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Proper Placement Of Dual-Arch Impression Trays

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One of the most frequently encountered problems in making dual-arch impressions is placing the tray in an improper position, where it impinges on an anatomical structure and is distorted. This kind of distortion may affect the accuracy of the final impression and often can be recognized when the side wall of the tray shows through the impression material. This usually indicates that the side wall of the tray has been deflected by an anatomical structure that has pressed against the side of the tray, thereby displacing the impression material. Impressions like these should be rejected.

We have developed a technique for ensuring that the impression tray is placed in the proper position. We have used this technique in more than 2,000 impressions, with few cases involving possible distortion caused by deflection by an anatomical structure. We present this technique for use in any dual-arch impression protocol.

PROCEDURE

The dentist should select a dual-arch impression tray that passively fits the quadrant containing the prepared tooth and does not impinge on any anatomical structure. The tray is best fitted before the clinician administers local anesthetic so that the patient can feel the tray in place. A metal or plastic dual-arch tray of any design will suffice, as long as it fits properly.

With the tray in place, have the patient close down and ask him or her if closing down is comfortable and easy or if there are any interferences. Retract the cheek and note the intercuspation of the teeth. If the patient can comfortably close down all the way and no interferences are noted, proceed with the impression procedure.

Insert the empty tray into the quadrant containing the prepared tooth. Hold the tray on the maxillary arch and note the position of the posterior crossbar of the tray. It must be located posterior to the distal surface of the most posterior tooth in the arch and should not be in a position that will interfere with complete seating. Load the mandibular side of the tray directly into the mouth using a mixing tip on an impression cartridge (Figure 1). Have the patient close down and then open. The tray, loaded on the mandibular side, will remain on the mandibular arch.



Figure 1. Impression material is delivered into the mandibular side of the tray.

The dentist should then load the maxillary side of the tray, again directly into the patient's mouth using

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the same mixing tip and cartridge. Have the patient bite down all the way (Figure 2).



Figure 2. Impression material is delivered into the maxillary side of the tray.

CONCLUSION

This technique has the advantage of allowing the dentist to visually inspect the position of the crossbar and the walls of the tray in their final position. In other dual-arch impression protocols, when both sides of the tray are loaded, the dentist cannot adequately visualize the crossbar or the walls, because they are covered with impression material. The dentist may not be able to determine if the tray has been placed into the proper position until the impression protocol has been completed. With the technique described above, however, the dentist can abort the impression procedure as soon as he or she recognizes a problem in tray position.

This technique is fast and simple and can be incorporated into any dual-arch impression technique.

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