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Immediate Complete Overdenture for Aesthetic Consideration to Improve Quality of Life—A Case Report

Kurnia Ayu Lestari[1], Primanda Nur Rahmania[2]*, and Imam Safari Azhar[2]

[1]Student of Prosthodontic Specialist Programme, Faculty of Dental Medicine, Universitas Airlangga, Surabaya 60132 East Java, Indonesia
[2]Department of Prosthodontics, Faculty of Dental Medicine, Universitas Airlangga, Surabaya 60132 East Java, Indonesia

ABSTRACT

Conventional denture fabrication involves multiple steps that may leave patients temporarily without teeth, affecting both function and esthetics. Many patients find this period difficult to tolerate due to concerns about appearance. In such cases, immediate dentures provide an effective solution. This report describes the design and fabrication of an immediate complete overdenture. A 74-year-old male patient with a history of heart disease presented to the Prosthodontic Department of Universitas Airlangga Dental Hospital seeking dentures. He wished to avoid the edentulous phase. The remaining teeth were 11, 23, 31, 33, 43, and 44, all with poor prognosis. Immediate complete overdentures were planned for both arches. The remaining teeth underwent endodontic treatment followed by decoronation. The dentures were fabricated in advance and inserted immediately after decoronation. Immediate overdentures are indicated for patients whose tooth roots remain healthy but whose crowns are compromised, particularly in geriatric cases. The patient expressed satisfaction with the immediate overdenture.

Keywords: Aesthetics, immediate denture, geriatric

INTRODUCTION

Preliminary procedures required for conventional denture production may push a patient into a period of toothlessness. The patient will undoubtedly be forced into this stage if the remaining teeth require extractions and decaputation before the complete denture is made (Budihargono et al., 2018). The functional and aesthetic aspects will both be impacted by this

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E-mail addresses:
drkurniaayulestari@gmail.com (Kurnia Ayu Lestari)
p.nur.rahmania@fkg.unair.ac.id (Primanda Nur Rahmania)
imam-safari-azhar@fkg.unair.ac.id (Imam Safari Azhar)
* Corresponding author

situation. Some patients cannot go through this toothless phase for reasons related to their interests or careers that are esthetic in nature. In these situations, an urgent denture will be the best option (Kamadjaja et al., 2023).

CASE

A 74-year-old male patient with a heart disease came to the Department of Prosthodontic Clinic, Universitas Airlangga Dental Hospital, to make an upper and lower denture. He desired dentures free of the period of being toothless. Teeth 11, 23, 31, 33, 43, and 44 were the ones that remained. The teeth's prognosis was poor.

METHODOLOGY

During clinical examination, 7 teeth were found, namely teeth 15, 11, 23, 33, 31, 43, 44, and some remaining tooth roots with a diagnosis of chronic apical periodontitis et causa gangren radix on teeth 18, 14, 13, 24, 28, 35, 34, 32, 41, 42, 47, 48, chronic apical periodontitis on teeth 15, 23 (Figure 1). Anatomical impressions were taken at the first visit.

The next step is to perform a preliminary treatment. A preliminary treatment is performed before the prosthodontic treatment. This treatment is the extraction of teeth 15, 18, 14, 13, 24, 28, 35, 34, 32, 41, 42, 47, 48 and endodontic treatment for teeth 11, 23, 33, 31, 43, 44 (Figure 2).

Individual trays were made to perform border molding and take functional impressions of the upper and lower jaw. For the purpose of border molding and functional imprints of the upper and lower jaw, individual trays were created. A window in the anterior part of the lower jaw's individual tray was included in its construction to allow for the imprint of the flabby tissue. Regular body and light body polyvinylsiloxane were utilised for obtaining imprints, and monophase elastomer was utilised for border molding.

The models were then mounted on a free plane articulator. After that, we set the non-immediate artificial teeth. We did the try-in of wax denture with the non-immediate artificial teeth (Figure 3).

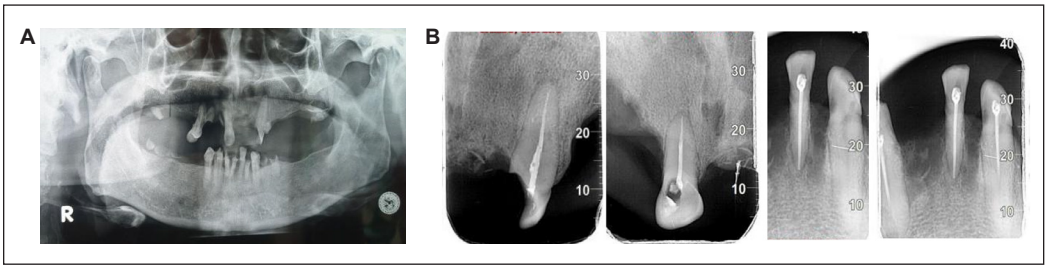

Figure 1. Radiographic examination: (A) panoramic radiograph; and (B) periapical radiograph showing teeth 11, 23, 31, 33, 43, and 44

Figure 2. Intra oral condition: (A) anterior view; (B) lateral right view; (C) lateral left view; (D) upper occlusal view; and (E) lower occlusal view

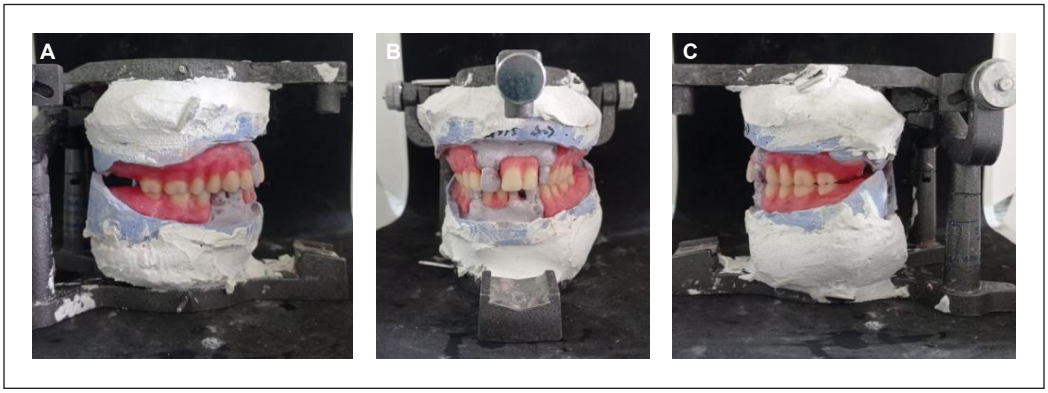

Figure 3. The setup of artificial teeth on the models mounted on a free plane articulator without artificial teeth 11, 23, 31, 33, 43, and 44: (A) lateral right view; (B) anterior view; and (C) lateral left view

RESULTS

Some individuals may experience psychological anguish if their front teeth are lost. In this case, patient desired dentures free of the period of being toothless. Therefore, immediate partial denture treatment was chosen for this case (Figure 4).

DISCUSSION

The treatment results of immediate dentures could not be properly assessed before they are fitted. Overlapping maxillary and mandibular relationships could be corrected. In addition, the dentist needs to be aware of the potential side effects of extended dental visits (Caputi

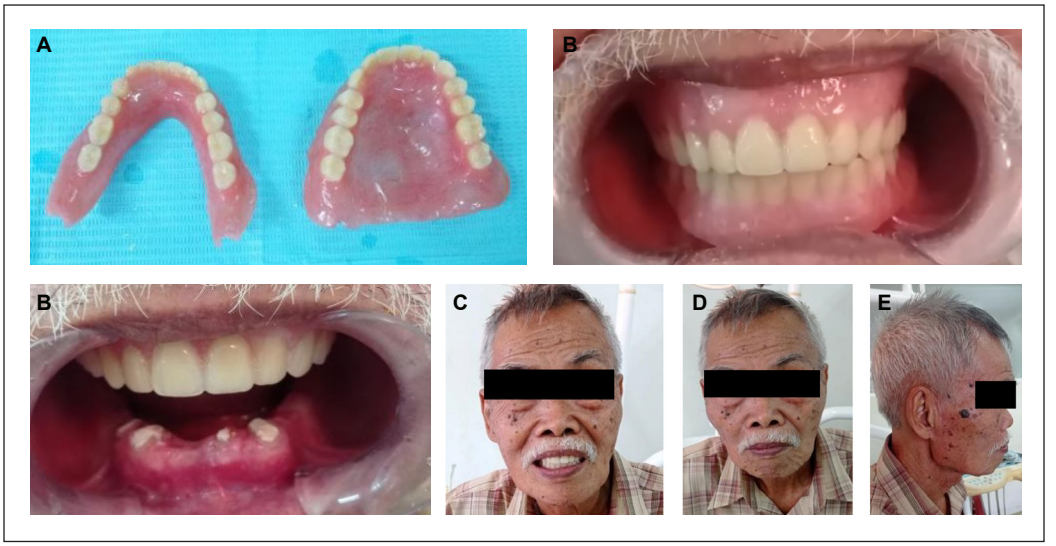

Figure 4. (A) Acrylic denture; (B) Intra oral condition with the new denture; (C) Patient's profile after denture insertion; (D) Anterior view; and (E) lateral view

et al., 2014). However, in this instance, the patient's issue of the anteriorly projecting teeth was addressed by the therapy, which made him extremely happy with the denture. Patients with heart disease need treatment with a small number of visits. So immediate helps patients with heart disease (Crespo-Leiro et al., 2018).

Alveolar ridge preservation, proprioception, force distribution, stability, and retention are benefits of overdenture. The necessity to practice good oral hygiene and the increased risk of periodontal and dental cavities are the drawbacks of having an overdenture (Soesetijo, 2012).

According to the WHO Global Oral Health Status Report, the average prevalence of edentulism in those over 60 was 22.7% worldwide, which means that over 25% of those over 60 were toothless. According to a Saudi Arabian research of 892 adults 60 and older, gum disease was responsible for 74.21% of the missing tooth rate while lost teeth accounted for 76.69%. The oral health rate of middle-aged and older people in China was less than 15%, according to the Fourth National Oral Health Survey. Of these, the prevalence of dental caries was as high as 98%, and the percentage of people in the 65–74 age group who had missing teeth was 86.1% (Figure 5) (Yu et al., 2024).

The cumulative impact of the oral disease throughout life drives the biology of nutritional status and dental health. Malnutrition in older individuals is caused by a number of factors, including dental caries, periodontal disease, dysgeusia, and missing teeth, which impair chewing ability, restrict food and nutrient intake, and worsen the gastrointestinal load (Azzolino et al., 2019).

The high incidence of tooth loss, dental caries, periodontal disease, xerostomia, and oral precancer/cancer lesions in the elderly has been linked to oral health issues (Razak

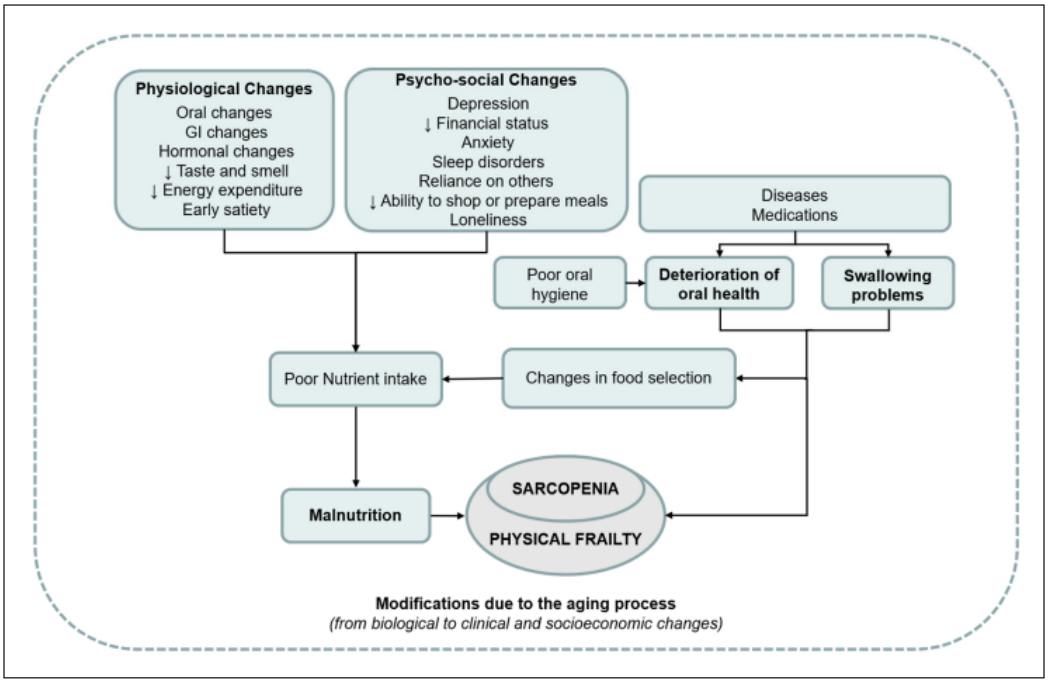

Figure 5. Overview of the interplay between poor oral status, malnutrition, and sarcopenia (Yu et al., 2024)
Note. GI—gastrointestinal

et al., 2014). Dental caries and periodontitis are prevalent conditions, particularly in the elderly, and are thought to be the primary cause of tooth loss (Chapple et al., 2017).

However, as was covered in the previous section, a number of dental issues that older adults face could result in a deterioration in their overall health by causing discomfort, poor dietary intake, and a decreased quality of life (Azzolino et al., 2019). According to reports, malnutrition, dysphagia, and a reduction in activities of daily living have been linked to poor oral status, which affects 71% of patients in rehabilitation settings (Andersson et al., 2004) and 91% of patients in acute-care hospitals (Hanne et al., 2012). Therefore, inadequate nutritional intake from poor dental health might result in sarcopenia. Additionally, through a number of pathways, including anorexia, decreased food intake, and altered metabolism, inflammation further exacerbates malnutrition.

Prosthetic rehabilitation of the edentulous patient may help to prevent malnutrition since it restores the chewing function (Andreas et al., 2015). It is well recognised that poor dental health affects people in a variety of areas, which is related to the quality of life. Additionally, edentulism has been linked to decreased life satisfaction, decreased self-esteem and morale, and communication difficulties. In order to lessen the effects of edentulism, oral rehabilitation becomes increasingly important in public health systems as life expectancy rises and people strive for the higher quality of life that comes with aging

well. Oral rehabilitation with complete dentures, however, has personal and technological constraints that necessitate patient education and professional expertise for effective therapy (Silva et al., 2024). A prosthesis known as an immediate denture is intended to replace missing teeth right away following tooth extraction or decaputation. The patient's comfort, functionality, and appearance are the main priorities, thus improving the patient's quality of life.

CONCLUSION

Immediate dentures are still regarded as crucial treatments in the age of implant therapy. It can improve the healing process, function, and give the patient with aesthetics. A successful and functionally acceptable treatment plan for the patient will result from appropriate evaluation, planning, follow-up, and directions. In addition, there is a need for greater collaboration among countries, institutions and authors to improve the oral health in older adults.

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