

# Simple intra-oral technique for prevention of breakage of teeth of a cast during its retrieval from final impression

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One of the commonest problems experienced by a dentist is the broken teeth on the master cast, which occurs during retrieval from the impression, especially when the anterior teeth have gingival recession and open interdental spaces. This article describes a technique of preventing the breakage of cast, by adapting wax on non-critical surfaces intra-orally and thus, reinforcing the critical surfaces. This technique is simple and requires minimal chair side time.

**Key words:** Cast strengthening

Safe retrieval of a cast removable partial denture master cast from an impression, without breaking the teeth, is a challenging task. This problem is even magnified when the teeth have extensive bone loss and open interdental spaces. Variation in position of reattached stone tooth may not lie within the limit of physiologic tooth movement, even if reattached carefully. Therefore, ideally the impression procedure should be repeated and a new cast be retrieved.<sup>[1]</sup> Various techniques like use of die pins, bobby pins,<sup>[2,3]</sup> modifying the impression before pouring cast, and so on<sup>[2,4]</sup> have already been mentioned in the literature. However, these techniques are complicated and involve manipulation of the impression, which might lead to inaccuracies in the impression and finally in the master cast.

Identification of critical and non-critical surfaces can be helpful to prevent cast breakage.<sup>[4]</sup> A critical surface is the surface of a tooth or soft tissue that is critical in diagnosis, fabrication or wearing of the prosthesis. A non-critical surface is one that will not be used in the diagnosis or fabrication of the prosthesis.

This article describes a simple technique, which involves alteration of non-critical areas intra-orally, thereby strengthening the cast.

## TECHNIQUE

1. Identify critical and non-critical surfaces by analyzing the diagnostic cast.

2. Dry the teeth with air syringe and isolate the area using cotton rolls [Figure 1].
3. Take carding wax (soft tooth carding wax, Kemdent) and adapt it on to the non-critical surfaces of the teeth (interdental spaces, facial surfaces, etc.) [Figure 2].
4. Make the impression with the desired material.
5. Impression is observed for any remnants of wax. If present, should be removed carefully with sharp instrument.
6. Wax in the patient's mouth can also be easily removed by any sharp instrument [Figure 3].
7. Cast is poured using the desired material.
8. Final cast is analyzed for any imperfections. The resulting master cast has an increased bulk on the surfaces that are non-critical while the critical surfaces have been preserved and reinforced [Figures 4 and 5].

## DISCUSSION

Breakage of teeth on the master cast during retrieval of cast from the impression can be due to poor removal technique or improper clinical or technical use of dental materials.<sup>[5,6]</sup> Even if these factors are taken care of, in situations where anterior teeth have recession and open interdental spaces, the chances of breakage of teeth are very high. A technique of using commonly and easily available carding wax for increasing the bulk of teeth and thus preventing breakage of teeth in the



**Figure 1:** Teeth dried and isolated



**Figure 4:** Increased bulk on the non-critical surfaces



**Figure 2:** Carding wax adapted on to the non-critical surfaces of the teeth



**Figure 5:** Preserved and reinforced critical surfaces



**Figure 3:** Wax in the patients' mouth removed by explorer

master cast has been discussed. Technique is simple and consumes minimal chair side time.

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