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IMMEDIATE IMPLANT PLACEMENT IN AESTHETIC ZONE FIVE YEAR FOLLOW-UP: A CASE REPORT

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ABSTRACT

The application of dental implants for the restoration of anterior missing teeth has been performed and recorded in recent years. However, the utilization of implants in the anterior zone is a responsive method in terms of technique. Even though the long term survival rates of implants are very high in that zone, a large number of implant-supported restorations may not meet esthetic expectations. Provisional restorations are important phases in anterior maxillary

implants, which allow the guided soft tissue management and develop esthetic emergence profiles. The replacement of missing anterior tooth and the maintenance of surrounding soft tissue through the adequate surgical and prosthetic methods pose real challenges for the clinician. The aim of this report is to present the surgical and prosthetic stages in the restoration of anterior maxillary teeth.

Keywords: *Implant, anterior aesthetic, emergence profile, immediate implantation*

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ESTETİK BÖLGEDE İMMEDIAT İMPLANTASYONUN BEŞ YILLIK TAKIBİ: OLGU SUNUMU

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ÖZ

Kaybedilen ön dişlerin yerine dental implant uygulaması son yıllarda sıklıkla uygulanmaktadır. Bununla birlikte, anterior bölgede implant yerleştirilmesi teknik bakımından hassas bir uygulamadır. Bu bölgede implantların uzun sürede sağkalım oranı oldukça yüksek olsa da implant destekli restorasyonların büyük çoğunluğu estetik beklentileri karşılamayabilmektedir. Geçici restorasyonlar, yumuşak dokuların

yönlendirilmesi ve estetik çıkış profili oluşturulması, ön bölge implantları için önemlidir. Kaybedilen ön dişin restorasyonu ve onu çevreleyen yumuşak dokuların cerrahi ve protetik açıdan yönlendirilmesi hekim için oldukça önem teşkil etmektedir. Bu çalışmanın amacı, üst çene ön bölgedeki implant uygulamalarının cerrahi ve protetik aşamalarını ortaya koymaktır.

Anahtar Kelimeler: *İmplant, ön bölge estetiği, çıkış profili, immediat implantasyon*

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INTRODUCTION

Many patients present with the complaint about missing teeth. Teeth loss in the anterior region is the most common result of a traumatic injury or a congenital anomaly. Various options are available for the replacement of a single missing tooth,^{1,2} including removable dentures, natural tooth-supported bridges, Maryland bridges and implant-supported single-tooth restorations. Maryland bridges which are made of resin material and removable dentures are generally used as temporary dental restoration in the esthetic region.

The fixed partial denture (three-unit bridge) and the single tooth implant are the most common treatment options for single tooth replacement currently. However, the application of dental bridges through the preparation on natural teeth is not preferred by patients. Therefore, the most common method used recently is the implant-supported single tooth restorations.

In order to insert single tooth implants successfully in the anterior region, factors such as the adequate bone volume, the implant diameter, positioning the implant correctly in 3D plane, the design of implant, the surgical technique, the phenotype of gingiva, its relation with adjacent teeth, the abutment selection, occlusion, temporary and permanent denture should be evaluated properly.³

CASE REPORT

A 42 years old female patient is presented in this report. The root canal treatment for maxillary right lateral incisor and the veneer crown restoration over it were performed before. The same tooth was broken as a

result of dental trauma five years after the treatment and the patient applied to us with this complaint (Figure 1A). As a result of the clinical and radiographic examinations, the tooth extraction was decided. During tooth extraction, for the protection of gingival borders and marginal bone, atraumatic extraction was performed (Figure 1B and 1C). At the same appointment, immediate implantation (Starumann 3.3/12 mm Bone Level, Switzerland) was performed (Figure 1D) in order to ensure hard and soft tissues support. The implants were loaded with composite based provisional crowns after three months (Figure 2A and 2B). The gingiva was shaped four weeks later. The patient came for the control session every week and the emergence profile was created (Figure 2C). After soft tissue management, the permanent restoration was planned. In order to transfer the emergence profile of implant to the cast model exactly, occlusal screw-retained provisional denture was attached to the implant analog and it was embedded into the impression material (Figure 2D and 2E). After the polymerization of the impression material, the provisional restoration was removed and replaced with the impression post. Light-cured resin was placed into the space between the impression post and the impression material and it was polymerized with the light. Therefore, the volume of impression post became exactly the same as the emergence profile in the mouth (Figure 2E and 2F). The impression was sent to the laboratory and the cast model was prepared then the appropriate abutment was selected and the ceramic veneer crown was prepared (Figure 3A and 3C). The permanent denture was cemented and the patient was informed about the processes of care and controls.

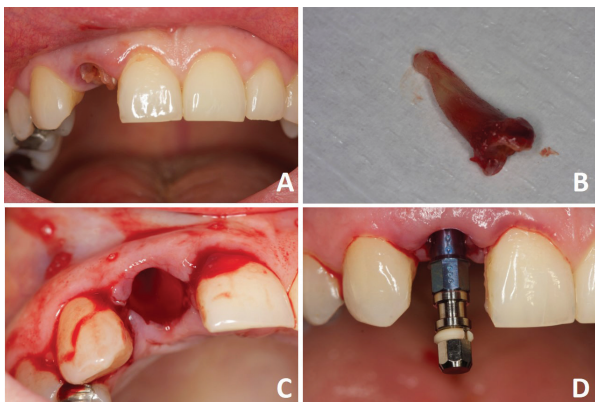


Figure 1: **A:** Before implant treatment **B:** Extracted tooth **C:** Extraction socket **D:** Positioning of the implant in 3D plane

At first, the patient was controlled at three-months intervals. Panoramic radiographies were taken every year periodically. The crown restorations were followed up for five years (Figure 3B and 3D).

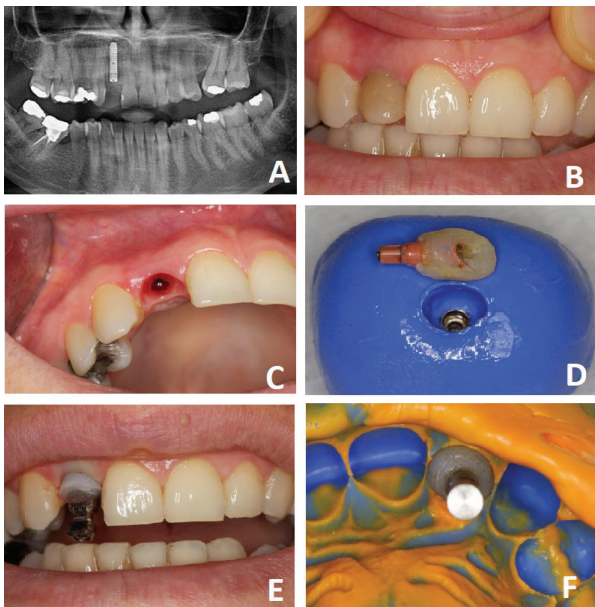


Figure 2: **A:** Post-operative OPG **B:** Management of the soft tissue with temporary prosthesis **C:** Final soft tissue view **D:** The duplication of the emergence profile **E:** Transferring the emergence profile **F:** Transferring the emergence profile to impression.

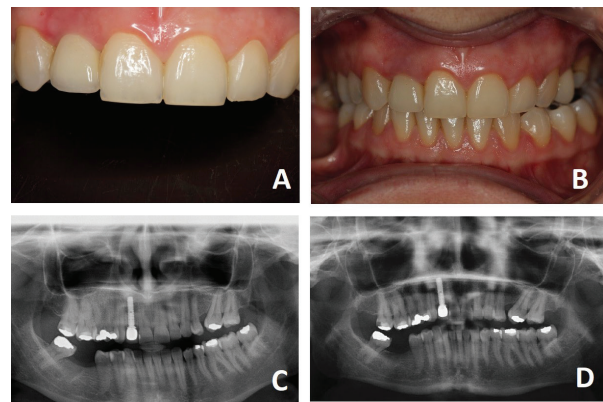


Figure 3: **A:** Final Restoration **B:** After five years **C:** Control OPG after treatment **D:** After five years control OPG

DISCUSSION

Application of dental implants in the esthetic region has been reported in the previous studies. A large number of controlled clinical trials showed that the survival and success rates of implants were found similar to other parts of the jaws.^{4, 5, 6} Bone resorption around dental implants were observed less in the immediate implantation. Peri-implant soft tissues were appeared more esthetic than delayed implantation.⁷ Many esthetic anterior tooth replacements were performed with the delayed surgical implant protocols. The loss of soft and hard tissues can be prevented during the tooth extraction by the placement of an immediate implant. Immediate placement of dental implants has been recommended since sudden post extraction bone loss may be prevented with this placement.⁸ In this report; the harmony of soft and hard tissues was achieved by the placement of an immediate implant in an esthetically challenged situation.

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