



Composite onlays constructed with semidirect technique in mounted silicone casts: Case report

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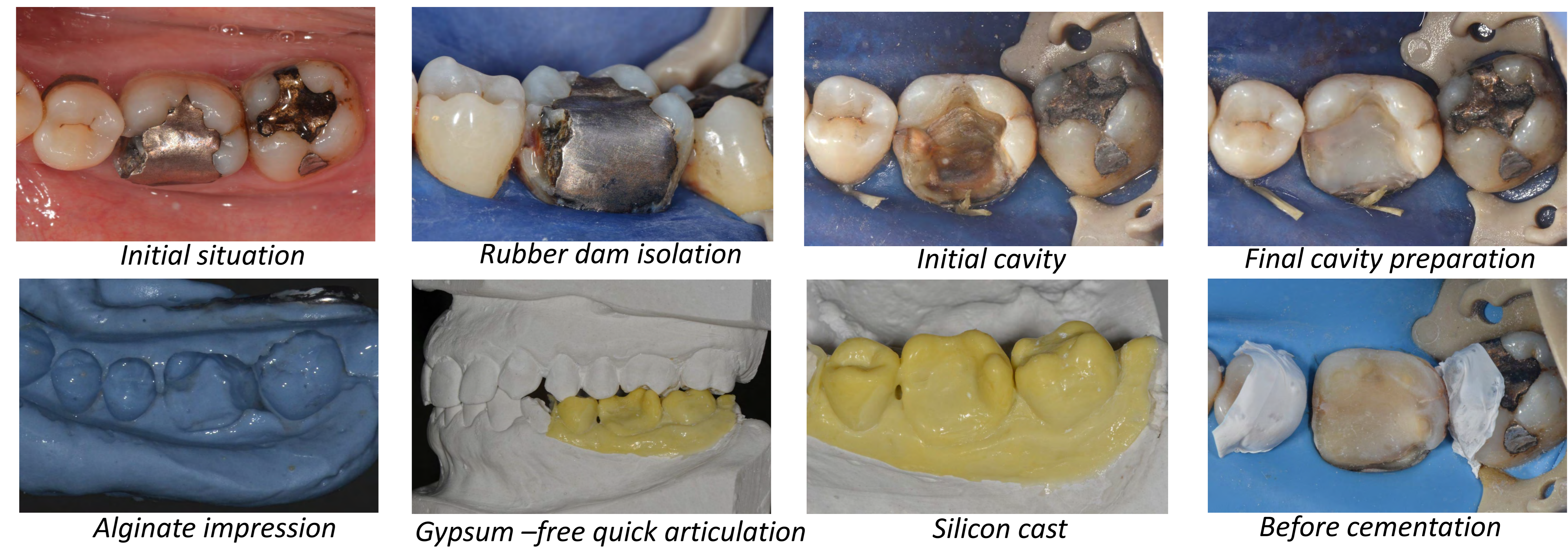
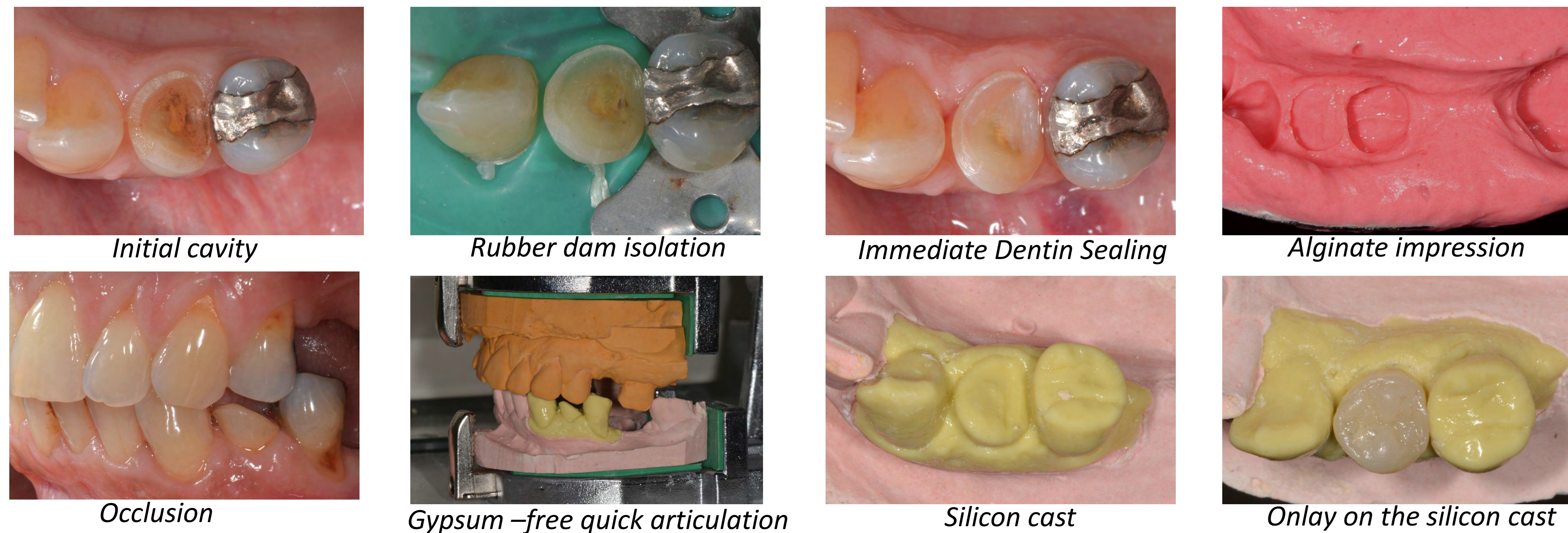
Introduction: To overcome the disadvantages of the direct application of composite resin for extended posterior restorations, two techniques have been developed: the indirect and the semidirect technique. The indirect technique requires two appointments and a laboratory involvement. In contrast, in the semidirect technique the onlay can be prepared chairside in a single visit either conventionally or by the use of computer-aided design/computer-aided manufacturing systems (CAD/CAM).

Case report: A modified procedure for the conventional semidirect technique is described here. First the cavity is formed and immediate dentin sealing (IDS) applied. Then alginate impressions of the maxilla and mandible are taken. The impression with the prepared tooth is poured with **special very rigid** addition type die silicon material (Mach-2, Parkell, USA) in the prepared tooth area including two adjacent teeth. The rest of the impression, as well as the impression of the opposite arch are poured with quick setting mounting gypsum that sets in 10 minutes. In the previously described semidirect technique the onlay was constructed without articulation. Our modification to the previously described semidirect technique involves the quick articulation on a special gypsum-free articulator (MagicArt-2, Alphadent Co, Seoul, Korea). **The major advantage of the modified semidirect technique is that there is no guesswork on the occlusion of the fabricated onlay.** The occlusion is first checked on the articulator and then the onlay is bonded into the patient's mouth, followed by the final check of the occlusion and polishing of the restoration. In this stage usually there is no need for occlusal adjustment, as shown on case 2.

Conclusion: The use of this technique combines the advantages of the direct and the indirect approach with full control of form, shade and occlusion.

CASE 1: Rehabilitation of a mandibular first premolar (#34) with extensive loss of tooth structure.

CASE 2: Replacement of a fractured extensive amalgam restoration with secondary caries in a mandibular first molar (#36).



Onlay on the mouth

➤ **References:**

- Donly, K.J. Composite resin inlays: a single appointment technique. *Am. J. Dent.* 1990; 3:181.184.
- Spreafico, R.C. Direct and semi-direct posterior composite restorations. *Pract.Periodont, Aesthet. Dent.* 1996; 8:703.712.



Onlay on the mouth (with isolation)



Onlay on the mouth. **No major occlusal adjustment needed.**