

A Case Report

Implant Supported Overdenture with Implantswiss Implant & Locator Attachment For Atrophic Mandible - A Case Report

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Abstract

Implants today have overcome various limitations of traditional dentures. Implant supported overdentures does improve the retention, stability along with aesthetics. This case report aims to throw light on a patient with edentulous atrophic mandible who was rehabilitated with implant supported overdenture by locator attachment system to meet functional, economical and aesthetical expectations of the patient.

Keywords: Atrophic mandible, implant, locator attachment, overdenture.

INTRODUCTION

Transition from dentate to edentulous state can be difficult for patient to best compensate with functional and aesthetic values close to normal is possible by opting implant therapy supported with overdenture. An overdenture is defined as prosthesis that rests and covers one or more remaining natural teeth or implant.^[1] By placing implants in edentulous mandible and subsequently loading them, the level of bone resorption can be limited as light irritative stimuli will in turn cause changes in architecture, shape and volume there by resulting in subperiosteal growth.^[2]

Patient satisfaction and quality of life are increased by implant supported dentures. It is suggested that two implant supported overdenture is first treatment of choice in edentulous mandible.^[3] The use of two foraminal implants along with an overdenture can provide with long term neuromuscular benefits for an edentulous patient.^[4] The introduction of osseo integrated and implant retained prosthesis had led to paradigm shift of edentulism management specially in edentulous mandible, where major challenge is advance alveolar resorption.^[3]

Overdentures are retained by bars, balls, magnets or locator attachments.^[5] Among these, locator attachment provide versatility to its design.

In this we present a case of implantswiss implant supported overdenture with locator attachment for atrophic mandible in order to increase retention, stability along with masticatory functions thus preserving the aesthetics of patient.

CASE REPORT

A 72 year old male patient reported to the clinic with major complaint of loose denture, patient was not happy with the lower denture as when examined mandibular denture had very poor retention. On intraoral examination mandibular ridge was severely resorbed, maxilla was partially edentulous. Medical and dental history was taken properly.

This case report is discussed under 3 stages:

1. Diagnosis and treatment planning
2. Surgical phase
3. Prosthetic phase

All the other treatment options were discussed with patient, oral rehabilitation procedure was explained but due to financial and other confronts implant supported overdenture with locator attachment was planned. Maxilla and mandibular study models were then made. Radiographs and CBCT were taken to assess the bone levels for implant selection. Inter for a minimal two implants were planned. Bone was measured then bone level implants of diameter 3.7mm × 12mm were used, immediately after placing implants very good insertion torque of more than 35 Ncm was attained with good ISQ of 74. Patient was asked to follow

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standard post-operative protocol. OPG was done to check for implant swiss implant position. **(Figure.1)**

As primary stability and ISQ were reasonably good so it was decided to load implant early after 45 days as patient also wanted for early solution. So, once again ISQ was checked and secondary stability was confirmed with measurements of more than 75. Thereafter, early loading was done by using implant swiss implant system.

In the above case implant swiss implant locator abutment was then placed due to less interridge distance for providing good retention. **(Figure.2)**

The plastic resilient caps with the metal housing can be fit into denture by laboratory technique or picked up directly chair side, this procedure allows direct snap of denture into the locator abutment.

Locator abutment have dual retention, self-aligning feature with different levels of retention. Proper fitting of each

component was then assured of each component. The implant position was marked on the tissue surface of mandibular denture.

Denture caps were then fixed into the denture surface having retentive locator inserts. **(Figure.3)**

In chair side pickup procedure auto polymerising resin was used and blue inserts were given to the patient for initial few months.

In this retention can be gradually increased by changing the retention caps according to use and needs of individual. The given plastic resilient caps can be changed chair side while patient recall with the help of locator tool. Finally maxillary and mandibular dentures were inserted, occlusion was checked with patient's comfort and final OPG was taken to check for the fit of prosthesis attachment. **(Figure.4a,b)**

Patient was satisfied due to increased stability, masticatory efficiency and maintenance of denture.



Figure 1: OPG to Check For the Implant Swiss Implant Position.



Figure 2: Placement of Implant Swiss Implant Locator Abutment.



Figure 3: Retentive Locator Inserts Fixed Into Denture Surface.



Figure 4a: Final Placement of Maxillary and Mandibular Dentures.

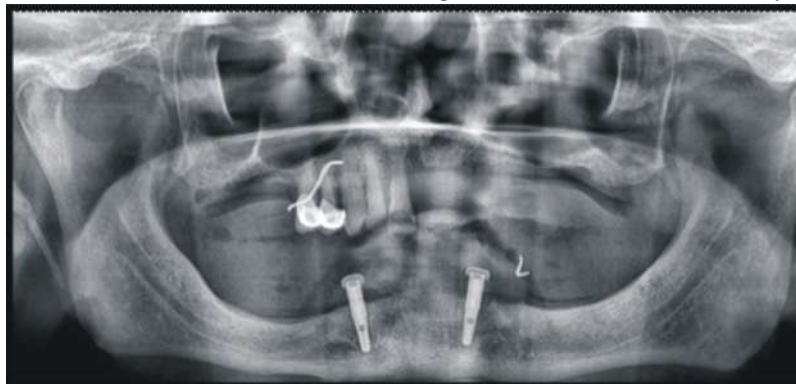


Figure 4b: OPG Depicting Final Fit of Implant Supported Denture with Implant Swiss Implant Locator Attachment.

DISCUSSION

In most of the cases edentulous patients find problem in adapting conventional denture. Overdentures either tooth supported or implant supported prove to be better option in case of atrophic mandibular ridges to increase retention and stability. Various other attachments are available like stud, bar, locator, magnetic and telescopic attachment. Attachment choice should be made based on number of implants, distance between ridges, type of prosthesis, degree of retention, patient expectation including cost factors.^[6,7]

In one of the study of overdentures stress induced by locator and ball attachments on bone found almost same, but locator attachment was found superior to ball attachment due to in between maintenance sessions could be reduced with locator type attachment.^[8] In another study done stated that implant supported overdenture using locator attachment in edentulous patient more retention, stability and patient satisfaction was found with better aesthetics, improved maintenance and comfort with less interaction of soft tissue.^[9] Retention and stability of denture got increased, better hygienic condition and soft tissue health is observed in locator attachment.^[10] In this case patient satisfaction was found to be more as compared to previous denture.

Locator system shows better clinical results as compared to other attachments.^[11] This was further supported by one of the clinical study which concluded that use of two narrow bone level implants placed with locator attachments are predictable and can support an overdenture in cases of atrophic mandible.^[12] This case too presented with atrophic mandibular ridge so locator attachment was given.

Although, ridge augmentation could help in ridge volume restoration but grafting could significantly increase the cost and treatment time.^[13,14,15] This clinical treatment of implant supported overdenture with locator avoid such extensive surgical procedures.

Mandibular denture most commonly presents problem to the patient as well as for the practitioner. Mandibular complete overdenture treatment has been available since years, however complete edentulous patients may be presented with better options like implant supported prosthetic reconstruction. Surgical treatment is well established for implant placement in the parasymphiseal region of the edentulous mandible in cases of atrophic mandibular ridge. Overdenture with locator attachment allow a resilient connection for the denture that is implant supported without any retention loss. Patient must maintain proper hygiene following with standard protocol for overdenture and follow up visits.

CONCLUSION

In this a simple, cost effective, more retentive, less invasive implantswiss implant with locator attachment overdenture treatment plan is explained for an atrophic mandibular ridge. This treatment plan prevents less bone resorption, more stability and less clinician time. Overall implant supported overdenture with locator attachment delivers greater patient satisfaction and stable prosthesis with better functions.

REFERENCES

1. The glossary of prosthodontic terms. *J Prosthet Dent* 2005, 94:10-92.
2. Mosnegutu A, Wismeijer D, Geraets W. Implantsupported mandibular overdentures can minimize mandibular bone resorption in edentulous patients: Results of a long-term radiologic evaluation. *Int. J Oral Maxillofac Implants.* 2015; 30:1378-1386.
3. Feine JS, Carlsson GE, Awad MA et al. The McGill consensus statement on overdentures: mandibular twoimplant overdentures as first choice standard of care for edentulous patients. Montreal, Quebec, May 24–25, 2002. *Int J Oral Maxillofac Implants.* 2002; 17:601-602.
4. Spitzl C, Pröschel P, Wichmann M, Heckmann S. Long-term neuromuscular status in overdenture and complete denture patients with severe mandibular atrophy. *Int J Oral Maxillofac Implants.* 2012;27:155–61. [PubMed] [Google Scholar]
5. Trakas T, Michalakis K, Kang K, Hirayama H. Attachment Systems for Implant Retained Overdentures: A Literature Review. *Implant Dentistry* 2006;15(10).
6. Alsiyabi AS, Felton DA, Cooper LF. The role of abutment attachment selection in resolving inadequate interarch distance: A clinical report. *J Prosthodont.* 2005;14:184-9.
7. Ahmed Yaseen Alqutaibi, Amal Fathy kaddah. Attachments used with implant supported overdenture. *International Dental and Medical Journal of Advanced Research.* 2016;2:1-5.
8. Mohammed I El Anwar. Comparison between two low profile attachment for implant mandibular overdenture. *Journal of genetic engineering and biotechnology.* 2014;12(1):45-51.
9. Lyndon Cooper, Arnold Rosen, Ibrahim Duqum. Implant supported overdenture options for the edentulous patients. *International Dentistry SA.* V13;(1):12-16.
10. Cordaro L, di Torresanto VM, Petricevic N, Jornet PR, Torsello F. Single unit attachments improve peri-implant soft tissue conditions in mandibular overdentures supported by four implants. *Clin Oral Implants Res.* 2013;24:536–42. [PubMed] [Google Scholar]
11. Cakarer S, Can T, Yaltirik M, Keskin C. Complications associated with the ball, bar and Locator attachments for implant-supported overdentures. *Med Oral Patol Oral Cir Bucal.* 2011;16:e953–9. [PubMed] [Google Scholar]
12. El-Sheikh AM, Shihabuddin OF, Ghoraba SM. Two versus three narrow-diameter implants with locator attachments supporting mandibular overdentures: A two-year prospective study. *Int J Dent.* 2012;2012:285684. [PMC free article] [PubMed] [Google Scholar]
13. Sennerby L, Roos J. Surgical determinants of clinical success of osseointegrated oral implants: A review of the literature. *Int J Prosthodont.* 1998;11:408–20. [PubMed] [Google Scholar]
14. Stellingsma K, Raghoobar GM, Meijer HJ, Stegenga B. The extremely resorbed mandible: A comparative prospective study of 2-year results with 3 treatment strategies. *Int J Oral Maxillofac Implants.* 2004;19:563–77. [PubMed] [Google Scholar]
15. Jackson BJ. Effective denture stabilization in an atrophic mandible. *Dent Today.* 2012;31:130, 132–3. [PubMed] [Google Scholar]