Full-arch Reconstruction of Severely Atrophic Maxilla using One-piece Fixed Implant-supported Prosthesis: 10 year follow-up outcome

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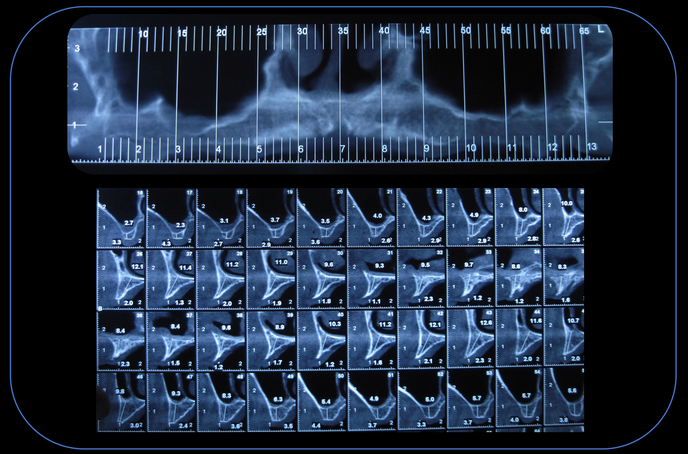
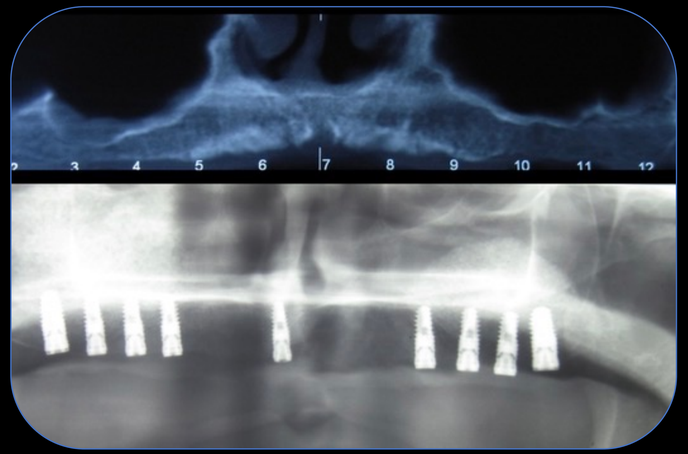
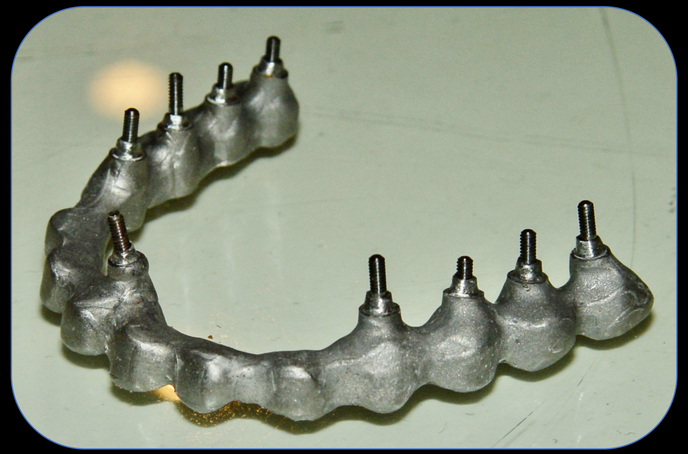
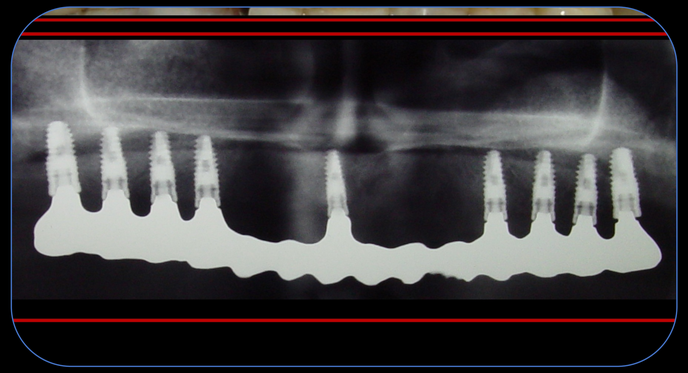






INTRODUCTION

The severely atrophic maxilla poses significant challenges in treatment planning for both dental professionals and patients. Full-arch implant-supported fixed prostheses represent a premier solution for edentulous patients, offering substantial improvements in facial aesthetics, masticatory function, and overall patient satisfaction. By placing implants into the remaining jawbone, a custom one-piece prosthesis can be created to mimic the function and appearance of natural teeth. However, the widespread use of this approach in clinical practice necessitates the demonstration of long-term success. This study presents long-term data on full-arch rehabilitation using one-piece fixed implant-supported prostheses in patients with severe maxillary atrophy, focusing on clinical efficacy and patient satisfaction over a ten-year follow-up period.



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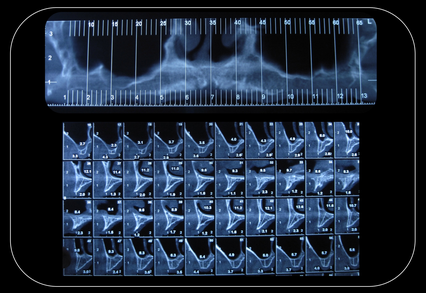
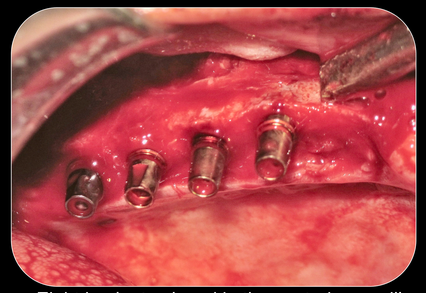
METHODS

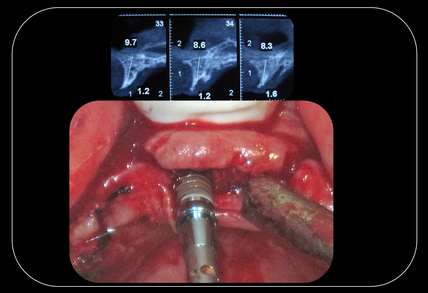
Two patients with severely atrophic maxillae were evaluated for sinus lift procedures and implant placement through clinical and radiographic examinations. A lateral approach was employed in both cases to elevate the Schneiderian membrane and place bone graft material into the maxillary sinus. Primary stability was achieved by immediately placing dental implants following augmentation. In the patient with advanced resorption, a ridge splint was utilized, and guided bone regeneration (GBR) was performed using a resorbable membrane to create a one-piece prosthesis that restored both appearance and function. After satisfactory osseointegration (four months post-implantation), the prosthesis was seated, achieving optimal aesthetic and functional results.



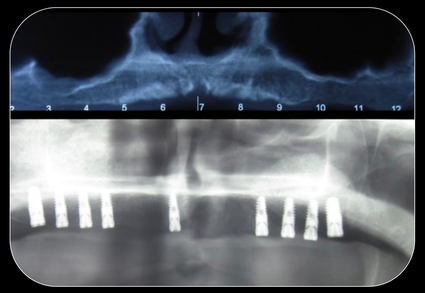
Case 1: CBCT of the maxilla before implant placement



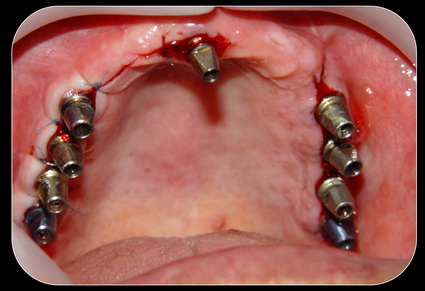
Eight implants placed in the posterior maxilla and Primary stability was achieved by immediately placing dental implants following sinus lift and augmentation.



one implant placed in the anterior maxilla

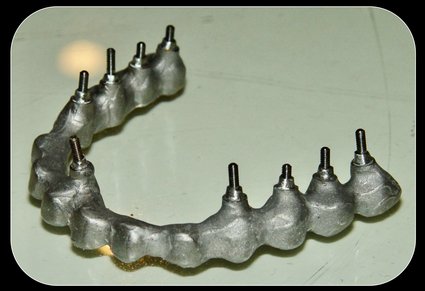


OPG after implant placement



Direction of implants during impression

Building a metal frame



Framework Implant-supported metal

the prosthesis frame was seated

Soft tissue stability was maintained throughout the ten-year follow-up

Achieving optimal aesthetic and functional results.

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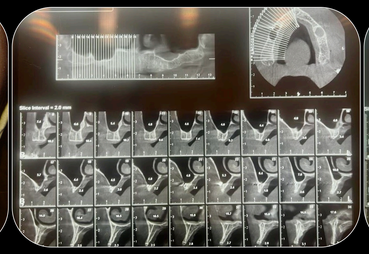
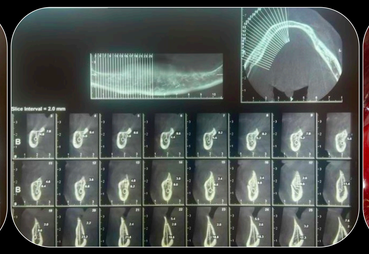
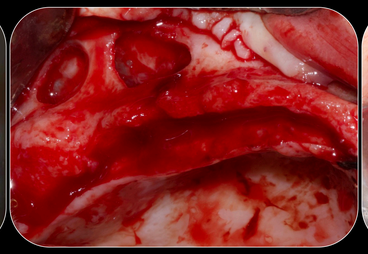
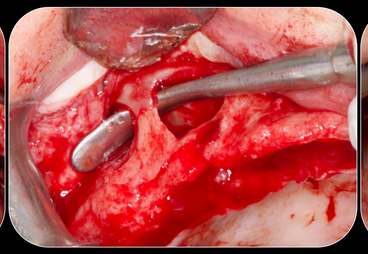
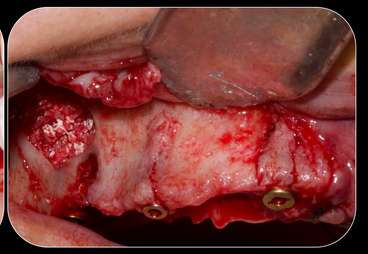
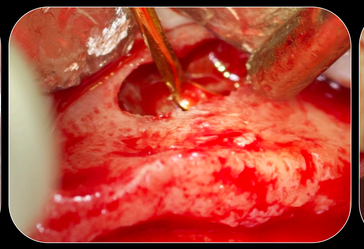
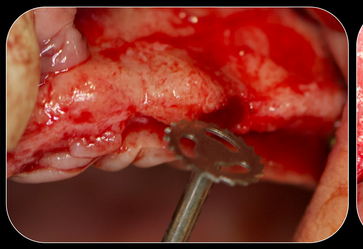
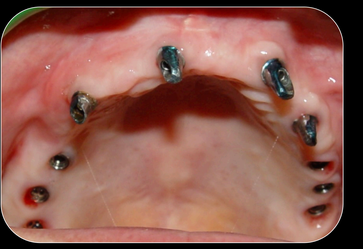






the patient with advanced resorption,

sinus lift procedures and a ridge splint was utilized,



and guided bone regeneration (GBR) was performed using a resorbable membrane to create a one-piece prosthesis that restored both appearance and function.

Both cases demonstrated successful osseointegration and resulted in satisfactory aesthetic outcomes. Soft tissue stability was maintained throughout the ten-year follow-up period, which is considered significant. Patients reported high levels of satisfaction with their prostheses.

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RESULTS

Both cases demonstrated successful osseointegration and resulted in satisfactory aesthetic outcomes. Soft tissue stability was maintained throughout the ten-year follow-up period, which is considered significant. Patients reported high levels of satisfaction with their prostheses.

CONCLUSION

This technique offers an appealing alternative for full-arch rehabilitation, characterized by a low complication rate and high patient satisfaction. One-piece fixed implant-supported prostheses exhibit excellent survival rates and long-term performance in patients with severely atrophic maxillae.

REFERENCES

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