

Full-Mouth Rehabilitation with an Implant-Supported Hybrid Prosthesis: A Case Report

Chavva Sruthi, Nagam Rajareddy*, Himabindu G, Manoranjit K, D Devireddy Sravya

Department of Prosthodontics Cks Theja Institute of Dental Sciences and Research

Citation: Chavva Sruthi, Nagam Rajareddy, Himabindu G, Manoranjit K, D Devireddy Sravya . Full-Mouth Rehabilitation with an Implant-Supported Hybrid Prosthesis: A Case Report. *Int Clin Med Case Rep Jour*. 2026;5(3):1-5.

Received Date: 10 March 2026; **Accepted Date:** 13 March 2026; **Published Date:** 14 March 2026

***Corresponding author:** Nagam Rajareddy, Department of Prosthodontics Cks Theja Institute of Dental Sciences and Research, India

Copyright: © Nagam Rajareddy, Open Access 2026. This article, published in *Int Clin Med Case Rep Jour* (ICMCRJ) (Attribution 4.0 International), as described by <http://creativecommons.org/licenses/by/4.0/>

ABSTRACT

Complete edentulism adversely affects mastication, phonetics, facial aesthetics, and overall quality of life. This case report describes the rehabilitation of a completely edentulous patient using an implant-supported hybrid prosthesis. Comprehensive clinical and radiographic evaluations were performed, followed by strategic implant placement and fabrication of a screw-retained hybrid prosthesis. Compared with conventional complete dentures, the definitive prosthesis provided improved retention, stability, masticatory efficiency, and aesthetic outcomes. Follow-up evaluation demonstrated successful osseointegration, satisfactory prosthetic function, and high patient satisfaction. This case highlights the clinical effectiveness of implant-supported hybrid prosthesis as a reliable treatment modality for full-mouth rehabilitation in completely edentulous patients.

INTRODUCTION

Complete edentulism presents significant functional and prosthetic challenges, particularly in patients with advanced ridge resorption and compromised bone volume. Conventional complete dentures often fail to provide adequate retention and stability due to progressive alveolar bone loss and altered maxillofacial anatomy.^[1,2] Implant-supported full-mouth rehabilitation has emerged as an effective, predictable, and successful treatment modality for restoring esthetics, phonetics, and masticatory efficiency in such cases.^[2,3]

Strategic placement of multiple implants allows optimal distribution of occlusal forces while avoiding anatomical structures such as the maxillary sinus and nasal floor^{3&4}. The use of multiunit abutments facilitates correction of implant angulation, establishes a common path of insertion, and enables fabrication of a screw-retained hybrid prosthesis.^[2,3] This approach enhances biomechanical stability, improves hygiene accessibility, and contributes to long-term prosthetic success.

This case report describes the surgical placement of multiple implants in a completely edentulous maxilla and mandible, followed by full-mouth rehabilitation using a screw-retained hybrid prosthesis.

CASE DESCRIPTION

A middle-aged female patient presented with the chief complaint of difficulty in mastication and dissatisfaction with her previously worn removable prosthesis. The patient had a history of longstanding edentulism in both the maxillary and mandibular arches. Her medical history was non-contributory, and no contraindications to implant surgery were identified.

Intraoral examination revealed completely edentulous maxillary and mandibular arches with moderate ridge resorption (Figure 1). The maxillary arch demonstrated adequate ridge width in the anterior region, with comparatively reduced posterior bone height suggestive of sinus pneumatization. The mandibular arch showed sufficient bone volume despite generalized resorption. The mucosa appeared healthy, with no signs of active inflammation or pathology.

Panoramic radiographic evaluation confirmed completely edentulous arches with adequate anterior maxillary bone volume and sufficient mandibular bone height and width for implant placement. No pathological radiolucencies or anatomical contraindications were observed (Figure 2). Based on the clinical and radiographic findings, a decision was made to rehabilitate both arches with implant-supported screw-retained hybrid prostheses.

Under local anesthesia, crestal incisions were made and full-thickness mucoperiosteal flaps were elevated in both arches. In the maxillary arch, implants were strategically positioned in the anterior and premolar regions to optimize anteroposterior spread and load distribution. In the mandibular arch, four implants were placed in the interforaminal region following sequential osteotomy preparation. All implants achieved satisfactory primary stability. Cover screws were secured (Figure 3) and the flaps were repositioned and sutured. Healing was uneventful. After an appropriate osseointegration period, second-stage surgery was performed to expose the implants, place healing abutments for soft tissue maturation (Figure 4,5) and verify their position radiographically (Figure 6).

An open-tray impression technique was performed to accurately transfer implant positions. A screw-retained metal framework was fabricated and verified intraorally to ensure passive fit (Figure 7).

Subsequently, the hybrid prosthesis was processed and delivered (Figure 8). Occlusion was carefully adjusted to minimize cantilever forces and achieve implant protected occlusion.

Post-delivery radiographic evaluation confirmed satisfactory implant positioning and proper seating of the prosthesis. At follow-up appointments, peri-implant tissues appeared healthy, with no signs of inflammation or complications. The patient reported marked improvement in masticatory efficiency, prosthesis stability, and overall comfort, indicating successful functional and prosthetic rehabilitation.

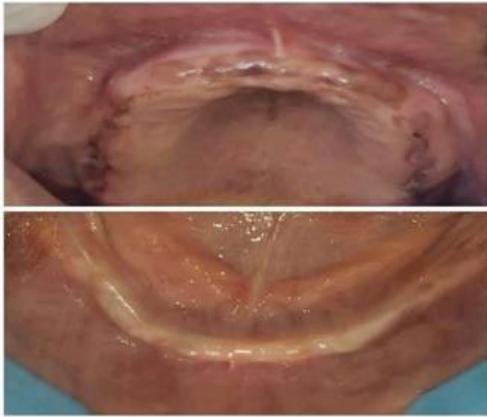


Figure 1



Figure 2



Figure 3

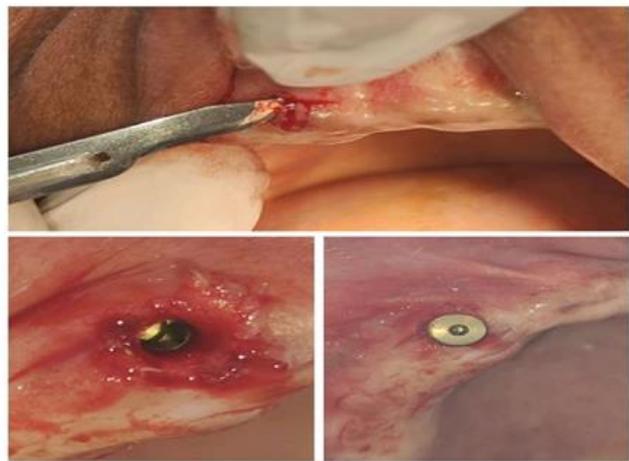


Figure 4



Figure 5

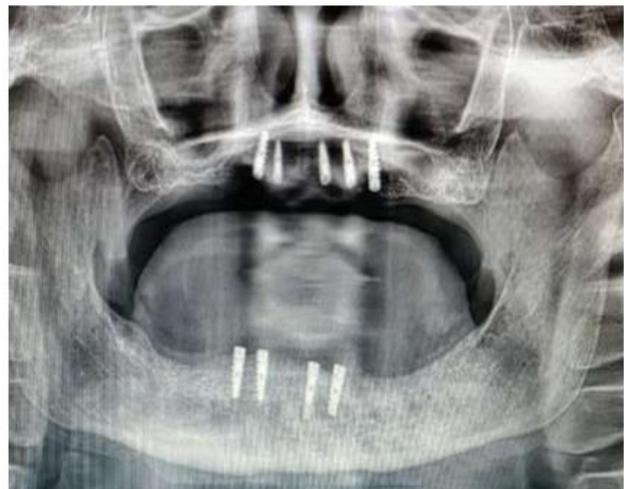


Figure 6

**Figure 7****Figure 8**

DISCUSSION

Rehabilitation of completely edentulous arches using implant-supported hybrid prosthesis has become a predictable and widely accepted treatment approach. Conventional removable dentures often fail to provide adequate retention, stability, and masticatory efficiency, particularly in patients with advanced ridge resorption. The placement of multiple implants in the maxillary arch is especially critical due to its comparatively lower bone density. In the present case, implants were strategically positioned in the maxilla to enhance load distribution and prosthetic stability, while the mandibular arch was restored using four interforaminal implants.^[1,3] This configuration is supported by biomechanical principles demonstrating favourable stress distribution in the anterior mandible.

Screw-retained hybrid prosthesis offers several advantages including retrievability, improved hygiene maintenance, reduced risk of cement-related peri-implantitis and enhanced control of passive fit.^[5]

Proper framework verification is essential to prevent mechanical complications such as screw loosening, framework fracture, or implant overload. In this case, intraoral verification ensured passive seating before final prosthesis delivery.^[5] Cantilever length was minimized to reduce biomechanical stress. Implant protected occlusal scheme was established to prevent overload, particularly in the maxillary arch where bone density is comparatively lower.

The long-term success of full-mouth implant rehabilitation depends on adequate implant number and distribution, proper prosthetic planning, passive framework fit, adherence to maintenance protocols and optimal oral hygiene.^[5]

This case demonstrates that a full-mouth implant-supported hybrid prosthesis is a reliable and effective treatment option for completely edentulous patients, offering improved function, aesthetics, and patient

REFERENCES

1. Jain AR, Nallaswamy D, Ariga P, Philip JM. Full mouth rehabilitation of a patient with mandibular implant screw-retained FP-3 prosthesis opposing maxillary acrylic removable overdenture. Contemporary Clinical Dentistry. 2013.
2. Kaur H, Bhatia V, Singh M, Buragohain A. Full-mouth rehabilitation of screw-retained maxillary and mandibular hybrid denture. National Journal of Maxillofacial Surgery. 2020;11(1):146–149.
3. Yıldırım B, Tekeli AS, Koca C. Full-mouth Rehabilitation with All-on-4 Fixed ImplantSupported Hybrid Prosthesis: A Case Report. Journal of Meffert Implant Institute. 2019.
4. Agarwal U, Saha P, Srivastava S, Saxena SM. Rehabilitating C-h type bone in posterior region with full mouth implant-supported hybrid prosthesis: A case report. IOSR Journal of Dental and Medical Sciences
5. Weber HP, Papaspyridakos P, Kudara Y. Management of Technical Complications During FullMouth Implant Rehabilitation With Hybrid Prosthesis Over a 7-Year Period. Compendium. 2018;39(4).