

Rehabilitation of Anterior Maxillary Teeth after Trauma: A Clinical Report

SUMMARY

This clinical report describes the treatment of a 56-year-old female who had mobile maxillary anterior teeth due to trauma. The purpose of this article is to evaluate clinical success for splinting anterior mobile teeth with osseointegrated implants that were injured by trauma. The patient was treated with 5 implants (ITI, Straumann, Waldenburg, Switzerland) in the maxillary posterior region. After 3 years, the patient was referred with a trauma by fall. The anterior teeth were mobile but there was no damage in the posterior region and the implants. It was decided to splint the mobile teeth with osseointegrated implants. New metal ceramic restorations were fabricated connecting implants with mobile natural teeth. The patient was recalled at 1, 2, and 3 years. The patient was satisfied with the new prosthesis. The treatment outcome was satisfactory and successful, there was no bone loss around the implants, there was no bleeding on probing at abutment connection and at the 3 year recall, peri-implant tissues were healthy.

Keywords: Implant; Trauma; Implant-tooth supported

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CASE REPORT (CR)

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Introduction

Initially, oral implants were used in the completely edentulous situation^{1,2}. Success of implants became approved, so the use of implants expanded to include anterior and posterior regions. However, there is a controversy regarding whether implants should be connected to natural teeth^{3,4}.

Dental and facial trauma can occur in old people, frequently due to hypertension and vertigo. There are few studies in the literature about dental trauma and the treatment of the teeth which have been affected⁵⁻⁸. Dental implants have been used for replacing the teeth that have been extracted or removed. It is believed that teeth do not stabilize implants, but fully integrated implants can stabilize periodontally compromised teeth. The problem with a combination of implant-tooth supported prosthesis originated from knowledge that the tooth and the osseointegrated implant have dissimilar mobility patterns⁹⁻¹¹.

The purpose of this article was to evaluate clinical success of splinting anterior mobile teeth that were injured by trauma with already osseointegrated implants.

Case Report

A 56-years-old female patient was referred to Marmara University Faculty of Dentistry with complaints about the maxillary and mandibular removable prosthesis. The remaining dentition included 4 maxillary teeth (right first central incisor, left central and lateral incisors and left canine) and 3 mandibular teeth (right canine, left lateral incisor and canine). The patient was treated by 7 implants (ITI, Straumann, Waldenburg, Switzerland) to reconstruct the posterior edentulous maxillary and mandibular jaws. 3 implants were inserted in the right and 2 implants in left posterior maxilla (Fig. 1). 2 implants were inserted in the mandibular arch in the place of first premolars. 1 week after the right mandibular implant insertion, the implant was lost due to infection of the root canal treated canine. 3 months after the extraction of the canine, 2 implants were inserted in that area.

The anterior teeth were treated with metal-ceramic crowns and the posterior implants treated with implant supported fixed prostheses in the maxillary arch. The mandibular anterior region was treated with implant-teeth supported prosthesis. The posterior region was treated

with precision attachment prosthesis. The patient was comfortable and, at annually recalls, the implants were in function and clinically stable when tested individually; there was no pain from the implants, and the peri-implant soft tissues were clinically healthy.



Figure 1. Radiographic view before trauma



Figure 2. Intraoral view after trauma

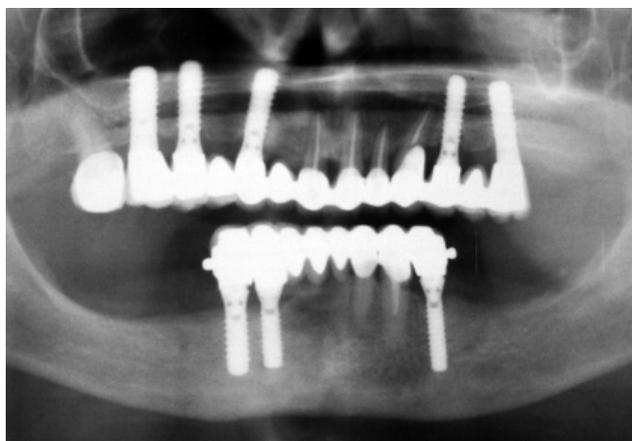


Figure 3. Radiographic view after treatment

3 years after the treatment the patient came with an anterior teeth trauma by a fall. The intraoral and radiographic examinations were done and it was seen that the anterior teeth were mobile but there was no damage in the posterior region and the implants were clinically and radiographically healthy (Figs. 2 and 3). There was a segmental movement in the anterior region.

The anterior teeth were treated by root canal treatment. After the root canal treatment it was decided to splint the anterior teeth with implants. The implants were thought to be used for treatment of missing teeth and they would also be used to fix the anterior mobile teeth. Maxillary full arch bridges were fabricated for the anterior teeth and posterior implants to splint the anterior mobile teeth (Fig. 4). After the insertion of the bridge, the implants were evaluated by clinical and radiographic parameters at 1, 2 and 3 years. The status of the peri-implant tissues and of the periodontal tissues of adjacent teeth was assessed according to plaque index, bleeding upon probing, probing depth, mobility index, suppuration upon palpation.



Figure 4. Intraoral view after treatment

The patient was satisfied with the new prosthesis, there was no mobility, no pain, no bone loss around the implants, no bleeding on probing at abutment connection and at the last recall, peri-implant tissues were healthy. The teeth were asymptomatic and there was no pain on percussion. In the radiographic examination there were no lesions around the teeth and the implants.

Discussion

Treatment of an injury in the anterior maxillary area is usually challenging and difficult. Unfortunately, trauma to this region is very common⁵⁻⁹. There are various post-

traumatic bone or tooth conditions that demand different treatment strategies. Patients often present loss of tooth and surrounding bone, a tooth remnant with or without inflammatory lesion, an ankylosed tooth. An appropriate treatment plan can usually improve the success and results of these injuries.

Teeth and implants have different mobility patterns. Thus, it has been believed that implant-supported restorations should not be connected to natural teeth. However, this is not always the case¹⁰. Palmer et al¹¹ demonstrated fully functional successful restorations with no evidence of tooth intrusion and with stable bone levels at both teeth and implants in 3 years. It is believed that teeth do not stabilize implants but fully integrated implants can stabilize periodontally compromised teeth. In this case report, it was decided to fix the mobile teeth with the already osseointegrated implants instead of extraction, and the patient was followed for 3 years. The treatment outcome was satisfactory and successful, but long-term clinical evaluation is needed for advising to splint the traumatized teeth to osseointegrated implants.

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