

## Rehabilitation of Anterior maxilla and mandible with Fixed implant supported restorations and Posterior mandibular region with Removal Prosthesis using Extra-coronal Attachments: a Case Report.



### Dental Science

**KEYWORDS:** Rehabilitation, Implants, Prosthesis.

**Dr. Neha Nandal**

PG 3 rd year, Department of Prosthodontics, ITS CDSR, Muradnagar. Corresponding Author

**COL.(Dr.) S.K. Agarwal**

Professor & Head, Department of Prosthodontics, ITS CDSR, Muradnagar.

**Dr. Praful Mehra**

Reader, Department of Prosthodontics, ITS CDSR, Muradnagar.

**Dr. Gaurav Issar**

Senior Lecturer, Department of Prosthodontics, ITS CDSR, Muradnagar.

**Dr. Rinki Kansal**

PG 2 nd year, Department of Prosthodontics, ITS CDSR, Muradnagar.

**Dr. Silvi Jerath**

PG 2 nd year, Department of Prosthodontics, ITS CDSR, Muradnagar.

### ABSTRACT

Full mouth rehabilitation always needs careful attention and treatment planning. It becomes more challenging with the partial edentulism where anterior segment of both arches is involved. Working backwards from the wax-up of the final diagnostic model of the proposed treatment assists not only with the management of the complex case, but will help avoid mishaps.<sup>1</sup> Effective communication between the team and the patient is crucial. Understanding the patient's expectations is key to a successful treatment. Deciding that these expectations are realistic requires a correct diagnosis and an inter-disciplinary treatment plan that is logical. This approach takes time and requires a comprehensive treatment plan discussion between the team members, and then a thorough case presentation to the patient.<sup>2</sup>

### INTRODUCTION

There is great concern for esthetics in patients where rehabilitation of anterior segment is to be done. Here we present a case came with failed long span bridges in anterior maxilla as well as in mandible replaced with implant supported fixed restorations. Posterior mandibular segment is rehabilitated with removable prosthesis retained with extracoronary attachments.

Clinical management of missing teeth with dental implants has become common and well accepted. With current techniques and protocols, success of dental implants is more than 90 percent in both the maxilla and mandible, with even higher success in the anterior regions.<sup>3,4</sup>

### Case report:

A 45-year old female reported to the outpatient Prosthodontics department of ITS-Dental College & Hospital, Muradnagar, Ghaziabad, with fixed long span (10 unit) bridge in both anterior maxilla and mandible associated with pain in upper left premolar region and also wants rehabilitation for edentulous posterior mandible. The patient gives history of trauma due to collision with slab which resulted in loss of some anterior teeth. She was rehabilitated with anterior 10 unit bridge in both the arches 4 years back. But due to lack of support, we advised removal of both long span bridges from both arches. On removal of faulty long span bridge in upper arch, it was found that both left side premolars were mutilated or fractured and the upper central and lateral incisors, right side first premolar were missing. Both canines and right side second premolar was present in healthy state (Fig 2a).

In lower arch, central incisors, lateral incisors, canines, first molars and left side second molar were missing. The lower right and left premolars and right second molar was present (Fig 1a).

The clinical findings were confirmed in the radiographic examination. After thorough examination, oral prophylaxis was done then diagnostic impressions were made with irreversible hydrocolloid.

### TREATMENT PLANNING

The patient was informed about the treatment plan. The different

treatment modalities that were available were described. These included implant placement, implant supported prosthesis and removable prosthesis with extracoronary attachments. Diagnostic wax up was done for the patient.

### TREATMENT:

#### Initial therapy

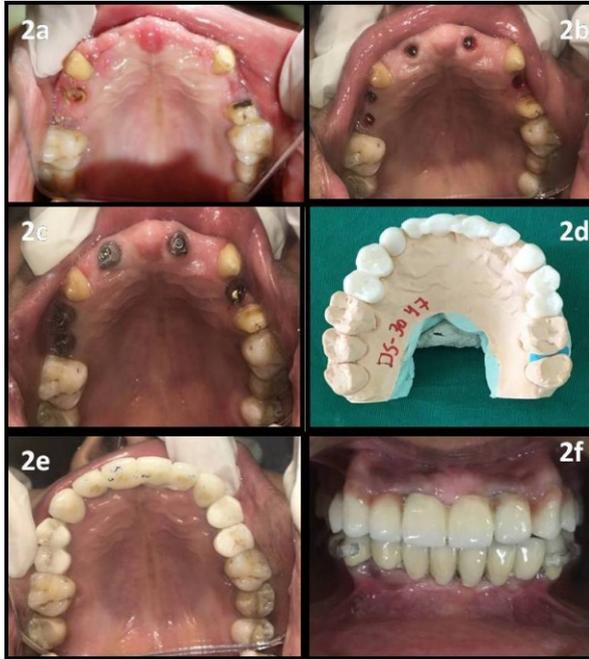
This treatment included patient information, oral hygiene instructions and professional tooth debridement. Poor prognosis teeth upper right side first and second premolars were extracted.

#### Implant Placement

For mandibular anterior region, a full thickness mucoperiosteal flap was elevated both buccally and lingually and extended from tooth 33 to 43. Osteotomies were done followed with the placement of implants (ADIN) (Fig 1b). Flaps were closed with interrupted sutures. The sutures were removed after 2 weeks. After 3 months of stage 1 surgery, healing abutments were placed. Three weeks after the second-stage surgery, we began the fabrication of final prostheses. Screw retained bridge of porcelain fuse to metal is fabricated for teeth 31, 32, 33, 41, 42, & 43 and porcelain fuse to metal crowns were cemented on 34, 35, 44 & 45 as final prosthesis (Fig 1c, 1d). Following the placement of implants wax up for the fabrication of flexible removable denture was done (Fig 1e) and the final result showing the mandibular arch with flexible denture and screw retained implant prosthesis (Fig 1f).



For maxillary anterior region, a full thickness mucoperiosteal flap was elevated both buccally and palatally. Osteotomies were done followed by placement of 5 implants in the regions 12, 22, 14, 15 and 25 (Fig 2b). Flaps were closed with interrupted sutures. The sutures were removed after 2 weeks. Following the healing phase abutments in maxillary arch were placed (Fig 2c). Ceramic copings and framework was checked for the maxillary arch on the cast (Fig 2d). Then, final prosthesis of zirconia with layering was fabricated on 11, 12, 13, 14, 15, 21, 22, 23 & 24 and cemented with resin cement (Maxemalite, Dual cure resin cement, Kerr) (Fig 2e). Patient was provided with fixed implant & tooth supported restorations and removable partial denture as well for rehabilitating upper and lower arches (Fig 2f).



#### Discussion:

For any long span restoration which is lacking support from teeth, it is advisable to remove failing restorations along with extraction of poor prognosis teeth and followed with the best possible treatment for that patient. In this case, 10 unit bridges in both the arches were supported by 4 teeth only by past 3 years. So, removal of faulty long span bridges was done followed by osteotomies for placing implant in both the arches.

Removable partial dentures (RPD) have provided a viable treatment for partially edentulous patients. There are several treatment options for rehabilitation of partial edentulism including the use of conventional or implant-retained fixed prostheses. Depending on several given diagnostic factors and patient's perspective best treatment plan should be selected for the patient. New technologies have been dramatically improving the quality of removable partial denture and the lives of patients, who use them. In recent year, dentistry has witnessed use of Computer added design Computer added milling (CAD-CAM), precision milled and semiprecision attachments, improved impression materials, improved techniques and designs. Precision attachments have been used in removable and fixed prosthetics for years and have contributed to the success of RPDs, overdentures, segmented fixed prosthetics, and implants. Removable partial dentures fabricated with precision/Semi precision attachments for retention and support are the best prosthesis available to dentistry where fixed restorations are contraindicated. There are number of attachments available now. At the same time, attachments are being used in all manner of restorative procedures, from partial dentures to implant-based prostheses. No single attachment is perfect for every application, it is critical that the appropriate attachment be utilized for each individual case situation. By analysing study models and x-rays, the

clinician can make several important determinations, each of which will influence final attachment selection. There is significant number of patients who could benefit from this treatment option, both long and short term<sup>5</sup>.

The available bone for an implant site in many cases can leave much to be desired. Bone volume, bone quality, and ridge length can present the implantologist with a challenge for restorative treatment.<sup>7</sup>

#### Conclusion:

The main objective of prosthodontics is to preserve the health of the remaining tissues and structures: teeth, periodontal tissues, temporomandibular joint and oral facial muscles. In the present case patient was previously treated with the poorly planned restorations which were not fabricated by considering prosthodontic principles. As a result old restorations could not satisfy patient's realistic expectation and along they were causing more destruction to oral structures. For gaining support from bone implant placement is best choice of treatment at young age where long span edentulous space is present. It not only improves the prognosis for treatment but also fulfills patient esthetic as well as functional requirements.

#### References:

1. Bahat O, Handelsman M. Presurgical treatment planning and surgical guidelines for dental implants. In Wilson T et al. Advanced periodontics. pp 323-340. Chicago: Quintessence.
2. Spear F. The challenges of presenting interdisciplinary treatment. *Advanced Esthetics Interdiscip Dent* 2005; 1: 2.
3. Moy PK, Medina D, et al. Dental implant failure rates and associated risk factors. *Int J Oral Maxillofac Implants* 20(4):569-77, 2005.
4. Creugers NH, Kreulen CM, et al. A systematic review of single-tooth restorations supported by implants. *J Dent* 28(4):209-17, 2000.
5. A Khare, S Makkar & Roshna T. Full mouth rehabilitation with fixed and removal prosthesis using extracoronary attachments. *People's Journal of Scientific Research* Vol. 4(2), July 2011.
6. Lahori et al. Rehabilitation of the Anterior Maxilla with Guide Bone Regeneration and a Dental Implant Supported Prosthesis: A Case Report. *The Journal of Implant & Advanced Clinical Dentistry* Vol. 6, No. 5: 29-35, 2014.
7. Dennis Flanagan. Implant-supported fixed prosthetic treatment using very small-diameter implants: a case report. *J O Implantology*, 2006; 32(1): 34-7.