



Successful Provision of a Single Implant Retained Overdenture (SIMO) for an Older Patient: a Case Report

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BACKGROUND

Over recent decades, provision of implant retained prostheses has become a more accessible and available treatment option within the community. Implant retained overdentures have proved clinically effective in numerous randomized controlled trials and present functional, structural, as well as psychosocial benefits to patients.¹

PRESENTING PROBLEM

A 72 year old patient attended the Restorative Department complaining of difficulty tolerating her existing lower prosthesis. Two regular platform tissue level Straumann implants had been placed 15 years previously to support a complete lower overdenture. The implant in the lower right quadrant had subsequently been lost as a result of periimplantitis, resulting in poor retention of the current prosthesis. The remaining implant in the lower left quadrant was sound.

CLINICAL DETAILS

A CBCT scan showed inadequate bone availability within the lower arch to facilitate further implant placement on the right side. The patient's existing prosthesis was aesthetic and well designed but underextended posteriorly. The prosthesis engaged with a locator attachment on the single remaining implant however retention was lost upon functional movements resulting in embarrassment and loss of function.



Fig. 1: OPG radiograph showing the remaining implant in situ lower left quadrant. Note extensive lower ridge resorption.

CLINICAL MANAGEMENT



Fig. 2: The new lower implant retained overdenture in situ. Note the extension of the lingual flange to the full width and depth of the sulcus.



Fig. 3: The existing upper complete denture in occlusion in RCP with the new lower prosthesis.



Fig. 4: The final result: an aesthetic, retentive and well tolerated prosthesis.

The existing upper complete denture was accepted. A new complete lower overdenture was designed, adhering to conventional prosthodontic principles. A preliminary impression was taken in impression compound with an alginate wash. Care was taken during the impression taking stages to ensure the full width and depth of the buccal and lingual sulci were recorded. A heavy body polyvinylsiloxane (PVS) material was used for master impressions. Occlusion was recorded in the retruded contact position (RCP). A ball attachment was placed on the single remaining implant with the retentive element picked up chairside using self cure acrylic resin at the fit appointment. The denture making process was completed over 5 visits. The result was an aesthetic, retentive prosthesis well-tolerated and accepted by the patient following subsequent review at six months.



Fig. 5: The ball attachment placed on the single remaining implant

DISCUSSION

Generally for the treatment of the edentulous mandible, overdentures retained by two implants are the first choice of care.² In patients with severe alveolar ridge resorption, the anterior mandible is considered to be a safe and preferred site for implant placement. There is limited research available about the success rates of implant retained overdentures in the very old and institutionalized however one can assume that in time there will be an increasing need for dental care professionals to manage the results of failing cases. A significant body of evidence demonstrates the benefits of SIMOs for edentate older patients with clinical and patient reported outcomes superior to conventional complete dentures.³ Various case studies indicate improved retention with larger ball attachments versus standard locator attachments in the provision of SIMOs, with a preference toward delayed loading protocols.⁴

CONCLUSION

Managing the oral health needs of an ageing population, combined with the maintenance of more complex restorative treatment is an ongoing challenge to dental care professionals. SIMOs are a **cost-effective, minimally invasive and simple** treatment that can be used to restore function and aesthetics to edentulous patients, with high implant and prosthesis success rates and minimal complications. This case report illustrates that success with implant overdentures relies heavily on adherence to conventional prosthodontic principles which cannot be overlooked when utilising this treatment modality.

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