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# Implant-Supported Hybrid Prosthesis Opposing Maxillary Complete Denture: A Case Report

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## ABSTRACT

Complete edentulism adversely affects mastication, phonetics, facial esthetics, and overall quality of life, particularly in the mandibular arch where conventional dentures frequently lack adequate retention and stability due to progressive ridge resorption. This case report describes the rehabilitation of a completely edentulous mandible using an implant-supported hybrid prosthesis opposing a maxillary conventional complete denture. Clinical and radiographic evaluation was performed followed by implant placement in the interforaminal region. After successful osseointegration, a screw-retained hybrid prosthesis was fabricated and delivered. The definitive prosthesis demonstrated improved retention, stability, masticatory efficiency, esthetics, and patient satisfaction

## INTRODUCTION

Complete edentulism remains a significant oral health concern affecting function, esthetics, speech, and psychological well-being. The mandibular arch presents greater prosthodontic challenges because of continuous residual ridge resorption and reduced denture-bearing area, often resulting in poor retention and instability of conventional dentures.[1,2] Implant-supported prostheses have revolutionized the rehabilitation of edentulous patients by improving retention, stability, masticatory efficiency, and patient satisfaction.[3] Placement of implants in the interforaminal region of the mandible provides favorable biomechanical support and allows successful full-arch rehabilitation with reduced morbidity.[3,4]

Among the available treatment options, implant-supported hybrid prosthesis offers the advantages of fixed prosthetic rehabilitation combined with improved function and esthetics. Rehabilitation of the opposing maxillary arch with a conventional complete denture remains a cost-effective and clinically successful treatment approach. [4,5]

## CASE DESCRIPTION

A 53-year-old male patient reported to the Department of Prosthodontics with the chief complaint of difficulty in mastication and poor retention of the mandibular denture. The patient had been completely edentulous for several years and was dissatisfied with the previously worn removable prosthesis. The medical history was non-contributory, and no contraindications for implant therapy were identified.

Intraoral examination revealed completely edentulous maxillary and mandibular arches with moderate to severe mandibular ridge resorption **(Figure 1)**. The maxillary arch demonstrated adequate ridge form favorable for conventional complete denture fabrication, whereas the mandibular arch showed reduced denture-bearing area with compromised retention and stability. The oral mucosa appeared healthy without any signs of inflammation or pathology.

Panoramic radiographic evaluation and CBCT examination revealed adequate bone height and width in the mandibular interforaminal region suitable for implant placement **(Figure 2)**. No pathological findings or anatomical contraindications were observed. Based on the clinical and radiographic findings, rehabilitation with a mandibular implant-supported screw-retained hybrid prosthesis opposing a maxillary conventional complete denture was planned.

Under local anesthesia, a crestal incision was made and a full-thickness mucoperiosteal flap was elevated in the mandibular arch. Sequential osteotomy preparation was performed, and implants were placed in the interforaminal region with satisfactory primary stability. Cover screws were secured, and the surgical site was sutured **(Figure 3)**. Healing was uneventful during the osseointegration period.

Following successful osseointegration, second-stage surgery was performed and healing abutments were placed for soft tissue healing and contour formation **(Figure 4 & 5)**. Radiographic evaluation was carried out to verify implant positioning and healing status **(Figure 6)**.

An open-tray impression technique was performed to accurately transfer the implant positions, and a master cast was fabricated. Jaw relation records and trial evaluation were completed. A screw-retained framework was fabricated and evaluated intraorally to verify passive fit **(Figure 7)**.

Subsequently, the definitive mandibular hybrid prosthesis was processed and delivered opposing the maxillary complete denture **(Figure 8)**. Occlusion was carefully adjusted to establish implant-protected occlusion and minimize excessive occlusal forces.

Postoperative evaluation demonstrated satisfactory prosthesis fit, healthy peri-implant tissues, improved masticatory efficiency, enhanced esthetics, and patient satisfaction.

## DISCUSSION

Mandibular implant-supported hybrid prosthesis is a predictable and widely accepted treatment option for completely edentulous patients, especially in cases with poor retention and stability of conventional mandibular dentures due to advanced ridge resorption. Implant-supported rehabilitation significantly improves prosthesis retention, stability, masticatory efficiency, patient comfort, and overall quality of life. [1,2]

The interforaminal region of the mandible is considered an ideal site for implant placement because of favorable bone quality and reduced risk of injury to vital anatomical structures.[3] In the present case, implants were strategically placed in the mandibular interforaminal region to provide adequate support and favorable stress distribution for the hybrid prosthesis, while the opposing maxillary arch was restored with a conventional complete denture.

Screw-retained hybrid prostheses offer advantages such as retrievability, improved hygiene maintenance, and reduced risk of cement-related complications. [4,5] Proper framework verification and establishment of implant-protected occlusion are essential to minimize mechanical stress and ensure long-term success. This case demonstrates that mandibular implant-supported hybrid prosthesis opposing a maxillary complete denture is a reliable and effective treatment option, providing improved function, esthetics, and patient satisfaction.

Figure -1

Figure - 2

Figure – 3

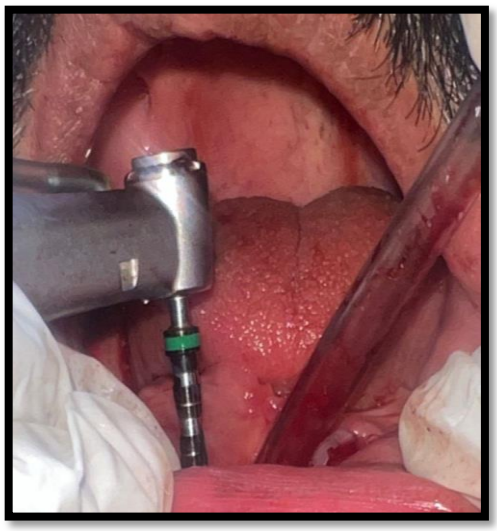

Figure – 4

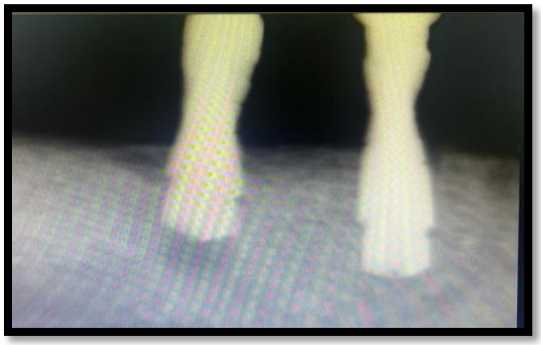

Figure – 5(i)

Figure – 5(ii)

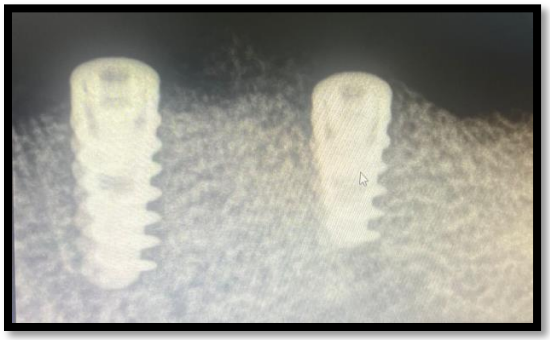

Figure – 5(iii)

Figure 5(iv)

Figure – 6

Figure – 7

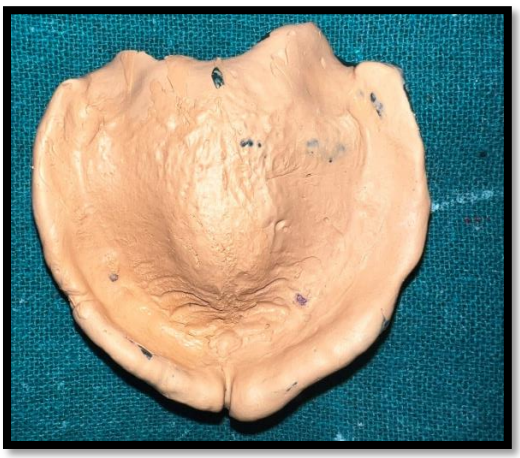

Figure – 8

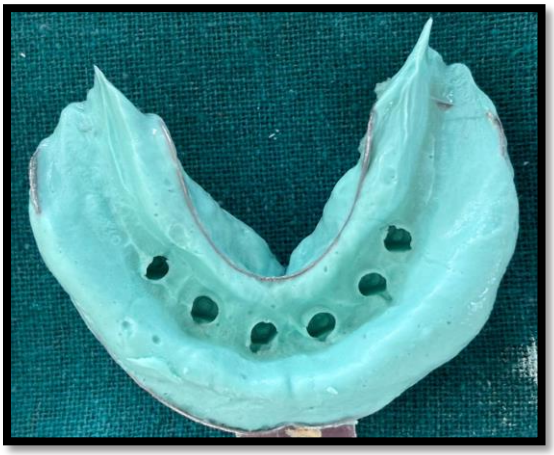

Figure – 9

Figure – 10

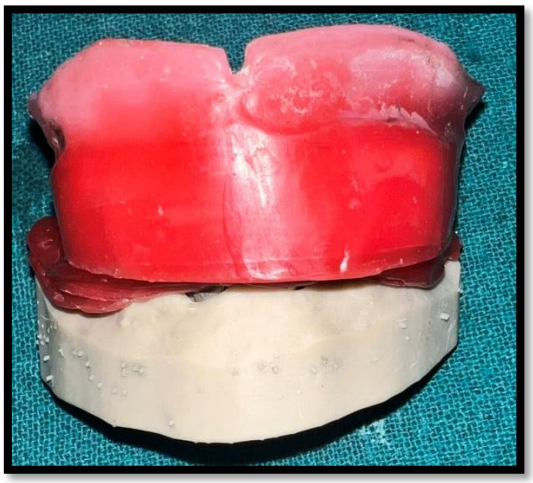

Figure – 11

Figure – 12

Figure -13

Figure – 14

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