



A SIMPLIFIED SOLUTION FOR ATROPHIED MANDIBULAR RIDGE WITH O RING MANDIBULAR TISSUE BORNE OVER DENTURE OPPOSING A MAXILLARY TOOTH SUPPORTED OVERDENTURE- A CASE REPORT

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Article Info <i>Received 15/05/2015</i> <i>Revised 27/05/2015</i> <i>Accepted 10/06/2015</i> Key words: Transitional implants, atrophied ridge, Over dentures.	ABSTRACT Atrophied mandibular ridge is always a challenge for the prosthodontist to satisfy the complete denture patients. Many techniques, application of different materials in resorbed ridges do help the prosthodontist to a certain extent. With the introduction of dental implants, it has become a reality for edentulous patient to overcome issues related to the resorbed ridges. This article discusses the application of transitional implants with o ring mandibular tissue borne over denture opposing a maxillary tooth supported over denture.
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INTRODUCTION

Dental professionals have been advising for complete dentures for treating patients without teeth for decades. All the patients who lost their entire teeth rely on their soft and hard tissues of the residual alveolar ridge for support, retention and stability as well as function of the prostheses. These patients face an uphill prospect of further loss of bone leading to decreased retention and poor stability of their dentures and consequential discomfort. A treatment alternative which is beneficial for these patients is transitional implant supported tissue borne over dentures. This particular treatment modality offers distinct advantages to all patients who can benefit from placing these implants [1].

These implants are placed and utilized for a specific time after which it is lost or removed. These implants come with different configurations and assorted lengths with a ball attachment built on to the top of implant. When an unstable conventional full denture is replaced by an implant supported over denture, retention,

support and stability can be greatly improved [2]. Implants supported over dentures are classified into two types. First is tissue borne implant retained and second implant borne implant retained .A implant retained tissue borne over denture primarily relies on residual alveolar ridge for support[3] This case report describes a simplified solution for atrophied mandibular ridges with o ring type mandibular tissue borne over denture

CASE REPORT

A male patient aged 45 years reported to the clinic with missing maxillary and mandibular teeth. History revealed that the patient wore conventional Mandibular single complete dentures and maxillary tooth supported over denture for two years. Patient was satisfied with his maxillary denture and was in need of mandibular denture which could match the retention as well as stability of maxillary denture. On examination patients mandibular ridge was atrophied.



TREATMENT PLAN

A decision was made based on the patient's desire to have stable dental implants which can solve his problems related to the mandibular denture. The patients existing dentures were decided to be used after implant placement. Diagnostic impressions were made and cast poured (Fig.1). A preoperative orthopantomograph was taken and examined to analyse the quality as well as quantity of bone (Fig.2). All blood investigations were satisfactory for the surgery. A bone mapping procedure was followed with a decision of using four O- ring TRI-mini implants which measured 13mm in length and 2,4mm in diameter and make an over denture over it.

TREATMENT PROTOCOL

Local anaesthesia was given and the flap was raised to visualize any bony defects which can also give a direct vision for the operating dentist about the placement of implants. A pilot drill was followed by placing four implants in the predetermined areas. The relative parallelism of implants was checked by paralleling tools to

make sure all four implant were parallel which was confirmed again with a post-operative orthopantomograph. The healing period was closely monitored with clinical examination and condition of the implants.

Patients existing mandibular denture was checked and modified into an implant supported over denture. Marking guides were placed on tissue surface of the denture to create hollow space for placement of O-ring Teflon sleeves (Fig.3). A 5mm drill was made to remove acrylic resin to create space for four Teflon sleeves. The sleeves were placed over the over denture abutments. The denture was tried for a passive insertion and removal and checked for occlusion with maxillary denture. After confirming, cold cure acrylic resin was mixed and carefully added over the hollow site. The denture was inserted against the abutments of the implant and the patient was advised to close in maximum intercuspation. After the polymerisation the denture was removed polished and reinserted with the maxillary over denture (Fig.4). Post insertion instructions were given and the importance of recall was instructed to the patient.

Figure 1. Diagnostic casts



Figure 2. Orthopantomograph



Figure 3. Teflon O sleeves



Figure 4. Maxillary and mandibular over denture



DISCUSSION

Complete dentures have been practiced for years with good success, but the success becomes limited when it comes to treating patients with atrophied mandibular ridges. Moreover the rate of ridge resorption also affects the longevity of the retention in mandibular denture. Even with the advances in the dental materials available for impression, sulcular extension prosthesis and neutral zone techniques it is difficult to restore a permanent solution to the problems associated with the dentures in atrophied mandible. Patient may be compromised medically, anatomically and financially and cannot benefit from conventional implant therapy [4]. In the early 1990s several

practitioners and manufacturers began experimenting with smaller provisional types of dental implants that were used for immediate or early restorations and then discarded as permanent implants were integrated [5]. During the last decade, the increased use of dental implants in association with this treatment and the desire to provide less complex, more economical implant prosthodontics treatments for edentulous patients have led practitioners to use this treatment and the dental literature to report it to an unprecedented extent [6]. The number of implants necessary for implant over denture treatment seems to be using either two or four implants. Two dental implants are

usually considered the minimal number necessary for mandibular implant over denture treatment. Both the supporting mucosa and implants provide support, retention, and stability for over denture prosthesis. As more implants are used, the responsibility for these functions shifts from the mucosa to the implants. For completely edentulous mandible, a 2-implant over denture treatment should be the standard of care relative to conventional denture treatment [7]. The use of implants to support over dentures has been advocated by many authors with the following advantages 1) Higher patient acceptance 2) less trauma to the underlying tissue 3) improved retention and stability of the dentures and 4) improved function [8]. The bonding of O-ring attachment should be done one at a time so that it minimizes the positional change in the denture during the polymerization of acrylic resin. It is difficult to Attempt to simultaneously bond more than one O-ring attachments to the denture. The procedure may require removing, repositioning, and rebonding of the attachments if they are improperly positioned. The denture may lock in place if excessive material is applied or if the implants are not parallel to each other or the path of withdrawal [9]. The importance of this technique is to provide accurate relation of the implant components and the supporting tissues without finger pressure. Any subsequent improvement in the clinical outcome for this treatment that would result

from increasing the number of implants is not clearly understood.

Additional implants may improve prosthesis support, but retention and stability, and ultimately the clinical outcome, are probably not significantly improved by increasing the number of implants used with mandibular implant. Alternative treatment option of retaining dentures can be done using bar and hader clip which can provide retention and support along with added advantage of stress breaking which is not possible in TRI implants. But the bar to which the clip joins should be located in the symphysis, be in a straight line which is impossible in all edentulous situations due to the limitation of the space [10]

CONCLUSION

With proper clinical observation and follow up it was to conclude that the O-ring implant supported complete denture greatly enhanced retention of the prostheses and provided superior comfort when compared to conventional denture. This was acknowledged by the patient very well. For the dentist the clinical experience gained with conventional complete denture ardently governs the properly executed implant supported complete denture.

CONFLICT OF INTEREST

Nil.

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