

secondary infection, and steroid medication to control inflammatory reaction.

- Set up regular recall appointments to monitor the patient's recovery and complete the endodontic therapy upon resolution of the acute symptoms.

Although these steps are useful in the management of NaOCl accidents, in rare instances healing is incomplete and the symptoms do not resolve completely. In one reported case, hyperesthesia and extreme cold sensitivity were present 4 years after the accident.² This might have been the result of irreversible and unpredictable nerve damage caused by the tissue-dissolving action of NaOCl. It might be possible to avoid this problem by attempting to eliminate NaOCl from the infiltrated tissue through a combination of dilution with saline and bone curettage immediately after occurrence of the incident. This might reduce the severe inflammatory reaction without further unpredictable nerve damage. The dilution method without bone curettage that is suggested by Hales and colleagues¹

might not be effective in this situation, since irrigating the root canal system with 0.9% NaCl has no effect on the NaOCl outside the tooth confinement.

References

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Question 4 How do I minimize the amount of occlusal adjustment necessary for a crown?

Clinical Problem

Local laboratories report that they receive a wide variety of impression trays, impression materials and bite registrations, all of which affect the final fit of a crown. In this article, the focus will be on bite registration and how it may affect the time spent altering the occlusal anatomy of crowns and bridgework to match the patient's occlusion.

Management of the Problem

When taking any bite registration it is imperative to match the accuracies of the materials you use, including those used for the final impression, the bite registration and the opposing model. Most bite registrations are inaccurate, and some of the problems are created by “bounce” in the material used, which may include wax, putty, silicone or polyvinyl siloxane. Most of us have been taught to take a final impression with a highly accurate impression material. Polyvinyl siloxane is the current choice of most clinicians. The polyvinyl siloxane allows for a second pour, which can be used to create an untouched die, so you can check the fit of the crown before delivery to the patient. Usually an alginate impression is taken of the opposing arch and is poured-up in the office in die stone. This is where a discrepancy can arise. A full-arch bite registration taken in a very accurate material such as polyvinyl siloxane is more accurate than the alginate stone model (Figs. 1 and 2). When we articulate the models (shown in Fig. 3 as

2 opposing alginate-produced master casts), the bite created by the models is obviously open, and the bite registration does not fit. Because the anterior teeth have little incisal anatomy, when the models are mounted, the inaccuracy in the bite registration allows them to shift, which creates a false bite relationship.

Perry¹ has written an excellent article on using polyvinyl siloxane impressions and stock trays for study models. He notes that polyvinyl impression material may be slightly more expensive than alginate, but points out that the benefits far outweigh the cost in terms of lost chair time.

There are 2 other ways around this problem. One method is to have the patient close the jaw in centric occlusion and obtain a lateral bite registration with polyvinyl siloxane. With the patient's jaws lightly closed, pull back the lips and cheek, inject the bite registration material into the site of the preparation, creating a small donut (Figs. 4 and 5). This small registration fits in the space between the prepared tooth and the opposing tooth or teeth, without affecting the interdigitation of the arches. Using a bite registration material of high durometer polyvinyl siloxane that is not brittle and that has no compression or bounce during articulation is critical.

Another method that works well for a single restoration in a patient with definitive cuspid rise is the dual-arch impression technique. A rigid metal tray must be used to prevent flexion and distortion. The impression material



Figure 1: Occlusal photograph of alginate-produced stone model.



Figure 2: Occlusal photograph of polyvinyl siloxane (detail).



Figure 3: Two alginate-produced stone models that are not seating on the bite registration.



Figure 4: Injection of bite registration material with the closed-bite technique.



Figure 5: Bite registration in place.



Figure 6: Rigid metal triple tray with matched impression materials.

used with this technique must be a specific inflexible polyvinyl siloxane, since it acts as part of the tray to contain the light body material, which is syringed around the final preparation (Fig. 6). With this method, the final impression of the preparation, the bite registration and the opposing model are all obtained at once, which minimizes the discrepancy between impression and bite registration.

It must be remembered that in all clinical impression-taking, the patient must bite passively; an aggressive clench can intrude the teeth 5–7 mm which can affect the fit. The same holds true when taking a full-arch impression. The full arch must be allowed to set passively with no seating pressure to minimize the chances of flex in the tray and the

material being forced to set under compression and possible flexion.

These clinical hints should help to minimize chair time in seating laboratory restorations. ♦



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Reference

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