

Thermoplastic sheet as a spacer: a novel dual modified impression technique

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INTRODUCTION:

The posterior palatal seal (PPS) area plays a critical role in the retention of maxillary complete dentures and is often missed by the clinician.¹⁻² The PPS area is defined by the Glossary of Prosthodontic Terms³ - as "the soft tissue area limited posteriorly by the distal demarcation of the movable and non movable tissues of the soft palate and anteriorly by the junction of the hard and soft palates on which pressure, within physiologic limits, can be placed; this seal can be applied by a removable complete denture to aid in its retention." Various techniques have been proposed to record the PPS area⁴. However, the success of these techniques depends on the accurate location and transfer of the anatomic boundaries of the posterior palatal seal area to either the primary or definitive cast, which may be identified with a T-burnisher and indelible marking pencil. In 2006, Chang and Wright⁵ described a technique for the location of the PPS intraorally and accurate transfer to the maxillary complete denture cast.⁵ However, a drawback of this technique is the replication of the intraoral markings on the record base.

Spacer adaptation has an important role in the procedure for making the definitive impression for complete dentures. In addition to providing room for the impression material, the spacer also helps determine the amount of tissue displacement due to the pressure applied. A mucostatic impression records the oral mucosa in a state when external forces are not displacing it. A Mucocompressive impression records the tissues in their functional state. The selective pressure theory varies the pressure over the denture-bearing area depending on the displaceability of the supporting tissues. This article describes a modified technique for the transfer of the Posterior palatal seal area on the maxillary cast by using Thermoplastic sheet and Using it as a spacer for custom tray.

TECHNIQUE:

Extension of the tray, spacer, and tissue stops was marked on the primary cast. A resilient polyvinyl thermoplastic sheet (Easy-Vac Gasket; 3A Medes) 0.5mm in thickness was adapted over the primary cast by using a vacuum forming machine (Easy-Vac; 3A Medes) (FIG 1).



FIG 1: Thermoplastic spacer on primary cast .

The anterior vibrating line was located inside the oral cavity by instructing the patient to sat ‘‘AH’’ was short vigorous burst⁷ and was marked by using an indelible pencil. The posterior vibrating line on the soft palate

was located by instructing the patient to perform valsalva maneur^{7s} and was located by using an indelible pencil (FIG 2)

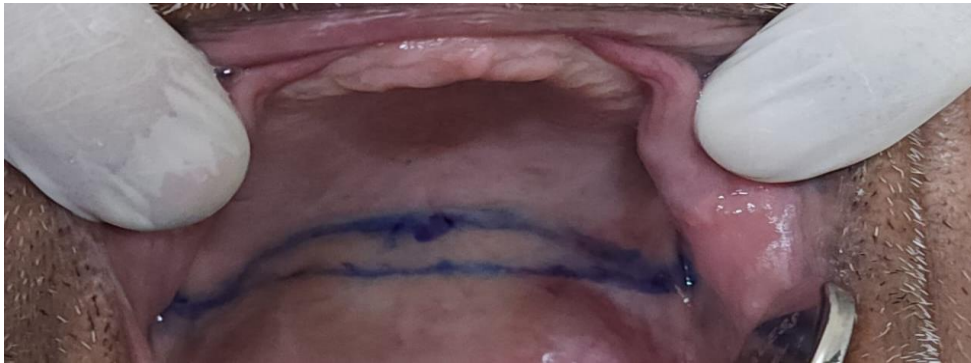


FIG 2: Anterior and Posterior vibrating line marked intraorally

Thermoplastic sheet template was placed intraorally and transfer the markings of the anterior and posterior vibrating line to it by using a black permanent marker (Permanent marker; CamliN) (FIG 2). The thermoplastic sheet template was cut to the marked posterior vibrating line of the PPS area with bard parker blade. The thermoplastic sheet template was placed on the primary cast and the posterior vibrating

line of the PPS area was drawn on the cast by using the indelible pencil. The thermoplastic sheet template was placed on the primary cast and draws the anterior vibrating line of the PPS area on the cast with the indelible pencil. The adapted sheet was cut to the desired spacer design and tissue stops as shown.(FIG 3)



FIG 3: Transferring the markings on thermoplastic sheet



FIG 4: Special tray

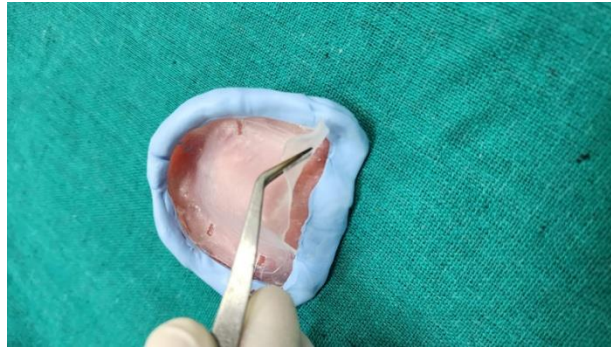


FIG 5: Removal of spacer

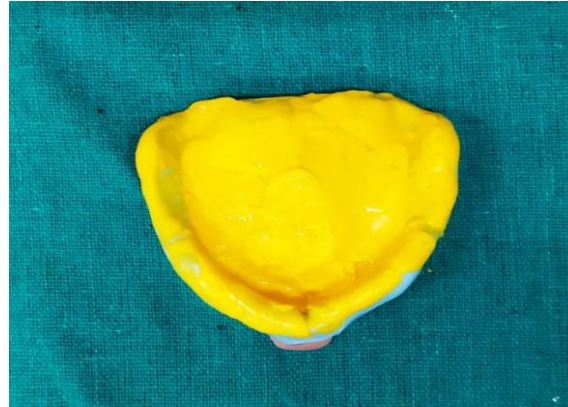


FIG 6: Final impression

The custom tray was fabricated using autopolymerizing poly (methyl methacrylate) (Dental Product of India) (Fig. 4). The tray was adjusted for border molding and the border molding was done by using polyvinyl siloxane impression material. After border molding the previously adapted spacer by was peeled off. Vent holes were created to avoid the buildup of hydrostatic pressure and to avoid tissue displacement.⁸ The definitive impression material (Aquasil Ultra, Monophase, Dentsply Caulk) was loaded and the definitive impression was made.

DISCUSSION:

This technique describes a modified technique for the transfer of the PPS area on the maxillary cast by using thermoplastic sheet and using it as a spacer for custom tray fabrication. No need to add spacer wax separately. This technique is for minimizing the complete denture construction time as it helps in fast and accurate location of PPS area and same sheet can also act as spacer for the final impression. The PPS plays a crucial role in the retention of the maxillary denture.⁶ The determination of the PPS should be the responsibility of the dentist and not the obligation of a laboratory technician.⁷ the procedure depicted develops a replica of the PPS in the thermoplastic sheet, which creates imprints on the cast. The technique described gives the clinician a method of creating and evaluating a PPS and transferring this likeness to the poured cast in a customized fashion and the same thermoplastic sheet will also act as a spacer for the final impression. This approach may be considered less arbitrary than traditional methods of carving the definitive cast. If

incorporated into the subsequent record base, PPS helps to promote stability and retention for the interocclusal records and the wax trial appointment steps.⁸

Conflict of interest: none

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