



ORIGINAL RESEARCH PAPER

Medical Science

ALL ON 2 IMPLANTS SUPPORTED MANDIBULAR OVERDENTURE – AS A TREATMENT MODALITY

KEY WORDS:

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INTRODUCTION

In modern dentistry, dental implants are widely accepted as a treatment modality for rehabilitation of completely or partially edentulous patients. Dental implants are elective procedure for gaining stability functional efficiency and quality of life.¹

Bone characteristics play a major role in selection of implant and implant prosthesis because it's related to the stability factor. Problems associated with complete denture is lack of comfort, retention and stability. Implant supported overdenture predictably achieve good results clinically in terms of reduce bone resorption, reduced prosthesis movement, aesthetics, occlusion and improved occlusal function and maintenance of vertical dimension.²

Two-implant overdenture is considered as the first alternative treatment and globally known as the McGill Consensus from McGill University, Montreal, Canada. The instability and discomfort to patients represents the starting point in establishing the two-implant overdenture as the primary alternative treatment for patients with complete edentulous mandible.³

Regarding the applicability of implantology, it is well known through the numerous publications on longitudinal studies that the success rate of implants placed in the anterior mandible is very high and with minimal clinical impediments.⁴

In addition, the positive effect of implants on the mandibular ridge resorption has also been scientifically proven. Two-implant overdenture should be applied as the primary treatment option in complete edentulous mandible patients, while conventional complete denture should be considered an emergency treatment. It especially eliminates the fear of detachment in speech or mastication (unpleasant aspects, particularly in situations when patients are in the company of others). The implants are strong, durable, and prevent a number of oral modifications and prosthetic shortcomings.^{3,4} Various studies have been conducted to calculate the survival rate of all on two versus all on 4 implants supported mandibular overdenture and no difference was seen except in conditions where wrong selection of implant was done because of poor bony characteristics. By using different attachment systems, it was found that the long-term prognosis in the mandible was excellent. Stress distribution to the implants can be decreased by keeping the lever arm as short as possible by using short abutments. However, optimization of the loading conditions on an individual basis with different attachments may contribute to a higher survival rate. Careful evaluation of the bone morphology and loading in each individual case must be undertaken before treatment.^{5,6}

Risk factors which could be associated with failure includes medical conditions like uncontrolled diabetes, medications, untreated periodontal diseases, anatomical variations, poor bone quality, inadequate skills to place implant in anterior mandibular region. Various longitudinal studies have showed success of all on two supported implant prosthesis.⁵

Naert et al compared prosthetic aspects and patient

satisfaction with prosthetic care in two-implant-retained mandibular overdentures, whether implants were splinted with a bar or left with magnets or ball attachments. Prosthesis retention and mechanical as well as soft tissue complications were recorded in addition to patient satisfaction. In the ball attachment cases, need for tightening of abutment screws was the most common mechanical complication while in the magnet and bar attachment cases the most common complications were wear and corrosion, and the need for clip activation. Prosthesis stability and chewing comfort for the overdenture were rated significantly lower for the magnet attachment when compared to the ball and bar attachments. More comfort was associated with ball attachment.⁷

Bergendal T. et al evaluated the survival rate, clinical function and long-term prognosis of overdenture with two different attachment systems with limited number of supporting implants. The relationship between the loading conditions and osseointegration in the mandibles has proven to be favourable. The compact bone in the symphysis region seems to be sufficient to ensure excellent results over long periods.⁸ However, being acquainted with the main benefits brought by this type of treatment, the two-implant overdenture should be applied as the primary treatment option in complete edentulous mandible patients, while conventional complete denture should be considered an emergency treatment.

CONCLUSION

Restoration of the edentulous mandible is challenge in dental practice. Among different treatment implant supported options, an implant-retained overdenture is a simple, cost-effective solution in the rehabilitation of the edentulous mandible. Despite widespread acceptance of this treatment, some controversies still exist with regard to the design of the overdenture, selection of the appropriate attachment system, and the most optimal techniques for the overdenture fabrication. Clinicians and dental technicians have to follow guidelines, design principles and repair protocols.

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