

**REHABILITATION OF NARROW MESIODISTAL SPACES WITH ONE PIECE
IMPLANT AND IMMEDIATE PROVISIONALIZATION- TWO CASE REPORTS**Akhil Mittal^{1*}, Rashmi Sharma², Shaker Bisht³, T. K. Giri⁴ and Sugato Mukherjee⁵¹Captain (Prosthodontist), 33 CDU, Army Dental Corps.^{2,3}PG Student, Department of Prosthodontics, Dr R Ahmed Dental College & Hospital, Kolkata.⁴Professor, Department of Prosthodontics, Principal, Dr R Ahmed Dental College & Hospital, Kolkata.⁵Professor & HOD, Department of Prosthodontics, Principal, Dr R Ahmed Dental College & Hospital, Kolkata.***Corresponding Author: Dr. Akhil Mittal**

Captain (Prosthodontist), 33 CDU, Army Dental Corps.

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ABSTRACT

Use of dental implants to replace natural tooth has become common in contemporary dental practice, but some impediments to their use have traditionally included smaller edentulous inter tooth spaces, reduced vertical or transverse dimension of the residual ridge, convergent roots, and/or close proximity of root trunks can cause the implant team to opt for other options to replace the natural tooth, usually a resin-bonded fixed prosthesis or a removable prosthesis. So, a one-piece implant was developed to overcome this challenge. A one-piece implant does not have a microgap between the implant body and abutment connection, and therefore initial crestal bone loss over time may be reduced. The advantage of this design is increased strength and elimination of the risk of abutment screw loosening. These implants are restored immediately resulting in improved esthetics, avoids second stage surgery and maintains the implant stability. This is called as Nonfunctional immediate teeth (N-FIT) concept. Through this paper we will present restoration of narrow mesiodistal spaces with one piece implant followed with immediate restoration.

KEYWORDS: One piece implant, immediate loading, N-FIT.**INTRODUCTION**

Conventional two piece implant requires minimum 1.5mm of safe distance between implant and natural tooth to prevent horizontal bone loss converting into vertical.^[1,2] So to place a 3mm diameter implant, a minimum of 6mm (1.5+3+1.5) of space is required. This scenario is not always possible in case of narrow mesiodistal spaces, where mesiodistal space may be 5mm or lesser. This situation is specially seen while replacing mandibular anteriors, maxillary lateral incisors etc.

In such situation one pc implant is advantageous as the safe distance required is reduced to 0.5-1mm. This is possible because implant and abutment is one unit so there is no microgap between the two and bone loss is minimal.^[1-4]

Case 1: A 23 year old male patient reported with the chief complaint of missing upper right lateral incisor. Wax mock up was done on diagnostic cast and surgical template was fabricated. (Fig.1).



Fig. 1: Missing Maxillary Rt. lateral incisor. CBCT analysis done.

Based on the CBCT analysis an implant size of 3D X 11.5L (Adin Implant, Israel) was selected.

Implant Surgery was performed. Initially a pilot drill of 2mm was done and angulation was checked using a paralleling tool, followed by enlarging with 2.8mm drill. Then implant was inserted and desired torque and primary stability of >35Ncm was achieved. (Fig.2).

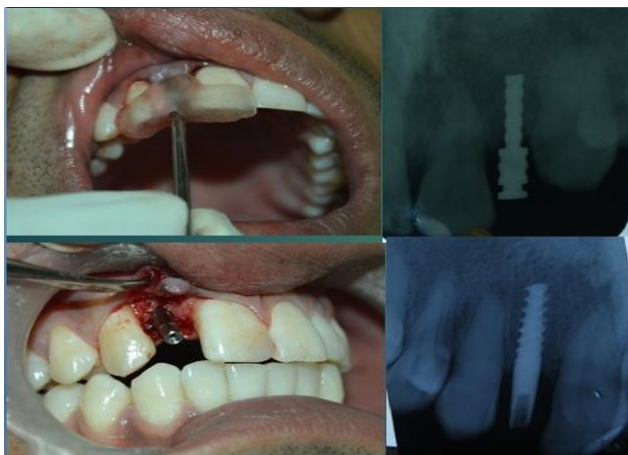


Fig. 2: shows Implant placement.

Now with help of wax mock up immediate provisional was fabricated with Protemp (3M-ESPE). After cementation of temporary restoration, suture were placed which were removed 1 week later. Provisional was kept free from occlusal contact in both centric and eccentric position. (Fig.3,4).



Fig. 3: Immediate Provisional restoration.



Fig. 4: Post-op view.

Case 2: A 58 year old male patient wanted to replace his missing right upper lateral incisor which was extracted 1 year back. Cbct analysis was done (Fig.1). Based on the

analysis an implant of 3D X 11.5L (Adin, Israel) was selected.

Steps similar to case 1 were followed. (fig.2,3,4).



Fig. 1: Missing Maxillary Rt. lateral incisor. CBCT analysis done.



Fig. 2: Implant placement and Immediate Temporary.



Fig. 3: Provisional restoration after removing suture.



Fig. 8: Post-op view.

DISCUSSION

Missing teeth can cause loss of self-esteem and have an impact on social life. The Implant-supported prosthesis can overcome these problems and has proved to be a significant addition to restorative dentistry. One pc implant are unique for such cases as it increases strength because of single piece and no joint, eliminated the risk of abutment screw loosening and minimal to no crestal bone loss because of no microgap between implant and abutment which minimizes bacterial colonization.^[5-8]

Immediate provisionalization restored the esthetics on the same day instead of conventional protocol which require a waiting period of 3-6 months. These temporary were placed based on the principle of N-FIT concept (Non functional immediate temporary), to minimize occlusal and parafunctional forces.^[1,4]

Placement of implant at correct angulation is very important as angle correction more than 15 degrees cannot be done in such cases because implant and abutment are joined. This is a limitation of one pc implant.

CONCLUSION

The management of compromised intertooth spaces presents a challenge for the contemporary dental implant team. The One piece implant design is a viable option to restore an edentulous space. Proper case selection and implant criteria assessment is essential.

When considering a one piece implant design one must assess whether the conventional implant criteria is met (i.e. bone quality and quantity, intra-occlusal and inter-maxillary space, keratinized gingiva etc.) as well as whether the implants can be loaded immediately.

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