Open Access Library Journal
2025, Volume 12, e13547
ISSN Online: 2333-9721
ISSN Print: 2333-9705

Immediate Complete Dentures: Aesthetic Rehabilitation and Clinical Challenges

Hassan El Alaoui, Khadija El Assraoui, Sanaa Rimaoui, Samira Bellemkhannate

Faculty of Dental Medicine, Hassan II University, Casablanca, Morocco
Email: dr.elalaoui@gmail.com

How to cite this paper: El Alaoui, H., El Assraoui, K., Rimaoui, S. and Bellemkhannate, S. (2025) Immediate Complete Dentures: Aesthetic Rehabilitation and Clinical Challenges. *Open Access Library Journal*, **12**: e13547.
https://doi.org/10.4236/oalib.1113547

Received: April 30, 2025
Accepted: July 8, 2025
Published: July 11, 2025

Copyright © 2025 by author(s) and Open Access Library Inc.
This work is licensed under the Creative Commons Attribution International License (CC BY 4.0).
http://creativecommons.org/licenses/by/4.0/

Open Access

Abstract

Nowadays, appearance plays a pivotal role in society, significantly influencing self-perception and social interactions. The maxillary anterior teeth, as key components of the smile, are essential to facial aesthetics and effective communication. In this context, the delay between tooth extraction and the placement of an aesthetically pleasing prosthesis has become a major concern for patients. This growing intolerance to treatment delays underscores the necessity of adopting techniques that meet modern aesthetic demands, such as the fabrication of immediate complete dentures. This article aims to illustrate, through the presentation of a clinical case treated at the Prosthodontics Department of the Consultation and Dental Treatment Center in Casablanca, the various clinical and technical steps involved in the design and placement of a maxillary immediate complete denture.

Subject Areas

Dentistry

Keywords

Immediate Complete Dentures, Aesthetic Rehabilitation, Total Edentulism

1. Introduction

An immediate prosthesis is a denture fabricated before the extraction of the last remaining teeth and inserted immediately after their extraction [1]-[3].

Immediate dentures provide several significant advantages. They assist in controlling post-extraction bleeding and serve as a protective barrier against trauma caused by the tongue, food, or opposing teeth (when present). Moreover, they facilitate faster tissue healing and contribute to a reduction in post-extraction pain. From a functional perspective, immediate dentures enable patients to rapidly re-

cover essential functions such as speech, swallowing, and mastication [4] [5].

Patients are not worried about extracting their teeth if they can be replaced immediately.

They can continue to maintain social and family relationships without discomfort. Furthermore, the presence of remaining teeth on the arch facilitates the accurate re-establishment of the vertical dimension of occlusion, ensuring better functional and aesthetic outcomes.

Immediate dentures are indicated for patients who feel anxious about appearing edentulous and for those whose professions require frequent interaction with the public.

Immediate prostheses may not be suitable as a prosthetic rehabilitation option in certain cases due to a variety of factors. Systemic conditions—such as patients who have undergone radiotherapy in the head and neck region, systemic diseases that impair healing or blood clotting, and cardiac or endocrine disorders—can complicate the use of immediate dentures. Additionally, systemic diseases that contraindicate multiple extractions fall into this category. Psychological factors, including emotional instability, mental incapacity, or an indifferent and unappreciative attitude toward dental treatment, can negatively impact the success of immediate dentures. Oral factors, such as acute periapical or periodontal infections and significant bone loss around the remaining teeth, can make the placement of immediate dentures either impractical or contraindicated [6].

The aim of this work is to explore, through a clinical case, the various steps and challenges involved in rehabilitating a patient with aesthetic requirements using an immediate complete denture.

2. Clinical Case

A 64-year-old female patient presented to the Department of Removable Prosthodontics in Casablanca, Morocco, for aesthetic and functional prosthetic rehabilitation.

The patient presented no significant medical history. Intraoral examination revealed poor oral hygiene, significant buccal displacement of the maxillary teeth, as well as tooth mobility and gingival recession. The patient also presented with Kennedy Class I edentulism in the maxilla and Kennedy Class II with modification 2 in the mandible (**Figure 1**).

Figure 1. Intraoral view.

Radiographic examination revealed significant bone loss in the maxillary teeth. Teeth 32, 42, and 43 were extracted due to advanced bone loss and compromised

periodontal health. The remaining mandibular teeth exhibit good intrinsic and extrinsic value (Figure 2).

Figure 2. Panoramic X-Ray view.

Clinical and radiological findings indicated that all maxillary teeth were deemed necessary for extraction. The patient was determined not to remain edentulous for an extended period. She expressed her desire for an aesthetic prosthesis to improve her current appearance. An immediate complete prosthesis was selected as the solution, while a metal-cast partial prosthesis was chosen to rehabilitate the mandibular arch.

3. The Fabrication Steps

The patient presented with mobile teeth exhibiting gingival recessions, diastemas, and pronounced undercuts, complicating conventional impression techniques. To mitigate these challenges, undercuts were selectively blocked out prior to impression taking—using either wax or light-cured composite resin—ensuring smooth tray removal while minimizing the risk of accidental tooth displacement. Then, Maxillary and mandibular impressions were taken using an irreversible hydrocolloid material, and stone casts were subsequently fabricated (Figure 3).

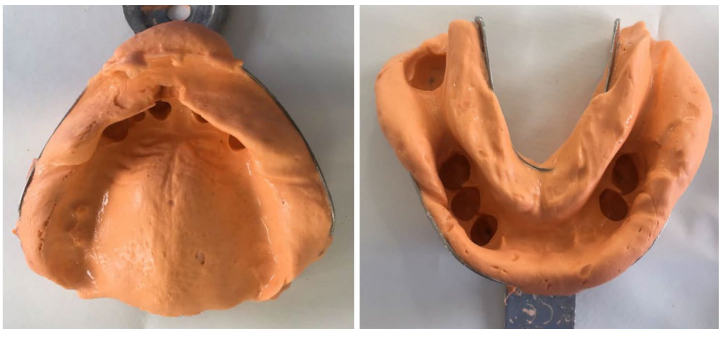

Figure 3. Primary impression using irreversible hydrocolloid impression material.

Because the patient has very buccal and mobile anterior teeth, a custom two-part impression tray with a vestibular window is used. The detachable section of the tray is secured with metal clasps. Once the secondary impression is poured, the divided tray facilitates easy demolding of highly vestibular anterior teeth, minimiz-

ing the risk of fracture.

The maxillary individual impression tray was first adjusted. After adjustment of the tray, it is essential to ensure that any undercuts are adequately filled in to prevent difficulties during impression removal. Border molding of the lateral edges and posterior joint was carried out using a thermoplastic material (Kerr paste), while the anterior edge was shaped using a flexible material (polyether) (Figure 4). The central impression was taken using a polysulfide material (Figure 5).

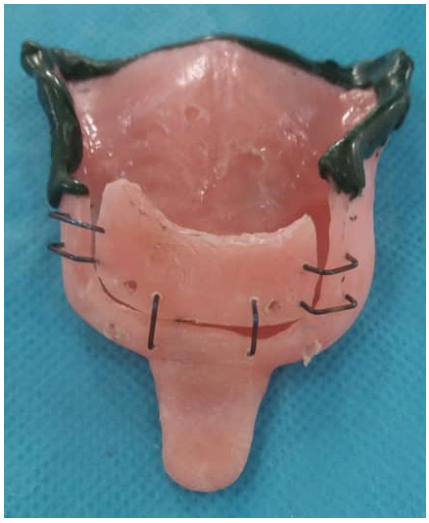

Figure 4. Custom two-part impression tray with a vestibular window, featuring border molding of the lateral and posterior regions.

Figure 5. Maxillary central impression taken with polysulfide material.

The mandibular secondary impression was taken using the conventional technique: molding the edges with a thermoplastic material, followed by the overall

impression with a polysulfide (Figure 6).

Figure 6. Mandibular central impression taken with polysulfide material.

After the casting of the secondary impression, occlusion rims were fabricated.

The patient presented with extruded and buccally inclined teeth; therefore, the occlusal plane was adjusted to a position lower than the ideal. Subsequently, the discrepancy between the recording position and the patient's occlusal plane was used to adjust the incisal pin during the mounting of the maxillary model on the articulator, according to the following formula: D = X + 1/3X (Figure 7).

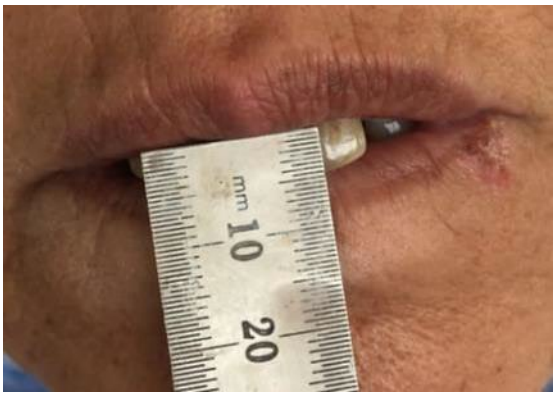

Figure 7. Assessing extrusion by measuring the visible portion of incisors at rest.

The adjustment of the occlusal plane follows the conventional rules of complete removable prosthetics: using the Fox's occlusal plane indicator, the anterior parallelism is aligned with the bi-pupillary line, and the lateral parallelism is aligned with the Camper's plane.

The patient's inter-incisal point was adjusted inferiorly, anteriorly, and laterally. A silicone index was employed to accurately record the new inter-incisal position, facilitating its precise transfer to the articulator (Figures 8-12). Following

the adjustment of the incisal pin to +5, the maxillary cast was mounted on the articulator.

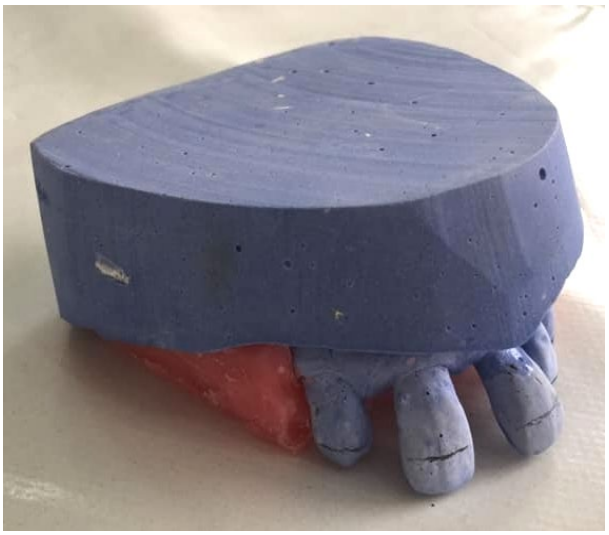

Figure 8. Marking the value of X on the model.

Figure 9. Adjusting the incisal pin to value D.

After trying in the mandibular framework, the maxillomandibular relationship was recorded. Reset incisal pin to 0, then mount mandible on articulator.

Prosthetic teeth were selected based on the patient's existing dentition as a reference. Upon validation of the posterior teeth arrangement, vestibular and interocclusal silicone indices were fabricated. The maxillary cast was then prepared, the anterior teeth were placed, and the prostheses were polymerized (**Figure 10**).

Figure 10. Modification of the cast by Eliminating the Teeth.

After the polymerization of the denture, the extraction of the remaining teeth was scheduled. The immediate maxillary denture was then placed in the mouth immediately following the extractions (**Figure 11** and **Figure 12**).

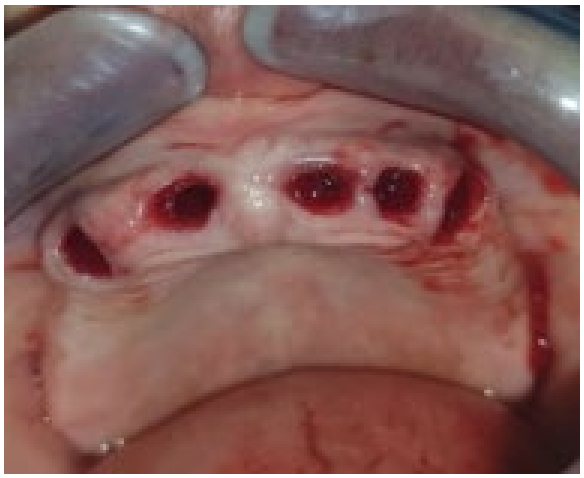

Figure 11. Extraction of maxillary teeth.

Figure 12. Insertion of maxillary and mandibular prostheses.

The patient was instructed not to remove her prosthesis for 48 hours.

After 48 hours, the prosthesis was removed by the dentist, and the post-prosthetic complaints, including any potential injuries, were managed.

A follow-up appointment was scheduled for one week later, with additional weekly appointments planned thereafter.

The patient was very satisfied with the new prosthesis, noting significant improvements in both aesthetics and function.

4. Discussion

Immediate prosthodontics remains a widely practiced approach due to its ability to address multiple clinical and psychological considerations. It preserves the patient's aesthetic appearance by retaining the teeth until the final prosthesis is placed, facilitating a gradual transition to total edentulism and mitigating the psychological impact of tooth loss. Additionally, it maintains masticatory and phonetic functions, enhances healing following tooth extraction, minimizes and directs bone resorption, and reduces treatment time by eliminating the need for a healing period [3] [6].

The fabrication of immediate full dentures entails several unique challenges. The primary impression process can be complicated by tooth mobility, often necessitating the temporary stabilization of teeth using composite or wax [7]. During the secondary impression phase, tooth mobility, and vestibular version further complicate the procedure, requiring the use of customized resin impression trays, such as conventional trays, occlusally open trays, or vestibularly open trays [8]. The determination of the occlusal plane, influenced by the supraeruption or infraeruption of teeth, directly impacts the mounting of the maxillary cast on the articulator, as it necessitates adjustments to the incisal pin. Furthermore, the position of the interincisal point may shift vertically (upwards or downwards), laterally, or anteroposteriorly, adding complexity to the procedure [7] [9].

During the determination of the Occlusal Vertical Dimension (OVD), establishing a reduced OVD eliminates the risk of occlusal discrepancies caused by premature contacts between the remaining teeth. However, when dental contact is present, recording an OVD that exceeds the predetermined value is compensated for by adjusting the incisal pin before mounting the mandible on the articulator.

The choice of teeth may be determined based on pre-extraction documentation or guided by a new aesthetic approach [10].

This clinical case presented several significant challenges. First, the mobility of the teeth, which required stabilization prior to taking any impressions. Second, the vestibular tipping of the teeth, managed using a custom impression tray with a vestibular opening. Third, the extrusion of the teeth, which necessitated lowering the occlusal plane and compensating for it by adjusting the incisal pin to a higher position when mounting the maxillary model on the articulator. Fourth, the lateral displacement of the interincisal point in all three planes of space. In this

case, a silicone index was used to transfer the new interincisal point to the laboratory.

The fabrication of an immediate complete denture generates significant interest among patients; however, its success is often compromised by several challenges. These include the inability to evaluate the arrangement of the teeth and aesthetics prior to treatment [3] [11] [12].

In this clinical case, the aesthetic result was highly satisfactory, despite the psychological distress experienced by the patient when the prosthesis was inserted following the extraction of her anterior teeth. Regular clinical evaluations confirmed stable denture adaptation, optimal occlusal balance, and no signs of tissue irritation.

5. Conclusion

Immediate complete dentures provide an effective solution to mitigate the aesthetic concerns associated with anterior edentulism, enabling patients to maintain their professional and social lives without altering their appearance or psychological well-being. However, this technique demands a high level of expertise from the practitioner, including a strong artistic sense, and requires strict adherence to protocols throughout the procedure.

Conflicts of Interest

The authors declare no conflicts of interest.

References

[1] Jivanescu, A., Marcauteanu, C. and Bratu, D. (2003) Immediate Complete Denture: A Case Report. *Timisoara Medical Journal*, **53**, 293-296.

[2] Caputi, S., Murmura, G., Ricci, L., Varvara, G. and Sinjari, B. (2013) Immediate Denture Fabrication: A Clinical Report. *Annals of Stomatology* (*Roma*), **4**, 273-277.

[3] Kraljeviê, S., Panduriê, J., Badel, T. and Celiê, R. (2001) Immediate Complete Denture. *Acta Stomatologica Croatica*, **35**, 281-285.

[4] Yeung, C., Leung, K.C.M., Yu, O.Y., Lam, W.Y.H., Wong, A.W.Y. and Chu, C.H. (2020) Prosthodontic Rehabilitation and Follow-Up Using Maxillary Complete Conventional Immediate Denture. *Clinical, Cosmetic and Investigational Dentistry*, **12**, 437-445. https://doi.org/10.2147/ccide.s271304

[5] Abdelkoui, A., Fajri, L., Benama, A. and Abdedine, A. (2013) La prothèse complète immédiate d'usage: Réalisation temps par temps. *Clinics*, **34**, 87-96.

[6] Nayak, D., Singhal, R., Agarwal, S., Hussain, S., Javed, B. and Gupta, S. (2020) Immediate Denture: A Review. *International Journal of Scientific Research*, **9**, 1-4. https://doi.org/10.36106/ijsr/9101611

[7] Rignon-Bret, C. (2016) La prothèse complète immediate. *Données actuelles*, **16**, 303-15.

[8] Iri, A., Taddéi, C., Magniez, P. and Etienne, O. (2005) Le porte-empreinte individuel fenêtré pour l'empreinte secondaire en prothèse amovible complète immediate. *Cahiers de Prothèse*, **129**.

[9] Oubbaih, A., Janati, G., Assraoui, K.E. and Bellemkhannate, S. (2024) Total Edentulism Management: Insights from a Case Report. *Open Access Library*, **11**, e12289. https://doi.org/10.4236/oalib.1112289

[10] Braud, A., Berteretche, M.V. and Hüe, O. (2007) Prothèse complète immédiate: Comment gérer l'esthétique? *L'Information Dentaire*, **2**.

[11] Herbou, B. and Postaire, M. (2000) Prothèse complète immédiate d'usage. *Cahiers de Prothèse*, **111**, 2-11.

[12] Rignon-Bretz, C. and Rignon-Bret, J.M. (2002) Prothèse amovible complète, prothèse immédiate, prothèses supra radiculaire et implantaire: Collection JPIO. Édition CdP.