BALKAN JOURNAL OF STOMATOLOGY

BaSS

ISSN 1107 - 1141

A Useful Approach to a Combined Implant Application: Report of a Case after a 13-Year Assessment

SUMMARY

Dental implants are commonly used in dentistry. A fixed prosthesis is a generally the preferred method of replacing the missing teeth which are lost for various reasons. In this case, we aimed to evaluate the success of a different dental implant application supported with a full mouth-fixed bridge in a patient after 13 years of implantation. It seems that a combined implant application could be useful .

Keywords: Dental Implant; Full Mouth Bridge

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CASE REPORT (CR)
Balk J Stom, 2009; 13:52-55

Introduction

The long-term predictability of osseointegrated implants for tooth replacement have been reported by several longitudinal studies, resulting in a wide use of dental implants[1,2]. Factors that allegedly influence the survival rates of dental implants include the quantity and quality of bone in the selected site[3], the lack of keratinized tissue around the implant[4], the patients' periodontal status[5], the type of micro-flora in the sulci/pockets of the remaining natural teeth and implants[6], the patients' plaque control[7], professional maintenance[8], smoking[9], parafunctional habits[10], and the characteristics of dental implants[11]. A wide variety of implant designs are available to satisfy the varying needs of patients[12]. The fixed prostheses are generally preferred as a way of replacing missing teeth.

A 65-year-old woman patient applied for her dental cure and rehabilitation with a prosthodontic. The present case report aims: (1) to present a way of treatment of the patient with different dental implants and a full mouth-fixed prosthesis; and (2) to evaluate their long-term results.

Report of a Case

Clinical Examination

Plaque and bleeding on probing was seen slightly. Moreover, the tooth 33 needed a filling and in the teeth 26 and 27 caries was detected as well. In the mandible, except the present teeth 44, 43, 42, 32 and 33, there were the edentulous ridges bilaterally (Fig. 1).



Figure 1. Intraoral view of the first examination at baseline

Before planning an implant placement, teeth were filled and a periodontal therapy was retrieved for elimination the pockets. Additionally, plaque was reduced *via* audio-visual educations advised for the patient. And in general, no systemic disease except a mild hypertension and menopause was reported. Using any of the medicaments for this reason was also not emphasized.

Radiographic Examination

The panoramic X-ray taken at first visit (March 1993) showed that the maxillary teeth 18, 16, and 28, and mandibular teeth 31, 34, 35, 36, 37, 38, 41, 45, 46, 47, 48 were missing. A fixed prosthesis was seen on the upper jaw right site between tooth 15 and 17. In addition, in some areas there was an alveolar bone loss area that was visible on the radiograph (Fig. 2).

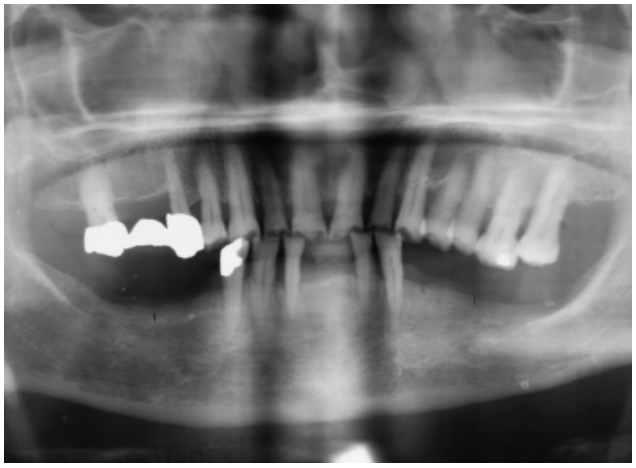


Figure 2. Panoramic view of the jaws at baseline

Surgical Examination

In addition to the clinical examination and radiographs, a model was obtained for better analyzing of the implant placement ridges. As first, a linear incision was performed on the gingiva for exposing the alveolar ridge. Flaps were removed carefully so that the alveolar ridges were visible. Then, holes were created with a special bur under saline irrigation on the right site of the alveolar ridge of the mandible, and holes were created with a special bur on the left site of the alveolar ridge for the blade and other root-form implants. The blade implant (Nobel Biocare AB, Goteborg,Sweden) was placed firmly and a drill was used with saline irrigation at ultralow speed to complete the root-form implant (ITI, Straumann, Switzerland) placements (Fig. 3). Care was taken not to do perforations in the mandibular alveolar ridge. The flaps were readapted and sutured with a 3-0 black silk. The patient was instructed to take postoperative Siprosan® (Drogsan, Ankara, Turkey) 4 times daily for 1 week. After 1 week, sutures were removed and recorded, and the healing appeared to be within normal limits, with no complications seen.

Post-op Examination

After a 6-month healing period, we examined the related sites and have noted that all implants had successfully integrated, both clinically and radiographically. Full mouth-fixed prosthetic restoration covered the remained mandibular teeth and placed implants fabricated for the patient. Oral hygiene instructions were repeated (Fig. 4).

After 13 years, in 2006, the patient was evaluated again, radiographically and clinically. A successful bone implant interrelationship was noted (Figs. 5 and 6).

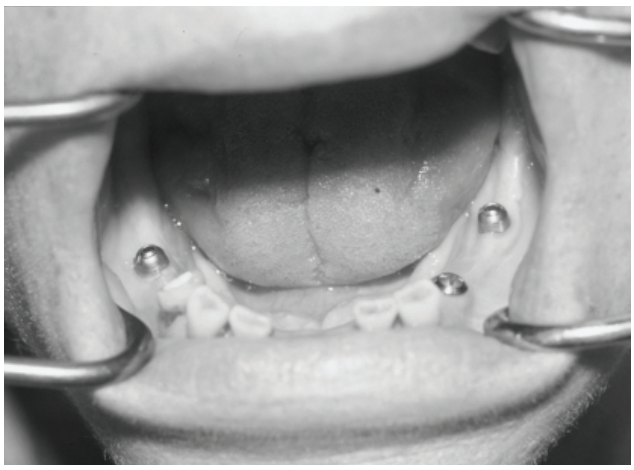


Figure 3. Intraoral view of the placed implant after the operation



Figure 4. Intraoral view of the full mouth bridge on the implants after treatment



Figure 5. Intraoral view of the full mouth bridge on the implants after 13 years

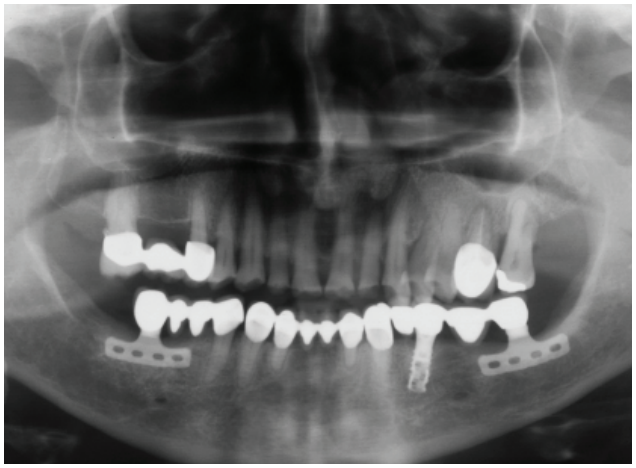


Figure 6. Panoramic view of the case after completing all treatments after 13 years

Discussion

Dental implant treatment did not become a reliable way until 1952, when P I Branemark's researches of bone marrow in the rabbit fibula evolved the idea of osseointegration. Osseointegration is known as a "direct structural and functional connection between ordered, living bone and the surface of a load-carrying implant". It contains the incorporation of non-biological material within the human skeleton without initiating a rejection phenomenon and allows for permanent penetration of the soft tissues without a chronic inflammatory reaction. Osseointegration is a dynamic phenomenon that is possible due to the characteristics of the implants composition[13]. In our case, a good osseointegration was also observed.

In the literature there has not been found any case with implant combination[14]. Our case can have a significant role from this point of view. Postoperative panoramic films showed a successful implant bone correlation. Additionally, there was no evidence of implant failure in this case, and implant failure is very important in implantology[14,15].

Partially edentulous patients with single or multiple missing teeth represent another viable treatment population, and introduce an additional challenge to achieve a long-lasting, successful rehabilitation[16]. In the present case, the bridge was found physiologically and aesthetically acceptable[17,18]. For further evaluation, the patient has been invited to the recall programme.

In conclusion, we are of the opinion that in particular cases an application using different dental implants rehabilitated with a full prosthodontics could be useful and satisfactory for the patients.

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