Maxillectomy often leads to oral-nasal or excessive oral-pharyngeal communication.1 The remaining teeth may need further preparation for various reasons, including crown or fixed dental prosthesis restoration. High-volume water is used in conjunction with high-speed tooth preparation to avoid the excessive heat generation that could endanger the health of the pulp.2 The water aerosol generated by the high-speed handpiece can easily spread to the adjacent area. This could be challenging for patients with oral-nasal or excessive oral-pharyngeal communication, because the water can irritate the sensitive nasal or pharyngeal mucosa. High-speed suction or packing gauze may help to some extent. However, the suction is only minimally effective when the tooth preparation area is close to the defect area. Gauze cannot be stably packed in a large defect. Recently a field barrier method with a plastic sheet retained by an acrylic resin base was described for patients with an impaired glossopalatal seal.3 The device described in this article offers a straightforward and effective approach to protect the nasal or pharyngeal tissue from the irritation of water aerosol generated during tooth preparation. However, this approach does require extra steps to make the device. However, it requires at least a few remaining teeth for the retention of the device.

This article introduces a technique to prevent irritation to nasal and pharyngeal tissue caused by water aerosol during a tooth preparation procedure in patients with a maxillectomy. The technique describes procedures for fabricating a protective device with materials that are commonly available in the dental office.

**PROCEDURE**

1. Make an impression, with fast-set irreversible hydrocolloid (Identic Fast Set; Dux Dental) and a stock tray, of a patient with a palatal defect (Fig. 1A).

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1 A, Palatal defect after removal of malignant lesion. Note maxillary left first molar was restored with crown with defective margins and unfavorable contour. Defective crown was removed before definitive tooth preparation. B, Trimmed stone cast.

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2. Pour the impression with fast-set Type III dental stone (Mounting Stone; Whip Mix Corp). After the stone sets, trim the border and remove the palate area to allow the vacuum to function well to achieve optimal fit (see Fig. 1B).

3. Make a vacuum-formed thin plastic sheet with a 5-inch-square (0.035 inch in thickness) resin sheet (Invisacryl B; Great Lakes Orthodontics) in a dental vacuum-forming machine (Machine III; Keystone) (Fig. 2A).

4. Trim off the excess of the sheet with a heated scalpel and expose the tooth that will be prepared (such as the maxillary right first molar) as well as the adjacent area (such as the distal area of the maxillary second premolar) (see Fig. 2B). In the area with teeth, save the incisal/occlusal two-thirds of the plastic sheet to achieve adequate retention and easy removal. The arrows indicate the edges of the sheet exposed for tooth preparation.

5. Separate the protective device from the cast (see Fig. 2C).

6. Place the protective device intraorally to evaluate the fit and tooth exposure (see Fig. 2D).

7. Prepare the tooth with the protective device in place.

REFERENCES


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