

A simple, expeditious method for placement of thermoplastic impression material for speech aid prostheses

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The dental literature has discussed the attention to detail required when making impressions for speech aid prostheses, but many operators often do not capture all the patient's soft and hard tissue details when making either preliminary or definitive impressions for frameworks, castings, and baseplates.¹⁻³ In maxillofacial prosthetics, one responsibility of the clinician is the reestablishing of palatopharyngeal integrity and providing the potential for acceptable speech by generation of the speech aid prosthesis. Speech aid prostheses constructed for patients with soft palate defects must function in concert with soft palate tissues displaying considerable movement, yet the objective of obturation is to provide the ability to control nasal emission during speech and to prevent the leakage of material into the nasal passage during deglutition.

The use of a 20-cc or 30-cc plastic disposable syringe (B-D 30 cc syringe, Becton-Dickson and Co., Franklin Lakes, N.J.), in conjunction with Iowa wax (Miner, Concorde, Calif.), modeling plastic and a custom tray with loops or mesh work is a simple procedure to ensure detailed final impressions when capturing soft palate defects on a consistent basis. Iowa wax can also be used to impress maxillary hard palate defects to generate the bulb portion of an obturator. The operator may also use a functional impression technique to allow the wax to flow to the pharyngeal walls.

This article describes a simple procedure that can assist the dentist in routinely capturing soft palate anatomic defects when making final impressions for speech aid prostheses.

PROCEDURE

1. Try in the verified framework with the added meshwork or wire loop that extends to the soft palate defect to verify that no impingement occurs on any of the pharyngeal walls, soft palate, or other tissues, as the patient says "ah." Inspect the position of the soft palate at rest and during head movement.
2. Border mold the margins of the defect with warm modeling plastic on the meshwork/wire loop. The loop must be extended adequately to support the

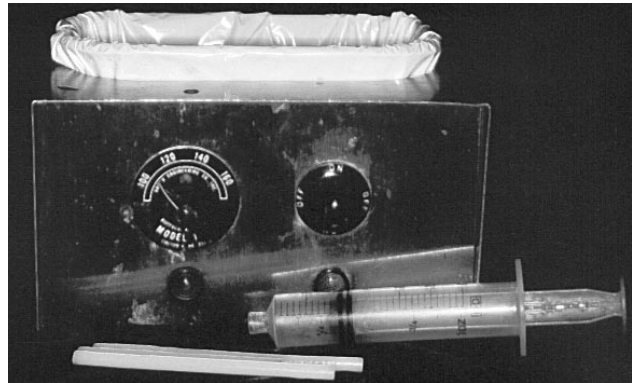


Fig. 1. Suggested armamentarium includes water bath, plastic 30-cc syringe, and Iowa wax.

modeling plastic. Instruct the patient to move his head in a circular manner from side to side, while bending his head forward to his chest. The patient should also speak and swallow, for these movements activate the patient's remaining palatopharyngeal musculature and shape the modeling plastic.

3. Once the border molding process is completed, ask the patient to speak, to swallow a small portion of water, and then breathe through the nostrils to test the effectiveness of the formed obturator. If the position and contours of the obturator are satisfactory, all extensions are reduced approximately 1 mm with a sharp scalpel.
4. Place a 20-cc or 30-cc syringe with room temperature Iowa wax (previously placed into the syringe in a molten stage with aperture blocked by thumb) into a water bath with the temperature set at 108°F (42°C). On melting of the wax, remove the syringe from the water bath and slowly syringe the material onto the modeling plastic to obtain an impression of the defect (Fig. 1).
5. Repeat the functions previously used in activating the palatopharyngeal musculature to establish the contours of the obturator in the Iowa wax (Fig. 2), then leave the obturator impression in the mouth for approximately 5 minutes.
6. Remove the impression and then chill it in cold water. Examine the impression to verify that all desired contours were captured.
7. Process the definitive obturator in the customary manner with clear heat-activated methyl methacrylate resin. (Clear heat-activated resin is used to facil-

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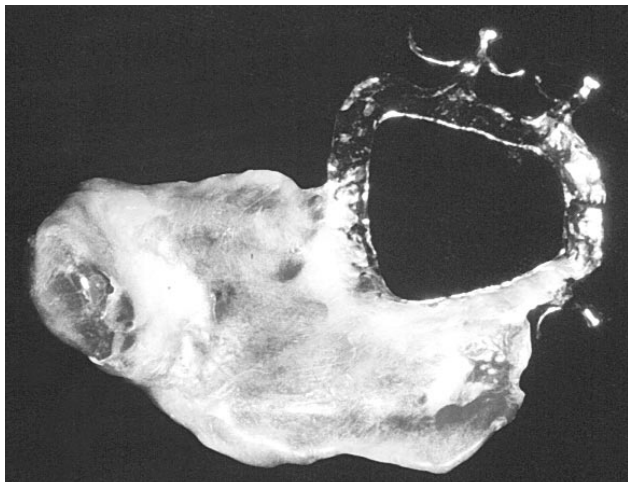


Fig. 2. Maxillary metal framework border molded with modeling plastic and then used to impress the defect with Iowa wax.

itate postinsertion adjustments by the visual detection of pressure spots through tissue blanching).

CONCLUSION

Disposable syringes are relatively inexpensive and readily available. Some clinicians also may prefer to enlarge the tip for better flow, although this has usually been found to be unnecessary. A traditional method

is to have a metal container attached to the hot water bath to temper the Iowa wax and to add this tempered wax with a brush. However, in an institutional or hospital environment, the proper accessories to the hot water bath may not be readily available and the syringe works well. Syringe delivery of the heated wax is also more rapid than the traditional brush technique.

This simple procedure allows routine capturing of all velopharyngeal or oral anatomy needed for proper treatment and requires less time to place the thermoplastic material to flow into the maxillary defect without additional chair time. The procedure is inexpensive, simple to use, and may also be applied to impression techniques for less complicated prostheses.

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