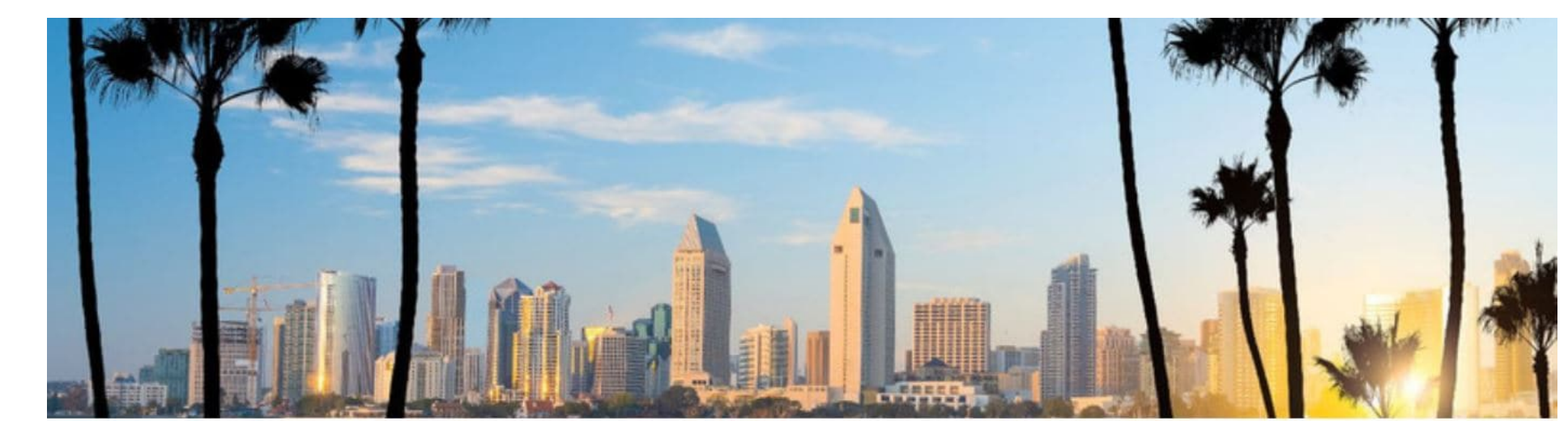


Maxillary Sinus Mucosal Cyst Aspiration In Conjunction With Maxillary Sinus Elevation: A Clinical Cohort Study

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INTRODUCTION: Posterior atrophied maxillary rehabilitation by placement of endo-osseous dental implants is rather complicated and difficult, in case of severe sinus pneumatization leading to compromised residual ridge height. Maxillary sinus elevation procedures, both by crestal and lateral approach, help restore the alveolar ridge dimensions allowing proper placement of endo-osseous implant of required size.

However, the presence of sinus pathologies, highly reported in literature, could limit the indications for these procedures.

Maxillary sinus elevation in the presence of sinus pathologies may lead to reduced sinus lumen and increased risk of ostium obstruction, further leading to stasis in mucous secretions and eventually sinus infection. One such commonly occurring sinus pathology, which warrants contraindication of sinus floor elevation, happens to be the antral cysts with a prevalence of 21%. The main objectives of this clinical cohort study are:

- to show the feasibility of maxillary sinus mucosal cyst aspiration in conjunction with maxillary sinus elevation
- to evaluate implant survival rate and crestal bone resorption
- to evaluate quality of life after the procedure
- to analyze cyst reformation up to five year follow-up

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MATERIALS AND METHODS

A total of 15 patients (6 women and 9 men) ranging in age from 25 to 62 (mean age, 43.7) presenting edentulism of the posterior maxilla associated with severe pneumatization of the maxillary sinus and presence of an antral cyst, were enrolled in the study.

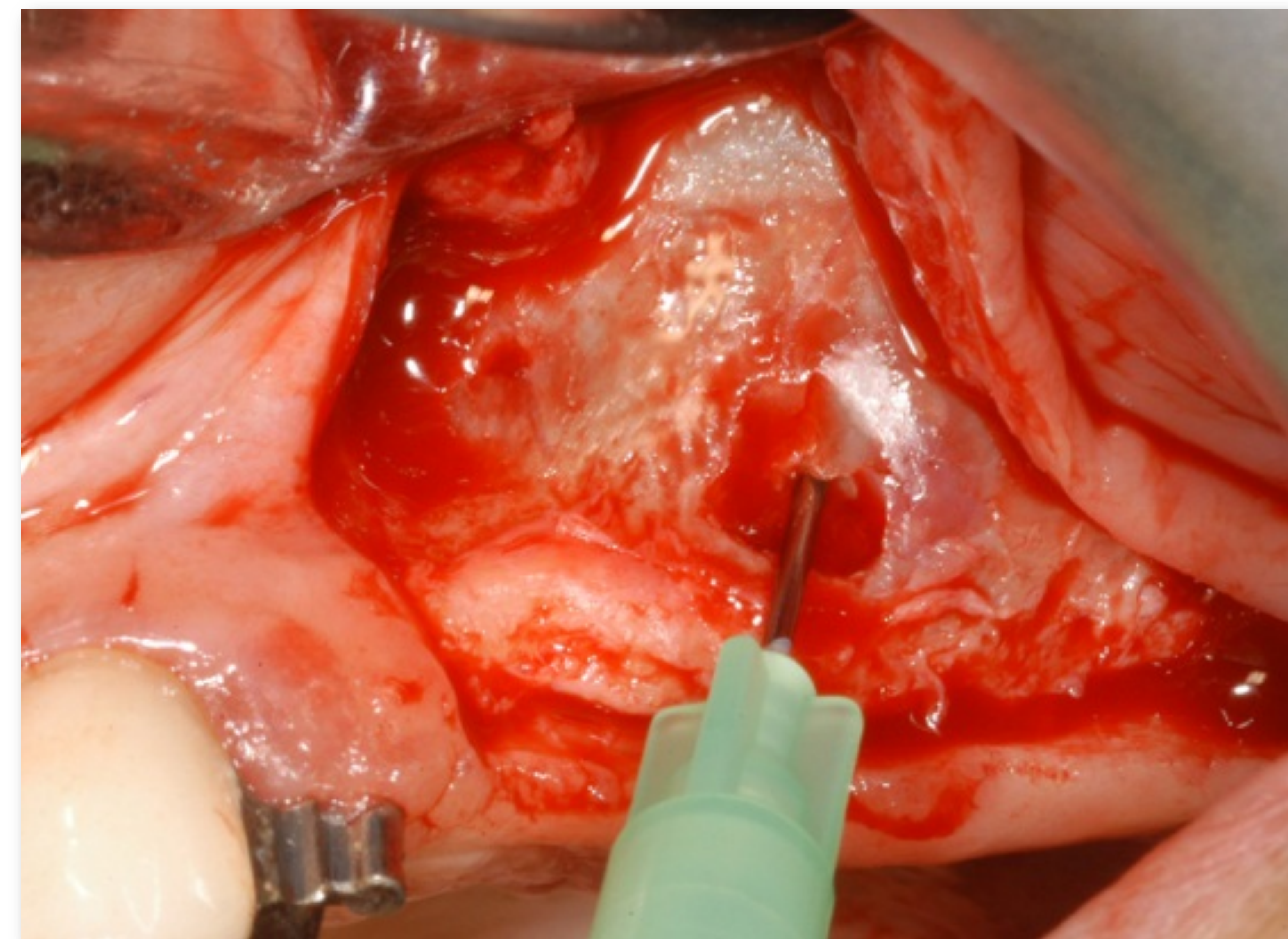
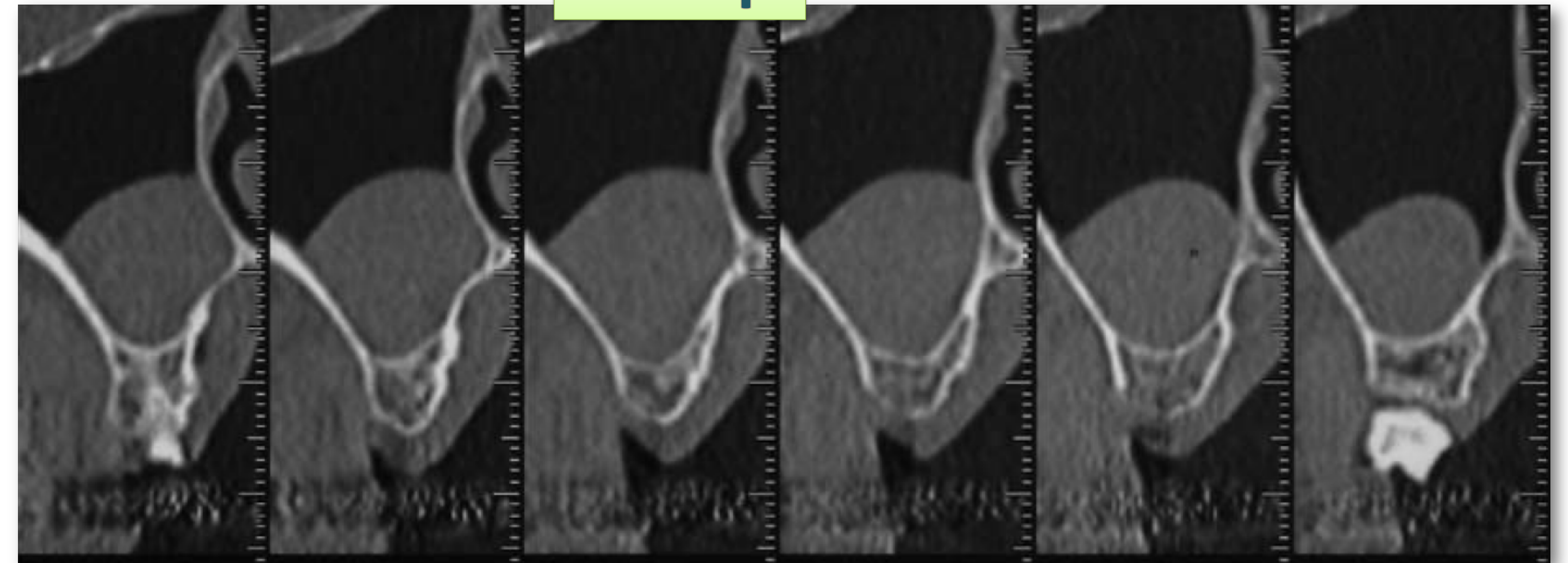
None of the patients had a history of clinical symptoms associated with sinus pathology. The maxillary cysts were identified on CBCT examination.

16 maxillary sinus elevation procedures through lateral approach were performed in conjunction with maxillary cyst fine needle aspiration. During surgical procedures were positioned three implants (Zimmer Biomet, Indiana, USA) in 69% of sinuses (11 sinuses) and two implants (Zimmer Biomet, Indiana, USA) in 31% of sinuses (5 sinuses)

CBCT were taken before and after surgery, at 1-year and 5-year follow-up.

Periapical radiographs were taken immediately after implant placement (at baseline), at the prosthetic phase, and at each follow-up visit (scheduled after 6 and 12 months of prosthesis function and yearly there after up to 5

Pre-op



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RESULTS:

Overall implant success and survival rates were 100% and 97,8% respectively at 1-year and 5-year follow-up.

All prosthetic rehabilitations were successful and functioning.

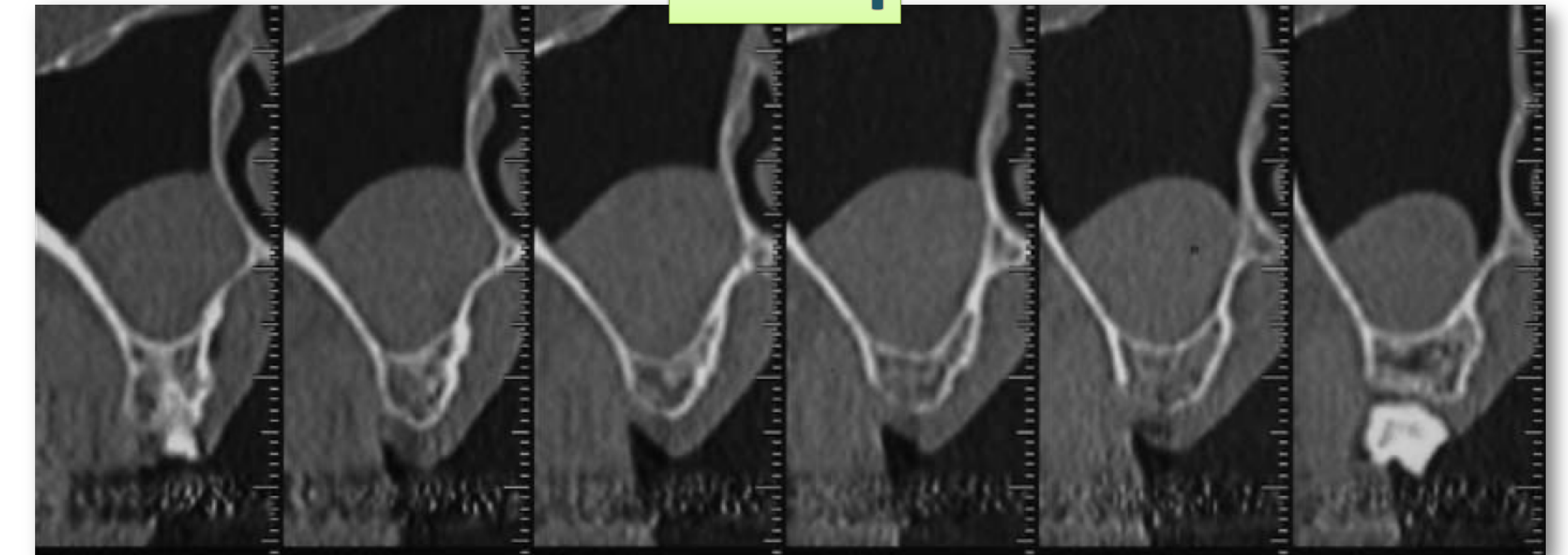
After 1 year of loading, the peri-implant bone loss, measured between crown delivery and one year post-loading, averaged 0.34 ± 0.21 mm.

Quality of life evaluation at 1 week post-op showed a patient response similar to our published historical data about maxillary sinus elevation without cyst aspiration.

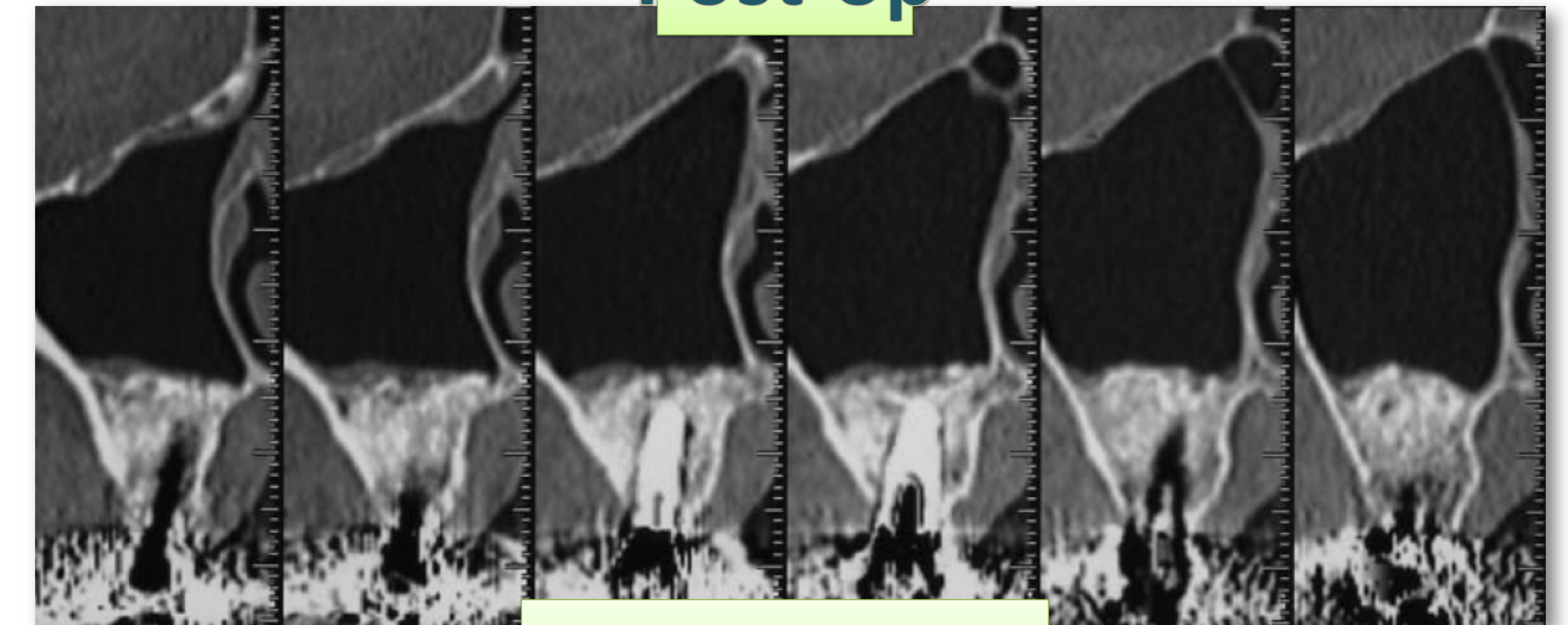
In the present dataset neither immediate nor late post-op complications occurred.

In 81% (13 sinuses), the CBCT examination at 5-year follow-up showed no cyst reformation, in 19% (3 sinuses) cyst reformation was visible, but smaller in size compared to pre-op CBCT evaluation and all the patients were asymptomatic.

Pre-op



Post-op



5-year follow-up

CONCLUSIONS

Maxillary Sinus Mucosal Cyst Aspiration

In Conjunction With Maxillary Sinus Elevation shows:

- Feasability of the surgical technique
- Implant survival rate 100% and 97,8% respectively at 1-year and 5-year follow-up
 - Crestal bone resorption averaged 0.34 ± 0.21 mm at 1 year post loading
 - Quality of life evaluation at 1 week post-op showed a patient response similar to our published historical data
 - In only 19% (3 sinuses) cyst reformation was visible, but smaller in size compared to pre-op CBCT evaluation and all the patients were asymptomatic