

## **PROSTHODONTIC COMPLICATIONS ASSOCIATED WITH IMPLANT RETAINED OVERDENTURES USING THE LOCATOR ABUTMENT SYSTEM**

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### **Introduction:**

Implant retained overdentures have been successfully used to rehabilitate edentulous patients for over 30 years.<sup>1</sup> These prostheses may be retained by bars, balls, magnets or Ceka (PREAT Corporation, California, USA) attachments.<sup>2</sup> Regardless of attachment type, following insertion, implant retained overdentures appear to be associated with a high incidence of prosthetic complications.<sup>3,4,5</sup> These complications can occur on a regular basis and their management can be expensive and time consuming for the patient, clinician and technician. Locator® attachments (Zest Anchors LLC, California, USA) have recently been developed. Clinical experience suggests that these attachments are associated with few prosthodontic complications; however, no evidence has been published to substantiate this claim.<sup>2</sup>

### **Aim:**

To assess prosthodontic complications in edentulous patients following the provision of implant retained overdentures using the Locator® attachment system.

### **Method:**

All edentulous patients treated with Locator® attachments in the Department of Restorative Dentistry, Charles Clifford Dental Hospital, Sheffield between January 2008 and December 2009 were identified using a laboratory database.

#### **Inclusion criteria:**

- 1: Loading of implants delayed for at least 3 months following placement.
- 2: Implants restored with freestanding Locator® abutments
- 3: 1 year minimum follow up following insertion of definitive overdenture

Information was collected retrospectively from the case notes. Any complications occurring following insertion of the definitive overdenture were recorded.

### **Results:**

54 consecutive patients meeting the inclusion criteria were identified. However, the case records of 4 patients were unavailable (1 deceased). The remaining 50 patients (males: 19, females: 31, overall mean age: 67 (sd 11.17), age range: 38-92) received 52 implant retained overdentures (upper: 13, lower: 39). Upper overdentures were usually retained by 4 implants (76%, n=10) and lower overdentures were usually retained by 2 implants (80%, n=31). 25 overdentures (48%) were provided by Consultants and 24 overdentures (46%) were provided by General Dental Practitioners on the Sheffield "One-to-One" implant course. The remaining overdentures (6%) were provided by Specialist Trainees. 37% of

overdentures (n=19) had been in service for greater than 2 years. 51 denture bases (98%) were constructed from acrylic.

Prosthetic complications associated with these 52 overdentures necessitated 97 additional appointments over the study period with a mean of 1.87 (sd 1.58) appointments per denture (range 0-4). 16 overdentures (31%) required no additional appointments and 17 overdentures (33%) required just one additional appointment. The most commonly reported complications were denture adjustment (34%, n=33), problems with retention necessitating a change of retentive inserts (30%, n=29), loose or lost abutments (14%, n=14), replacement of retentive housings (11%, n=11) and fractured teeth or denture base (5%, n=5). One implant failure was reported in the maxilla. 66 complications (68%) occurred within the first 6 months, 85 complications (88%) occurred within the first year.

### Conclusions:

Freestanding Locator® abutments can be successfully used to retain implant overdentures in both the maxilla and mandible. The incidence of prosthetic complications associated with Locator® attachments appears comparable with other attachment mechanisms.<sup>2,3,4,5</sup> The complications associated with Locator® retained prostheses can usually be easily remedied with simple chairside procedures.

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