

Technique Tips – Options for temporization in the aesthetic zone after implant fixture placement

The majority of implants placed in the UK are not loaded or temporized immediately at fixture placement. Thus patients commonly have a period of osseointegration between placement of the implant fixture and definitive restoration. The length of this period is case dependent and is between 3 and 6 months following modern protocols.¹ Adjustments are made to account for patient risk factors, such as medical history, smoking and previous implant failure, as well as local factors, such as the quality and quantity of the bone and the use of bone grafting.

Outside of the aesthetic zone patients are often happy to forgo provisional prosthodontic replacement in the period leading to definitive restoration. In the aesthetic zone, however, this is rarely the case and patients will request either a fixed or removable prosthodontic solution.

A removable prosthodontic option

Removable partial dentures have the benefit of allowing easier access to the implant site for suture removal, placement of a trans-mucosal abutment, impression-taking and placement of the definitive restoration. Conversely, dentures may retain plaque at the surgical site and/or load the fixture prior to osseointegration, both of which may increase the risk of implant loss.

An alternative removable appliance may be fabricated using materials adopted from orthodontic retention devices. Figures 1 and 2 illustrate the use of a full coverage vacuum-formed retainer (VFR) to replace the missing UR1 temporarily during osseointegration of the implant fixture. The tooth-borne appliance removes the risk of prematurely loading the fixture and the prosthesis may be relieved to prevent plaque stagnation adjacent to the surgical site. The patient should be instructed to remove the appliance during mastication and whilst sleeping.

A fixed prosthodontic option

Patients often favour a fixed interim prosthesis. Clinically, this has the

advantage of not loading the implant. Conversely, removal and replacement at each clinical visit can be tedious and replication of the exact shade, contour and micro-aesthetics of the tooth to be replaced can be difficult.

If the tooth to be replaced is currently *in situ* the patient will require extraction and an immediate placement adhesive bridge, regardless of whether the fixture is placed following a delayed or immediate protocol. For this, an accurate cast of the intact arch is required prior to removal of the tooth to be replaced on this cast. This has to be estimated by the clinician or technician prior to fabrication of the bridge.

An alternative method utilizes the extracted tooth. This requires a sectional silicone impression to be made that records the lingual/palatal surface of the abutments adjacent to the implant site. This is used to fabricate two nickel-chromium adhesive retainers. Following tooth extraction and implant placement, if appropriate, the coronal portion of the extracted tooth is sectioned just below the CEJ and sealed with conventional GIC. Finally, the retainers can be definitively cemented to the new pontic with Panavia™ 21 EX (Kuraray Dental®) and the adjacent tooth with a conventional GIC (Figures 3 and 4).

Reference

- Hobkirk J, Watson RM, Searson L. *Introducing Dental Implants*. London: Churchill Livingstone, 2003.



Figure 1. A patient due for implant fixture placement in the UR1 region to replace a traumatically avulsed tooth.



Figure 2. VFR in the upper arch. This is fabricated on a cast of the patient with an appropriately shaped and coloured denture tooth or teeth in the edentulous area. The retainer should give full occlusal coverage to prevent uncontrolled tooth movements.



Figure 3. An occlusal view of two metal nickel-chromium retainers cemented to UL1 and the coronal portion of the UR1 that serves as a pontic. The fitting surface of the pontic has been adjusted to create room for the transmucosal abutment of an immediately placed implant.



Figure 4. The frontal view of the patient with the immediate adhesive bridge *in situ*. The large labio-cervical resorption defect, which necessitated extraction of the UR1, has been restored with a direct composite restoration. The retainers are cemented definitively to the palatal aspect of UR1 and provisionally to the UL1 to allow ease of removal.

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