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FULL MOUTH RECONSTRUCTION- MALO IMPLANT BRIDGE: A CASE REPORT

Dental Science

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ABSTRACT

In the modern era of dentistry, we aim to restore, form, and function in a natural fashion maintaining the red and white balance in the oral cavity. The selection of the treatment plan by preserving the remains is the essential need that substantially influences the outcome we met. Full filling the demands of the completely edentulous patient is always considered a difficult task. Loss of teeth is the disability due to the physiological and various dental diseases like periodontal disease, dental caries, and trauma are more common. The complete loss of teeth causes various problems like difficulty in mastication, improper phonetics, and unacceptable esthetics of patients. The good amount of density and volume of the bone following desired inter arch space available. Then Malo implant bridge prosthesis is a good treatment option to rehabilitate completely edentulous patients in less treatment cost and we can restore the pink part to enhance the esthetic of patients. In the article, we recreate the smile, form, and function of patients with Malo Implant Bridge technique.

KEYWORDS

Implant, Full Mouth, Complete denture, Malo Bridge.

INTRODUCTION

Completely edentulous patients walked into the clinic always with a lot of complaints such as they have compromised masticatory system, improper phonetics, and esthetic problems. The most ancient form of treatment is the fabrication of complete denture but again the complete arch rehabilitation success totally depends upon how patients are following the instructions of dentist in the next three months as adaptive changes occur in this phase and visiting for regular follow up, but when patient have retention problems along with full coverage of palate by the denture base, quality, and quantity of ridge is good and the patient is financially stable then we can plan the implant-supported denture prosthesis.

The dental implant is the most charming and modern treatment modality in dental practice because it fulfills the requirement of retention, stability, support, comfort, contour, and esthetic. The increased success rate of implant-supported prostheses has also increased the esthetic demands of patients and clinicians. An alternative to this type is screw-retained prosthesis is Malo implant bridge. Implant-supported metal-acrylic resin complete removable dental prosthesis was introduced to address the problems caused by unstable and uncomfortable mandibular dentures. The primary factor that determines the restoration type is the amount of inter-arch space1.Along with clinical parameters, esthetic parameters such as lip support, high maxillary lip line during smiling, a low mandibular lip line during a speech, and the patient with greater esthetic demands should be accurately evaluated. The prostheses come with increased advantages which include being less expensive to fabricate, less invasive, and highly esthetic restorations2. Malo concept may be successfully used by a combination of tilted and axially placed implants in complete edentulous in the anterior and posterior part of resorbed maxillae3. Problems like food impaction, speech problems, or difficulties in dealing with hygiene were reported by numerous authors. The purpose of this article is to present the clinical experience and positive outcomes of treating completely edentulous patients with the Malo implant bridge prosthesis.

CASE REPORT

58 years old male patient walked into the dental clinic with a chief complain of an ill-fitted complete denture in both the arches. On intraoral examination, the patient was partially edentulous w.r.t. 14, 15, 16, 17, 24, 25, 26, 27 and in mandibular arch root stump w.r.t. 34 and 44. The remaining natural teeth were periodontally not sound. (Fig.1). The patient had a history of Diabetes mellitus and he was under medication for the last 5 years. Past dental history revealed the extraction of multiple teeth due to periodontal disease.

Pre-operative analysis and treatment planning

The patient was advised for extraction as the remaining periodontally weak teeth. After complete healing of the extracted socket, a conventional complete denture was fabricated and the patient was recalled after 6 months for the definitive treatment. Then the patient was advised for Orthopantomography (OPG) and Cone beam computer tomography (CBCT) of the maxillary and mandibular arch (Fig. 2). After evaluating the radiographs, it was concluded that there was a good amount of bone height, bone width, bone density, and adequate inter-arch space. So, the treatment plan was decided as an implant-supported Malo implant prosthesis.

Surgical phase

After radiographic analysis of CBCT and OPG we decided to place six endosseous root form implant (Nobel Biocare active implant) in the maxillary arch with 11, 13, 16, 21, 23 and 26 positions and six implants in the mandibular arch with 33, 35, 36, 43, 45 and 46 positions respectively. The surgical procedure was planned in two phases. In the first phase of treatment, the surgical placement of six maxillary implants of dimensions 4.2×11.5 mm, 4.2×13mm, 5.5×13mm, 4.2×11.5mm, 4.2×13mm, 5.5×13 mm respectively followed by placement of the cover screws and two-stage Branemark protocol was followed. After the one-month patient was recalled and the surgical placement of six mandibular implants of dimension 3.3×13mm, 5×13mm, 5×11.5mm, 3.3×13mm, 5×13mm, 5×11.5mm respectively. OPG was advised to post-surgically (Fig.3). After completion of the healing period patient was kept under regular follow up in one month along with relining of the conventional complete denture as per the changes occurred in the respective arches. After 6 months the patient was recalled and second stage surgery was performed and suitable healing abutment was placed.

Prosthetic phase

After the three weeks of second-stage surgery, the steps for definite prosthesis was commenced, healing abutments were removed. The open-tray impression technique was selected for impression and copings were attached. The prepared acrylic custom tray was marked according to the impression coping, the tray was adjusted for the proper placement with impression copings intraorally. Tray adhesives were applied and addition silicon (Photosil India) was used in putty and light- body consistency in a single step. Once the material set

impressions copings were incorporated into impressions and screw was unscrewed and impressions were carefully removed in the single stroke to prevent the distortion.

Attachment of laboratory analogs, pouring off the gingival mask (Esthetic mask, Detax Germany) was done around the neck of the impression of implants and poured it with the die-stone (Ultra rock kalabhai, Mumbai, India) for fabricating of the master cast. Record bases and occlusal rims were fabricated and the facebow transfer done and transfer to the Hanau wide viu articulator later the maxilla-mandibular relationship was recorded. Articulation was done, castable abutments were attached and splinted with floss to maintain the parallelism with the application of pattern resin. The prepared jig trial was done to evaluate the parallelism intraorally. Records were sent to the laboratory for fabrication of metal framework which was later evaluated intraorally. (Fig. 4) The framework was again sent to the laboratory for porcelain build up over metal framework (fig. 5). Then maxilla-mandibular relationship was evaluated with porcelain fused to metal (PFM) framework along with proper wax-up to build the flanges on the labial for lip support and esthetic. Now conventional laboratory procedure was followed for the fabrication of prosthesis (Acrylic resin along with PFM), then finishing and polishing was carried out. The insertion of the prosthesis with minor adjustment done for the passive fit, later the occlusal evaluation is done, later proper post-operative instructions given (fig. 6) to the patient. The patient was kept under regular follow up within a short interval of time (fig. 7).

DISCUSSION

With all modifications in the techniques, the primary need for the prosthesis is to produce a passive fit for the fixed screw-retained prosthesis is arguably one of the most technically important phases in implant dentistry. With the number of modifications for preventing distortion that occurs during impression making, cast pouring, indexing, casting, and soldering error in the framework. To overcome the errors the disclosing media used to adjust the internal aspect of the casting can result in the non-bonding and passive fully seated prosthesis.

The rehabilitation of edentulous patients with a Malo implant bridge has been observed to achieve greater masticatory function and psychological satisfactions then with conventional overdentures. The occlusal force has been increased following the placement of the implant-supported prosthesis.

CONCLUSION

Every patient is different and has the unique treatment needs, proper diagnosis and treatment plan are important but cannot be all-inclusive. Careful integration and sequencing of the different areas of treatment needed to enhance the final result.

The procedure in this clinical procedure is for the rehabilitation of edentulous patients results inaccurately fitted, esthetic, and functionally efficient prosthesis. Patients were previously restored with the conventional complete denture and reveal his dissatisfaction with his removable prosthesis. Therefore, for this patient use of full arch implant-supported removable Malo implant bridge prosthesis provided the best option for a prosthetic solution. Occlusion and articulation were found to be good along with very good retention and stability was found during follow up visits. It was concluded that the implant-supported Malo bridge enhances the psychological support and more functionally efficient as compared to conventional complete dentures.

Fig. 1. PRE-OP

Fig 2. Pre op OPG

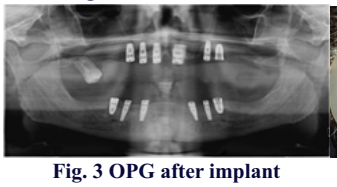

Fig. 3 OPG after implant

Fig. 4 Metal try in

Fig. 5 complete try in done

Fig. 6 prosthesis insertion done

Fig. 7 After 2yrs follow up.

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