

## CASE REPORT

# RESTORATION OF PRIMARY ANTERIOR TEETH USING A NOVEL TEMPLATE METHOD: A CASE SERIES

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### ABSTRACT

Restoration of primary maxillary incisors, severely destroyed by trauma or caries is a commonly faced problem in a Pediatric dental clinic. Most cases are observed in children with early childhood caries. In the past, the only option would have been to extract the affected teeth and replace them with prosthetic substitutes. Now these teeth are restored using various crowns e.g. stainless steel crowns, strip crowns, polycarboxylate crowns, resin veneered crowns etc. However, cost becomes a main reason why these crowns are not being used more commonly. A newer method using PVS putty as template to restore these crowns is presented in this case series.

**Keywords:** Template method, Early childhood caries, Composite restoration, anterior aesthetic restoration.

### INTRODUCTION:

Over the years, there have been numerous articles published regarding the restoration of primary anterior teeth. They have presented various novel techniques of restoring carious primary incisors. These techniques have been demonstrated in various case reports, and the procedures have been illustrated in a step-by-step diagrammatic fashion. Class III composite restorations have long been utilized to restore mild to moderate carious lesions in primary anterior teeth.<sup>1</sup> various techniques have been put forward to restore primary anterior teeth such as full coverage restoration e.g. stainless steel crowns<sup>2</sup>, facial cut-out stainless steel crown<sup>3</sup>, resin veneered stainless steel crowns<sup>4</sup>, polycarboxylate crowns<sup>5</sup>, strip crowns<sup>6</sup>, artglass crowns<sup>7</sup>, and more recently preformed zirconia crowns have come in market. But every technique has its advantages and disadvantage, e.g. poor esthetic is a drawback of stainless steel crown, patient co-operation and more time is required for facial cut-out stainless steel crown, and

cost effectiveness in other techniques especially in Indian scenario. To overcome these problems a newer novel technique of primary teeth restoration that is template method, is described here.

**Case 1:** 5 year old came to the department with chief complaint of decayed front teeth (Figure 1). All the teeth were symptomless. Patient's parents were unwilling for any costly treatment. So it was decided to restore teeth using template method. In the first appointment alginate impression was taken and cast was poured in dental stone. Then teeth were built using sticky wax on the cast to stimulate the normal anatomy of primary teeth (Figure 2). Then impression of these prepared teeth was made using polyvinyl silicon impression material. Excess material was cut off so that material was on the whole of palatal aspect and covering incisal third of the labial surface. On the second appointment, all the caries was removed, teeth were acid etch and dentin bonding agent was applied then with the help of template in place teeth were restored using composite. (Figure 3 and 4)



**Figure 1:** Preoperative Picture



**Figure 2:** Cast showing teeth prepared using sticky wax and putty impression made



**Figure 3:** Template in position



**Figure 4:** Teeth restored

**CASE 2:** 5 years and 6 months old came to the department with the chief complaint of pain in upper front teeth. Clinical and radiographic examination revealed multiple carious teeth with pulpal

involvement in teeth 54 and 62, for which pulp therapy was done. In tooth 62 stainless steel post was inserted then teeth were restored using same technique.



**Figure 5:** Pre-operative



**Figure 6:** Caries removed and ss post



**Figure 7:** Teeth prepared & putty impression



**Figure 8:** Post-operative

**DISCUSSION:** Management of a young patient with early childhood caries provides great challenge to the clinicians both from a functional and an esthetic perspective. Treatment objectives may vary depending on the age, socio-economic status of the patient and intraoral status at the time of treatment planning. There are various treatment modalities for restoration of carious teeth. Common restorative treatments such as strip crowns, resin veneered crowns, polycarboxylate crowns etc have been used but cost is the main factor in Indian scenario, which prevents use of these treatment modalities on a more regular basis. Considering the age of the patient in the presented cases where the carious teeth would exfoliate in 2 years time or so, an esthetic direct composite restoration using template method, was planned. Various techniques were considered to restore the tooth with composite restoration which includes strip crowns, polycarboxylate crowns, zirconia crowns etc. Even though usage of preformed crowns gave good results, there are certain drawbacks like aesthetics in case of ss crowns and cost and patient cooperation in case of other crowns. Thus in the present case a novel method which includes both direct and indirect method of restoring was designed by using Polyvinyl Siloxane (PVS) Rubber base impression material (putty) as template. This method is simple, quick and economic when compared to other invasive procedures. The usage of the PVS template allowed incremental layering of the composite material; optimal depth of cure; accurate reproducibility of the anatomic contours and minimal polishing and finishing procedures<sup>8-10</sup>. The patient was reviewed after six months for any minimal adjustments to the restoration. However, there are certain concerns regarding the interference of the constituents of PVS with the polymerization of the composite material.

Long-term success of anterior restorations for primary teeth is not the mere means of removing carious lesions and restoring with esthetic materials. Maintenance of these restorations by the patients and their parents is critical to prevent failure.

Caries in the primary anterior teeth are largely due to early childhood caries (ECC). Efforts to prevent caries in this population by educating parents and caregivers regarding the cariogenicity of nocturnal and at will feeding practices have experienced limited success. Education alone appears to be inadequate. The parents must be motivated to alter their feeding behavior patterns.

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