Implant Supported Over-Dentures- Improved Standard of Care for Edentulous Patients-A Report of Two Cases

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I. Introduction

Implant prosthesis rehabilitation of edentulous patients with implant supported over-dentures has shown long term clinical success¹,²,³,⁴. Many studies has reported implant survival rates between 94% and 100% for implant supported over-dentures³,⁴,⁵,⁶,⁷,⁸,⁹,¹⁰. Although a wide variety of different implant supported prosthodontic rehabilitation design is available. The basic standard treatment with an implant over-dentures has been recommended with of two interforaminal implants¹¹,¹²,¹³. The two implant supported over-dentures commonly used abutment types includes bar of different design, ball and magnetic attachments³,⁶,¹⁴,¹⁵,¹⁶,¹⁷. The most common attachment uses is the ball attachment, while magnets are only used in rare instances¹⁴,¹⁷,¹⁸,¹⁹. Naert and colleagues reported that bar attachment was the most technically demanding attachment, compared to both types of unlinked attachment¹⁴,¹⁵.

II. Case Discussion

1. An 60yrs old patient who has been user of conventional dentures reported to our clinic with unstable mandibular denture. On examination we found severe resorption of mandibular alveolar ridge [fig1]. A per-operative OPG and IOPA was taken to determine the position of mental foramen [fig 2]. A 4.5Dx13mmL implants were placed in both parasymphysis region [fig 3]. After 6 months the implant were exposed and ball attachment was placed. The position of attachment was marked on pre fabricated dentures. The o-ring attachment was fixed with cold cure acrylic and final fitting of the denture was checked [fig 4,5].

Fig 1. Preop image showing poor alveolar ridge.  Fig 2. Pre op OPG

Fig 3. Post op OPG showing placed implant-retained  Fig 4. Placement of healing cap
2. Another 55 yrs old female patient reported with completely edentulous mouth. A implant supported over-denture was planned and similar steps were followed as case1. The ball attachment was getting covered with flabby tissue. Hence, a repeat uncovery surgery was performed with simultaneous vestibuloplasty along with use of collagen membrane. Both patients were followed for 1 year. Good retention of denture and implant stability was found in both patients. [fig 6,7,8]

III. Discussion

Conventional dentures gets support and retention from residual alveolar ridge and mucosa. Many patients develop problems with adapting to the complete denture. The adaptation of mandibular prosthesis is usually poor due to poor ridge and tongue movement. The 2002 McGill Consensus Statement cites studies of several populations showing that patients with implant-supported overdentures enjoy a significantly higher quality of life than those who wear conventional dentures. The McGill Statement concluded there is overwhelming evidence that the restoration of the edentulous mandible with a conventional denture is no longer the most appropriate choice of prosthetic treatment. The implant-supported overdenture has become the standard of care.

IV. Patient Centered Outcomes

Conventional complete dentures are supported by the edentulous ridge and the mucosa that overlies them. There is close contact but no direct attachment between the prosthesis and the ridges, and the prosthesis are constructed to maximize any potential retentive forces while attempting to minimize those that displace them. In such an active muscularly controlled environment this is problematic, and many patient have difficulties adapting to their denture, particularly the lower denture. Edentulism is also associated with a less healthy diet. Many patient report that they have to modify their food choices, especially when eating in a social environment, because of the limitation of their dentures. Evidence also suggest that if patients are challenged to eat different range of foods, their current satisfaction with their conventional denture is reduced. In a wider
context, patients social interaction can be negatively affected by conventional denture. People report avoiding going out to eat, being self-conscious of the presence of others as they feel they may notice them moving in the mouth when taking, eating or laughing and because they may find it difficult to wear their denture for a prolonged period of time.

A substantial body of evidence is now available demonstrating that patients satisfaction and quality of life with implant-supported mandibular denture is significantly greater than for conventional dentures. Much of this data comes from high quality randomized controlled trials. Patients report greater satisfaction with the stability and retention of their prosthesis which, in turn, appear to contribute to greater satisfaction with comfort and ability to chewing efficiency is also significantly increased, when the lower conventional denture is stabilized by means of implants. There is accumulating evidence that these advantages can be carried into old age. More recent evidence demonstrate that patient with mandibular implant supported overdenture are more likely to positively modify their diet than patient with convention denture particularly following dietary intervention. In contrast to conventional denture wearer, when encouraged to modify their diet, the satisfaction with their prosthesis of those wearing implant-supported overdenture appear to increases.

V. Conclusion

Dental implants have provided a another treatment option for edentulous patients. Evidence based studies have suggested conventional denture is a much poorer alternative than use of an implant-supported prosthesis. Hence, two implant-supported over-denture should be offered to edentulous patients as first choice of treatment.

References