

The Use of Implants and “MKI” Precision Attachment on Mandibular Rehabilitation, A Case Report

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Introduction

The achievement of full mouth rehabilitation is the main goal of patient and dentist, and the use of implant for such a purpose is an attractive alternative procedures [1-4]. The main target of Implantology is to achieve patient's comfort and esthetic throughout their healing phases till the final restoration [5,6], and maintaining the facial vertical dimension [7]. Incorporation of fixed prosthesis retained by implants and a removable prosthesis using a very fine delicate precision attachment (MK1) allow the patient to have a more pleasant and stable treatment and the patient will experience a less trauma. The vertical dimension of occlusion may be maintained, in addition to continued support of the facial structure.

The Case

A 66- year-old male attending the Gharafa Medical Complex in Doha, Qatar seeking an advice and treatment for his lower jaw prosthodontic problem. Clinical examination revealed a very carious and fractured $\overline{3\ 2\ 1}$ and poorly covered by a cantilevered bridge extending from $5 \leftarrow 1$ area. The 3 was endodontically treated and crowned, and the lower left area is completely edentulous.

Radiographical examination revealed, presence of a periapical changes underneath $\overline{3\ 2\ 1}$ with a wide area of boney ridge resorbtion as well as the presence of the first step of two stage implant IMZ system at the area of $\overline{5}$ and $\overline{7}$.

These two implants were laid and left without completion since 10 years, so they are completely barried by bone. The treatment plan was simply made to remove the cast bridge covering $\overline{3\ 2\ 1}$ with their teeth and to restore $\overline{3}$ then to do implant therapy for the lower right area by using ITI (straumann) transgingival system. SLA (sand blasted, large grite, acid etched) type was chosen to get shorten the time to load and to increase the success rate of the work [7,8,9]. Complete the implant for lower left area as a full mouth rehabilitation attempt.

It is advised to use an implant for each missing posterior tooth where the bone is favorite even in a staggered (offset, tripodisation) configuration to decrease bio-mechanical complications [7]. However, Halden *et al* [8] found by the use of three implants of 4.1mm in diameter and 10mm length kept the stress distribution within the normal limits.

In this case it was decided to use one implant for each missing posterior tooth of the lower right region as Table (1).

Table 1: The Implants been used

Tooth	Width	Length
7	4.8	8.00
6	4.1	10.00
5	4.1	10.00
4	4.8	8.00
3	4.1	12.00





ITI solid screw SLA implants were laid in the area of $\overline{7\ 6\ 5}$ and a surgical extraction of $\overline{3\ 2\ 1}$ was made and removing all the infected, granulated tissue and remnants of remaining periodontal ligament and doing guided tissue regeneration procedure with the aid of demineralized freeze dried bone using (bone-oss) and an absorbable regenerative barrier to prevent epithelial migration into the ridge site using (bone-guide) absorbable membrane.

Lastly the implant in $\overline{3}$ area was laid after checking the success of the tissue regeneration in the area of $\overline{3\ 2}$ after waiting a period of six months. The area in $\overline{2\ 1}$ was not suitable for implantation. However, it is completely healed and calcified.

Unfortunately, all our trials to find the abutments of the transmucosal interpore IMZ (4.0mm) implant on area abutments of the $\overline{5\ 7}$ due to its internationally out of stock, this put us in face of two options, either to remove the implant and implant a new ITI implants or to leave them and replace it by removable prosthesis. The patient prefers the second option due to its faster result.

Therefore, the $\overline{3}$ has been restored and crowned by full veneer porcelain crown to which part of a newly designed precision attachment called MKI was attached, while the female part was attached to a cobalt - chromium partial denture.

This attachment is ready fabricated to achieve the balance and requirements of function, hygiene and esthetics in the oral environment. It is rigidly connected to natural abutments or implants using the premilled female and milled lingual arm, transferring chewing forces to the central axis of the abutment during insertion and withdrawal of the prosthesis.

The prosthesis has been placed, adjusted and monitored for four months without any complaints.

During the treatment time, the patient was wearing a temporary full denture fabricated with cold cure acrylic lined by soft tissue liner to avoid premature pressure being placed on the newly implanted area. The patient was instructed to refrain from its use for seven days after each implant surgery.

Discussion and Conclusion

The importance of dental treatment is very much essential now. This technique is highly recommended and is been used for 10 years now without any clinical problem.

However, most of the patients cannot continue the implant treatment therapy due to tiredness or could not afford the treatment financially.

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