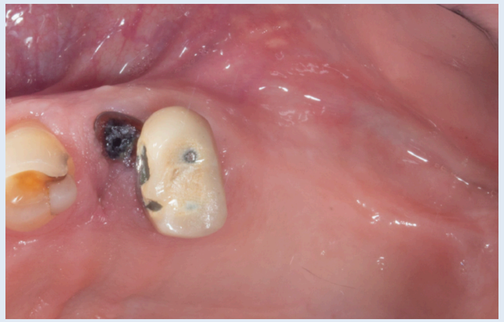
Academy of Osseointegration

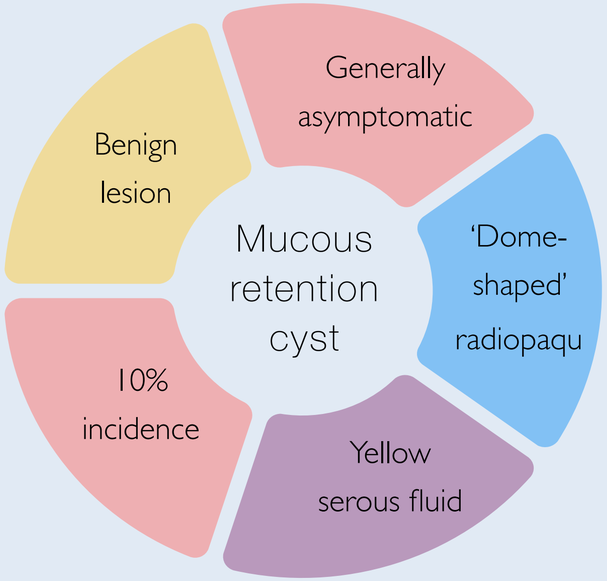
Objective

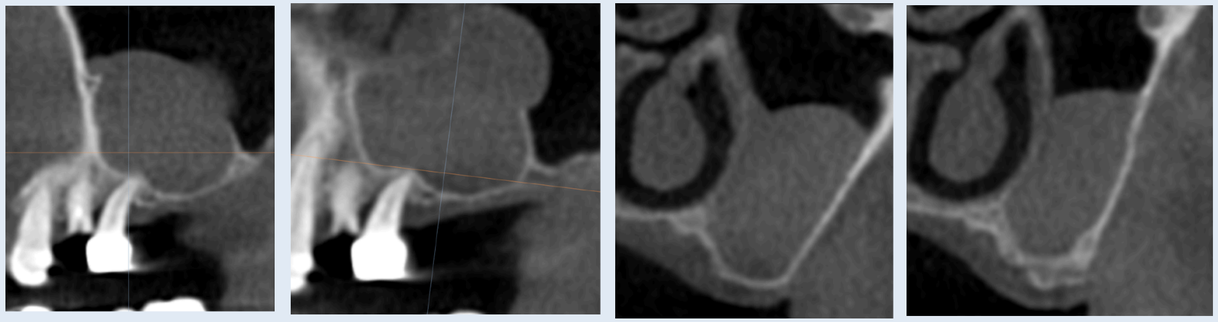
Maxillary sinus elevation via a lateral approach is a reliable procedure for implant site development. However, the presence of sinus pathology, occurring in 45.1% of cases, introduces significant risks. Mucosal retention cysts are common sinus pathology that often complicate this procedure and may necessitate prior surgical removal if large. While cyst aspiration may be an approach to address mucosal retention cysts, studies on its effectiveness during concurrent sinus elevation are limited.

Aim

The aim of this study is to present a complex sinus elevation surgery incorporating concurrent mucosal cyst aspiration to address the challenges posed by sinus pathology.

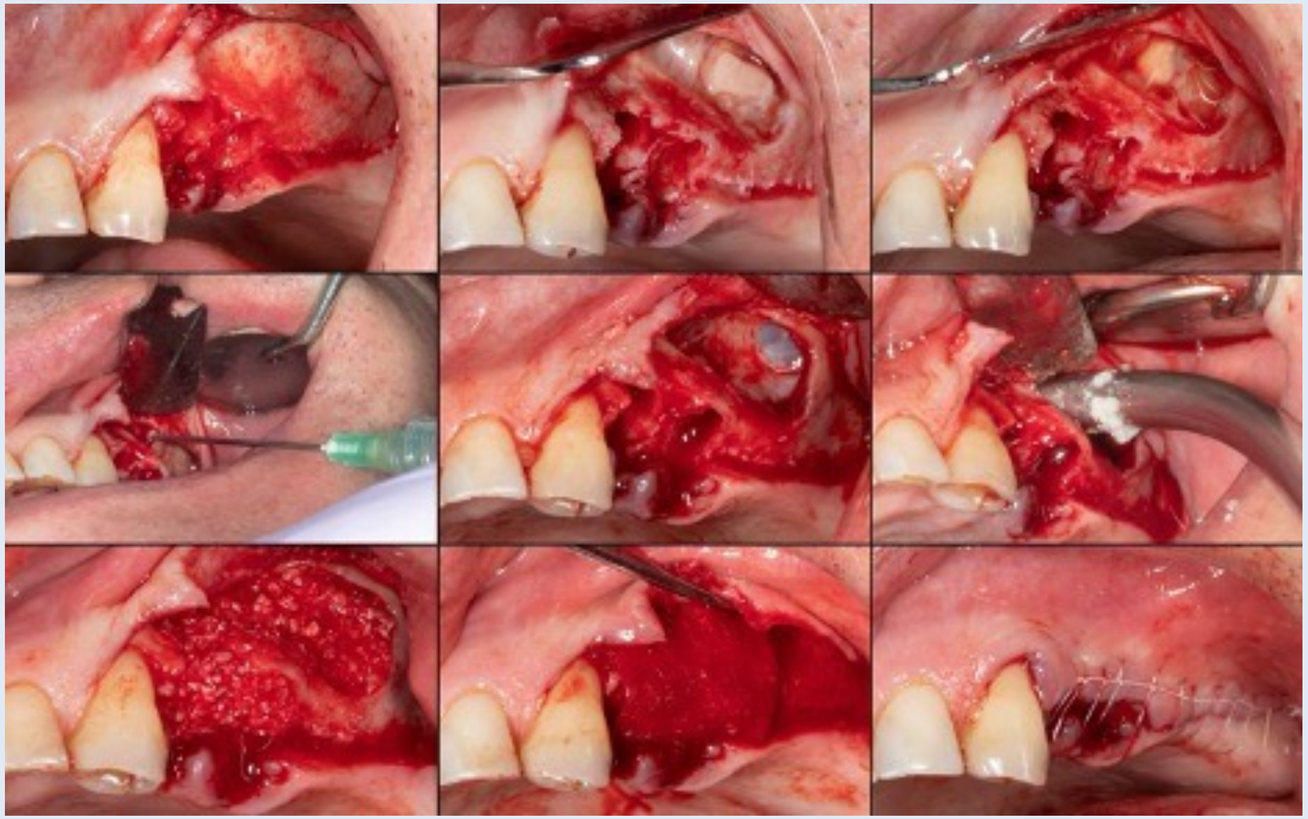






Materials and Methods

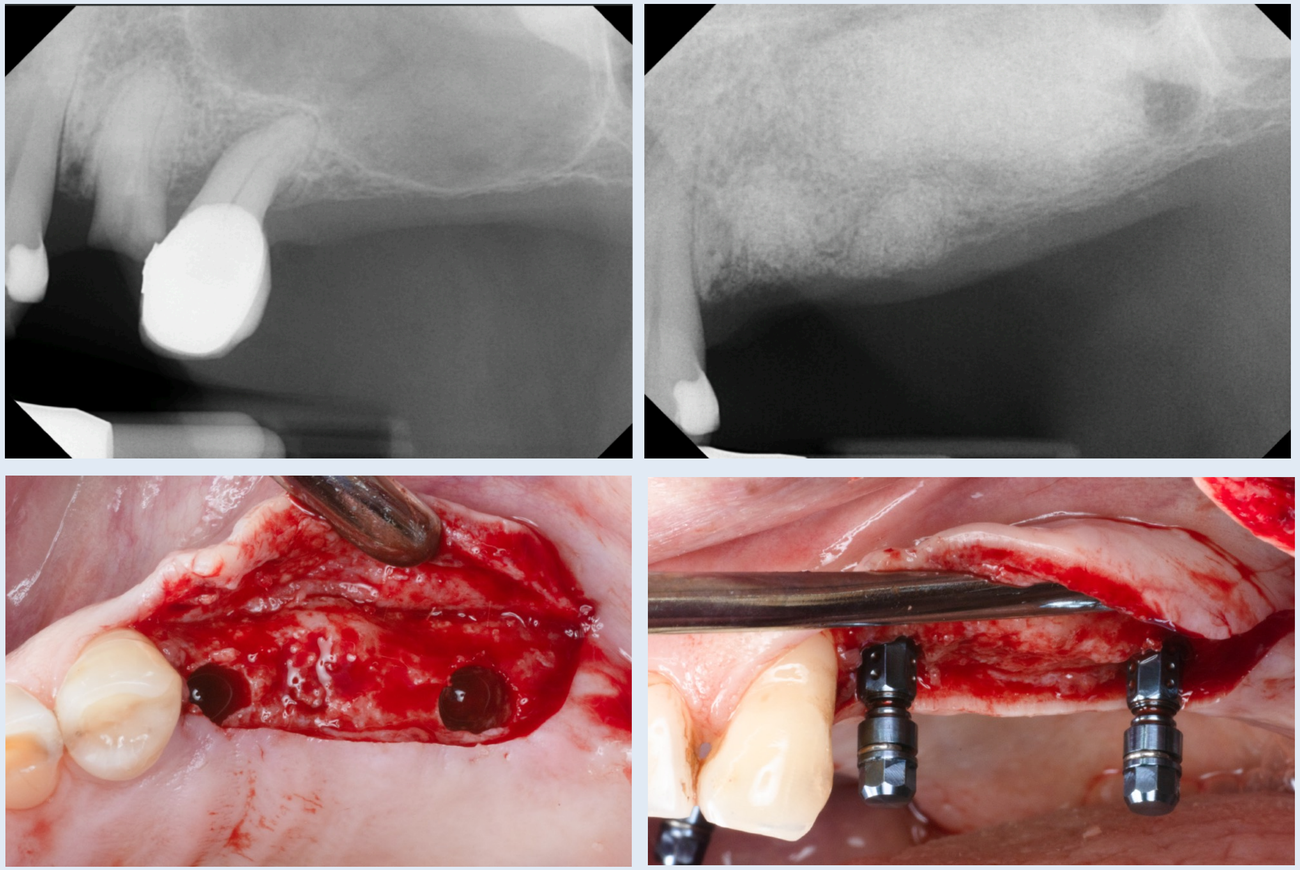
A 63-year-old male with no contraindicating medical history was referred for the extraction of residual roots (#12 and #13) and subsequent implant placement at sites #12 and #14. Radiographic examination revealed a 20x30 mm mucosal retention cyst in the maxillary left sinus. The treatment plan included maxillary sinus elevation with cyst aspiration, extraction of residual roots, and ridge preservation. Pre-operative consultation with an otolaryngologist was conducted. Under local anesthesia, teeth #12 and #13 were extracted, and a full-thickness flap was raised. A lateral window was created using a piezo instrument, and the sinus membrane was carefully detached. The mucosal cyst was perforated for aspiration, and a collagen membrane was placed to protect the sinus membrane. The elevated sinus area and extraction sites were grafted with a 1:1 ratio of allograft and xenograft. Primary closure was achieved, and healing proceeded uneventfully. Implants were placed 8 months later.



Academy of Osseointegration

Results

Follow-up CBCT at 8 months post-operation demonstrated a substantial decrease in the size of the mucosal cyst, with a thickened membrane lining observed. This did not impact implant planning or placement. A vertical bone gain of 10 mm was achieved. The implants were successfully placed with stability >35 N, and the implant bridge was delivered 4 months later. Follow-up radiographs indicated minimal bone remodeling.



Conclusion

Concurrent cyst aspiration with sinus elevation can effectively manage large mucosal retention cysts when supported by meticulous preoperative planning, comprehensive medical consultation, and detailed risk assessment.

Reference

Friedland B, Metson R. A guide to recognizing maxillary sinus pathology and for deciding on further preoperative assessment prior to maxillary sinus augmentation. Int J Periodontics Restorative Dent. 2014 Nov-Dec;34(6):807-15.

Testori T, Yu SH, Tavelli L, Wang HL. Perforation Risk Assessment in Maxillary Sinus Augmentation with Lateral Wall Technique. Int J Periodontics Restorative Dent. 2020 May/Jun;40(3):373-380

Janner SFM, Dubach P, Suter VGA, Caversaccio MD, Buser D, Bornstein MM. Sinus floor elevation or referral for further diagnosis and therapy: A comparison of maxillary sinus assessment by ENT specialists and dentists using cone beam computed tomography. Clin Oral Implants Res. 2020 May;31(5):463-475.