

No more embarrassment!

Harry Shiers takes a look at how we can stabilise complete mandibular or complete maxillary dentures

Treatment with conventional complete dentures has been shown to be reasonably successful when:

- The residual alveolar ridges are favourable
- The dentures have been well made
- The patient is reasonably philosophical about wearing dentures.

(Fenlon et al (2000) Comm Dent Oral Epidemiology 28: 133-140)

Treatment has not been successful, however, when:

- The ridges are very resorbed and even well made dentures have poor support and stability
- Movement of dentures results in discomfort pain and ulceration
- Dentures are not tolerated because of emotional reasons or a strong gag reflex
- A single denture has poor stability because of opposing natural teeth. The worst combination is remaining maxillary teeth opposing a mandibular denture on a severely resorbed residual ridge.

How often do we see patients with unstable complete mandibular dentures? To some, they are a social embarrass-

ment, provide difficulty with mastication, represent ageing and interfere with phonetics. There are recognised criteria for treating patients with implant-retained dentures:

- When the patient has experience of wearing complete dentures untroubled for many years, but loss of residual bone or neuromuscular control limits retention of the dentures resulting in movement of one or both dentures
- Where a fixed prosthesis cannot compensate for the resorbed bone (and associated support) to give a satisfactory appearance
- Where remaining teeth have unfavourable distribution for support and retention of removable partial dentures

Solutions

These problems may be overcome by the use of implants to support stabilise and retain dentures. In the mandible, the use of two implants placed in the intra-mental foramina area has been shown to be satisfactory in a multitude of studies. In the maxilla, the evidence is four implants should be used and the superstructure joined, usually by a bar between the abutments.

The prosthodontic components for implant retained complete dentures vary for different implant systems but

essentially there are similar methods for attaching the denture to the implants.

- Ball attachments
- Bars that may be: a) ovoid, and, b) round
- Magnets

The attachments are often one-piece units that are screwed directly into the head of the implant. There is a tool associated with each implant system that allows for placement and tightening of the over-denture abutment.

For the dentist who has referred out the surgery, restoring the patient with implant retained complete dentures is relatively straightforward. One can take an impression at the head of the implants or – once the appropriate abutments have been selected – an impression can be made at this level using custom-made trays, having made primary impressions in alginate.

The ball abutments act as the male and the female parts are located in the fit surface of the denture. These are provided by the manufacturer and take the form of small metal adjustable spring loaded rings (flanged), which may be placed by the laboratory or picked up in the mouth using cold cure acrylic.



Figure 1: A severely resorbed mandibular ridge



Figure 2: A one-piece ball abutment



Figure 3: A custom-made tray with openings for abutments



Figure 4: Two Astra Ball over denture abutments in situ



Figure 5: Healing abutment and overdenture abutment in place



Figure 6: Two Nobel Biocare over denture abutments in situ



Figure 7: plastic copings for Astra overdenture ball abutment



Figure 8: Two Nobel Biocare over denture abutments showing the flat surfaces which engage with the flats of the screwdriver provided by the manufacturer



Figure 9: The fit surface of a complete mandibular denture fitted with Nobel Biocare retainers



Figure 10: The fit surface of a complete mandibular denture fitted with Astratech retainers



Harry RBP Shiers BDS, MSc (implant dentistry), MGDS, MFDS, took his initial training in implants in 1989 with the Straumann Institute. He spent a year teaching undergraduates at The London Dental Hospital and since then has spent a year at the Eastman Dental Institute studying implants prior to completing the two-year part-time Master of Science in implant dentistry at Guy's Hospital London. He currently runs the Harcourt House Implant Referral Centre in the west end of London where he places implants for referring GPs.