COMPOSITE PONTICS FOR ORTHODONTIC PATIENTS WITH EXTRACTION SPACES

Esthetic orthodontic appliances continue to appeal to more patients, which results in objections to extraction spaces that remain for several months during orthodontic therapy. This has led orthodontists to design temporary pontics that fill extraction sites and that can be reduced as the spaces close. This report describes a simple, efficient, and expeditious technique for making such pontics. World J Orthod 2010;11:180–184.

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All orthodontic patients desire a great smile at the completion of their treatment. But many have concerns about esthetics during therapy. This has caused many patients to choose less noticeable orthodontic devices.¹,² Some patients elect lingual braces to completely avoid visible appliances.³ However, due to the high cost of lingual appliances, other patients opt for ceramic or plastic brackets that do show but are more discrete than conventional metal brackets.

Regardless of what appliances a patient chooses, premolar extractions will cause the display of vacant areas for several months. Many patients have voiced social and esthetic objections if such spaces become apparent. Patients who have selected lingual, ceramic, or plastic brackets often have an extraordinary sensitivity to visible extraction spaces. By using temporary pontics⁴–⁶ in extraction spaces, clinicians can assuage such objections.

As spaces close, clinicians can reduce the width of these pontics. Several methods of occupying extraction spaces during orthodontic therapy have been described previously.⁴–⁶ Prefabricated acrylic crowns have the disadvantage of availability and inventory cost, which makes them less desirable for many orthodontists. If the practitioner constructs temporary composite pontics, impressions for that purpose become necessary.

Recent developments in composite technique supply clinicians with a simpler and more efficient method of producing such replacements with a minimum of material, time, and expense. Laboratory technicians can use the patients' original study casts to form and shape light-cured composite pontics.

This article describes the technique for making temporary pontics that obviate patient objections to extraction spaces during orthodontic therapy.
LABORATORY PROCEDURE

The laboratory technician needs the patient’s original study casts, separating solution, and a small brush to apply the separating solution to the teeth planned for extraction and their adjacent teeth. He also needs some ordinary bonding composite of an acceptable shade.

The steps of the technique are as follows:

- The separator liquid is applied to the teeth to be extracted and the adjacent teeth (on the lingual surface for labial appliances; on the labial surface for lingual appliances) on the patient’s study cast (Fig 1).

- In patients with labial and lingual appliances, the entire facial surface of the tooth to be extracted is covered with composite (Fig 2). This is allowed to set for a few seconds before curing to avoid polishing. For lingual appliances, the facial surface of the adjacent tooth is also covered with a thin layer of light-curing composite.

- After the composite is cured, the cast is immersed in water for 10 to 20 minutes before the pontics are detached from the cast (Fig 3).

- The edges of the pontics are smoothed with a minicut bur or similar instrument (Fig 4).
Clinical Procedures

After extraction, the following steps are taken:

- The adjacent posterior tooth is etched (lingually for labial and facially for lingual appliances), and primer is applied (Figs 5 and 6).
- Composite is placed on the internal surface of the retainer portion for its attachment, as well as on the pontic to reinforce it (Fig 7).
- The pontic is positioned on the adjacent tooth and the adhesive flash removed before the composite is light cured (Fig 8).
- With labial appliances, composite is added to the mesial surface of the adjacent tooth, which cannot be performed on the study cast (Fig 9).
- The pontic is checked for contacts and adjusted as necessary.
- A space of 1 to 2 mm is left between the pontic and anterior teeth, as well as between the pontic and gingiva.
- A high-speed bur is used to remove composite as the anterior teeth retract and the extraction space closes.

Clinical examples are shown in Figs 10 to 13.
Clinicians must ensure that the pontics do not interfere with tooth movements or jeopardize oral hygiene or the healing of extraction spaces. Small spaces between the pontic and anterior teeth must be provided to allow for their alignment and retraction. A tiny gap between the pontic and gingiva will allow for better cleaning, thus preventing plaque from accumulating in the extraction site. As the anterior teeth retract, the pontic has to be reduced gradually.

Moreover, occlusal contacts with the pontics should be minimized because such contacts can dislodge these pontics. That is also why patients should be instructed to avoid hard food and to chew as little as possible in the area of any pontics.

The pontics described in this article can be used not only in patients with (first) premolar extractions, but also in patients who have genetically missing teeth, extractions of other teeth, or require long-term space maintenance.
CONCLUSION

This article describes an appealing, effective, and reasonable technique for intercepting patient complaints about visible extraction spaces during orthodontic therapy.

REFERENCES