



IMPLANT SUPPORTED FULL MOUTH PROSTHESES – A REVIEW

Dr. Mayank Chhabra

Post Graduate student, Department of Prosthodontics, JSS Dental College & Hospital, JSS Academy of Higher Education & Research, Mysore

Dr. Nanditha Kumar M*

Reader, Department of Prosthodontics, JSS Dental College & Hospital, JSS Academy of Higher Education & Research, Mysore - 570015 *Corresponding Author

ABSTRACT

Complete rehabilitation of maxillary and mandibular arch with implant supported restorations is the choice of treatment for most patients with partial or complete edentulism nowadays. The implant supported fixed prostheses present many advantages over an overdenture and removable partial denture for any edentulous patients which includes psychological effects for the patients of the "feels like teeth", apart from being fixed, it prevents entrapment of food and bone resorption. Implant full mouth prostheses have many benefits including increased stability and retention of the prostheses, better phonation and mastication, reduction in ridge resorption, resulting in patients' well-being and quality of life. This article summarizes the various implant supported full mouth prostheses.

KEYWORDS : Implant-supported prosthesis, Hybrid prosthesis, Implant supported overdentures, Malo bridge.

INTRODUCTION

Dentistry has come across remarkable progressions in dental restorative materials, methods, and methodologies that are effective for management of tooth loss with better patient acceptance. Scientifically established methodologies have advanced and these approaches are now providing the dentist with esthetically and practically accepted choices for tooth replacement.¹ Treatment options in cases of several tooth loss, may be complete denture, overdenture, removable partial denture, or implant supported prosthesis.

Of these, implant supported fixed prosthesis reduces resorption of alveolar ridges and restores function of the natural teeth, thus achieving increased satisfaction on patient's behalf when compared to the conventional removable dentures.² Placement of dental implants enhances the support, retention and stability. As a result, the patients are willing to accept the treatment plan for fixed restoration - for partial or complete edentulism as they are superior to other treatment options like complete denture or overdenture.

Indications of implant supported dentures are:

- In cases where there is severe morphologic compromise of denture supporting areas.
- In patients with mucosal tissues with low tolerance.
- Gag reflexes.
- Unprepared to wear a removable prosthesis.

Contraindications of implant supported dentures are:

- Uncontrolled metabolic disease.
- Acute illness.
- Pregnancy.
- Terminal illness.
- Unrealistic expectation
- Tumoricidal radiation to the implant site.
- Lack of operator experience
- Improper motivation.

Implant Supported Full Mouth Prostheses**Hybrid Prosthesis**

The purpose of implant therapy is either to improve the stability and retention of removable complete dentures or to avoid removable complete dentures by placing implant-supported fixed prostheses.³ The two approaches for an implant-supported fixed prosthesis are -

1. An implant-supported metal-ceramic fixed prosthesis:

It has a ceramic layer bonded to a cast metal framework which

can be secured with prosthetic retention screws or cemented to abutments.

2. Hybrid prosthesis supported by Implants:

This is a metal-acrylic resin complete fixed dental prosthesis supported by implants which solves the problems caused by uncomfortable and unstable removable dentures.

Dental rehabilitation and reconstruction in edentulous patients can be done by the use of cement-retained metal ceramic prosthesis, screw-retained metal ceramic prosthesis and screw retained hybrid prosthesis. Screw-retained prosthesis is advised for patients with weak denture stability and retention as this type of prosthesis can be placed and retrieved easily.⁴

Advantages:

- Reduction of the impact force of dynamic occlusal loads
- The fabrication of the prosthesis is less expensive.
- Highly esthetic restorations can be delivered.
- They can be used when a combination of tilted and axially placed implants are placed in the resorbed maxillae (posterior part).³

Paulo-malo Bridge

The immediate function concept of the "All-on-4" implants is the Malo implant bridge. According to this concept four implants are placed in both maxilla and the mandible and on the same day of the surgery the implants are immediately loaded. This procedure maximizes the use of available bone and allows for immediate function.⁵

It is very beneficial and important to avoid grafting in elderly patients as they have compromised health conditions such as osteoporosis and diabetes. The placement of graft is avoided in the Paulo Malo treatment concept.

Advantages of the bridge

- High success rate with Malo's bridge.
- Bone grafting is eliminated
- Shorter duration procedure and well tolerated by the patient.
- Hygienic, easy to clean and maintain the bridge.
- Cost effective.
- Use of longer implants improves anchorage.
- Anteroposterior spread of implants is improved by tilting of the implants.
- Load distribution for prosthesis is enhanced by

- anteroposterior spread.
- Prosthetic instability/fracture is reduced.
- Rigid prosthesis maintains marginal bone height of implants.
- Similar success rate is seen in tilted implants when splinted together as compared to traditional implants.

Implant Supported Overdentures

Based on the level of support provided by the tissue and implants , implant overdentures are classified into four types

Type I - Tissue-supported/implant-retained overdentures:

Attachments such as ball, locators or magnets are used to retain the overdentures on the implants. The same principles used for the fabrication of conventional overdentures are followed but are placed on two implants. Edentulous mandibles are treated with tissue-supported overdentures as it gets difficult to achieve retention from only two implants and support the soft tissue of the maxilla due to its thickness.

Type II and III - Tissue-and-implant supported overdentures: The overdentures derive support from implants and soft tissue. The major part of support is from soft tissues in type II overdentures. In case of Type III overdentures equal support is obtained from the implants and soft tissue.

Type IV - Solely implant-supported overdentures: The support for the overdentures is obtained solely from implants . They provide the best retention and are considered the most stable making them suitable for both maxillary and mandibular arches.^{6,7,8}

CONCLUSION

In the field of implant dentistry, significant advantages have been demonstrated by implant-supported full mouth prostheses. A successful outcome can be attained by taking necessary precautions during surgical preparation and execution, choosing the right prosthetic design, routine recall visits, and maintaining good oral hygiene.

REFERENCES

1. Hupp JR. Introduction to Implant Dentistry: A Student Guide. Journal of oral and maxillofacial surgery. 2017;75:1-100.
2. Contemporary implant dentistry 3 rd edition-Carl E. Misch
3. Thalji G, Bryington M, De Kok IJ, Cooper LF. Prosthodontic management of implant therapy. Dent Clin North Am 2014;58:207-25.
4. Pjetursson BE, Thoma D, Jung R, Zwahlen M, Zembic A. A systematic review of the survival and complication rates of implant supported fixed dental prostheses (FDPs) after a mean observation period of at least 5 years. Clin Oral Implants Res 2012;23 Suppl 6:22-38
5. Maló, P, Rangert, B, & Nobre, M. 2003. "All-on-Four" Immediate Function Concept with Bränemark System® Implants for Completely Edentulous Mandibles: A Retrospective Clinical Study. Clinical Implant Dentistry and Related Research 2003;5:2-9.
6. The McGill Consensus Statement on Overdentures Int J Prosthodont. 1998 Sep-Oct;11(5):413-4.
7. Parel SM. Implant overdentures: an overview. Ann R Australas Coll Dent Surg. 1996;13:201-207.
8. Schnitman PA, Wohrle PS, Rubenstein JE, DaSilva JD, Wang NH. Ten-year results for Branemark implants immediately loaded with fixed prostheses at implant placement. Int J Oral Maxillofac Implants. 1997;12:495-503.