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Strip Crowns Technique for Aesthetic Rehabilitation of Primary Anterior Teeth: Case Report

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Abstract: ***Early childhood caries is a condition that affects millions of children worldwide. This issue must be treated in early childhood. The current study describes a case of aesthetic-functional rehabilitation using laboratory-made strip crows and composite in a 3-year-old child with lesions of early childhood caries. Composite resin restorations were placed on all upper anterior teeth to restore aesthetics and function, providing the kid and her family with a higher quality of life. The use of strip crowns in the manufacture of composite resin crowns resulted in a faster clinical time, a superior cosmetic outcome, and the rehabilitation of the patient's smile and personality.***
Keywords: Strip Crown, Rehabilitation, Early Childhood Caries.

I. INTRODUCTION

Early childhood caries (ECC) is characterized by, one or more missing, decaying, or treated tooth surfaces on any primary tooth of children aged less than 71 months.[1] The most effective aesthetic materials and procedures for replacing deciduous teeth are still unclear, making cosmetic restoration of primary teeth in children a constant challenge for paediatric and general dentists. A variety of cosmetic treatment options for the management of dental caries and damage in the primary teeth have been established with the progress of dental materials and procedures in conservative dentistry.

Stainless steel crowns are the restoration of choice in severely damaged primary incisors with insufficient enamel remaining for bonding, sub-gingival cavities, and uncontrolled moisture and bleeding. Many clinical trials, notably Messer et al. (1988) and Einwag et al. (1996), have shown the superiority of stainless steel crowns in recovering primary molars with multi-surface involvement over the years. However, no documented research on the use of stainless steel crowns for primary anterior teeth have been published. Despite the dearth of evidence, stainless steel crowns appear to be the most long-lasting and technique-friendly restorations for decaying primary anterior teeth. The most popular type of preformed aesthetic crowns for primary incisors is the composite resin strip crown. Webber and colleagues originally created this form of crown in 1979.[2]

Composite resin strip crowns (SC) were being used to restore carious primary teeth for over two decades. Despite their lengthy history of use, there is a paucity of information on the therapeutic success of these crowns. The SC is the most attractive of all the restorations available for treating carious primary teeth. SC also requires the highest level of technical perfection.[3]

In paediatric dentistry, reducing clinical time is critical, especially in more difficult cases that demand more effort and limited patient engagement. Thus, in cases of aesthetic reconstructions for the restoration of highly compromised dental crowns, the use of strip crowns is an appealing choice because it allows coverage of the majority of the remaining structure, promotes a satisfactory aesthetic result, requires little operative time, is simple to execute, and is cost - effective.[4]

This case report describes how composite resin strip crowns would be used to restore an aesthetic and conservative maxillary anterior in a patient.

II. CASE REPORT

A 3 year old patient with class III and class IV caries i.r.t. 51, 52, 61 had reported to the Department Of Pediatric And Preventive Dentistry. The chief complaint from the patient’s parent was of decayed front teeth since 2 month. On clinical and radio-graphical examination caries were involving enamel and dentin of maxillary left and right central incisors and right lateral incisor (figure 1). The involved teeth had no sign and symptoms of pain.



Fig 1: Clinical appearance of teeth 51, 52, 61 (Pre-operative)

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Treatment plan had been explained to the parent and after taking parent consent, treatment procedure were proceeded.
Before teeth preparation strip crowns were selected by measuring the mesio-distal dimensions of the available space. All the carious portion were removed using small round bur, only proximal slices are made for retention of composite resin. (figure 2).



Fig 2: Selected strip-crowns

Crowns were adjusted according to the height of teeth. The crown was pierced with a sharp explorer at the mesial or distal incisal angle to create a core vent for the escape of any air bubbles entrapped in the crown. Soon after, the strip crowns were filled with Filtek Z350 XT WD composite resin (3M ESPE) in colour A1 and taken into position. After extravasation of the surplus material, the excesses of the cervical region were removed with an exploratory probe, followed by photo-activation for 40 seconds. To remove the crown form a sharp, hand-held instrument discoid carver were used to peel off the strip crown shell. Occlusal adjustment, finishing with a FG1190 FF miller (KG Sorensen) and polishing of the restorations with Shofu Super Snap discs (3M ESPE) were performed, respecting the sequence from highest to lowest granulation. The final clinical aspect, soon after the completion of the restorations can be visualized in figure 3. Patients 2 month follow up in figure 4



Fig: 3, Clinical appearance immediately after restorations



Fig:4, Follow up 2 months after the restorations

III. DISCUSSION

Deciduous teeth are important for phonetics, feeding, aesthetics, and keeping permanent teeth in place.[5] Thus, pediatric dentistry should invest efforts to keep these dental elements healthy until the time of their exfoliation. When caries lesion is installed, problems such as pain, oedema, irritation, poor nutrition, among others, can cause anguish and discomfort in the child, affecting their behaviour, appearance, chewing capacity and phonation among others.[5,6] Even after all of the oral health preventative strategies in order, caries disease remains widespread in the preschool population, particularly among children from low-income backgrounds, necessitating intervention by the dentist and public health programmes.[7,8]

In the presented case report the patient's parent was more concerned about the aesthetic of his child. Thus in the view of long time for the exfoliation of 51,52,61 the given treatment plan were considered.

Bullying, according to Olweus et al., 2011, is contemplated an anti-social event that violates the rights of another person caused by repeated negative actions. These can be classified as direct (hitting, kicking, threatening and insulting) or indirect (gossip, spread of rumors and exclusion).[9] Bullying has increased the desire for cosmetic dental care among youngsters and parents. According to Al-Bitar et al. 2013, the three dentofacial traits most typically stated by bullies are tooth spacing, missing teeth, and the form and colour of the upper front teeth.[10]

Thus, it was chosen to employ composite resin since it provides outstanding aesthetic effects as well as high adherence through micromechanical bonding and the development of resinous tags by tooth bevelling. Composite resin is currently the most often utilised material in direct aesthetic restorations because it provides better cosmetic effects, is extremely adhesive, and is inexpensive. Another alternative for cosmetic rehabilitation is the use of zirconia crowns, which are becoming more frequent in young patients. However, the presented instance exhibits some rhizolysis, and the usage of this treatment is inconvenient owing to the expenditures involved.[11]

Although this procedure necessitates a prior laboratory phase, it saves significant clinical time, which is critical in infant care. Strip crowns are useful for repairing severely damaged dental crowns, deformed teeth, hypoplasia, and shattered teeth.[12] Al-Eheideb and Herman (2003) reported a 70% success rate for 23 composite resin strip crowns that were observed for 6 to 27 months. Overall, retention rates for composite resin strip crowns range from 49% to 100%, with follow-up durations extending from 6 months to 27 months.[13]

For this patient, the treatment of choice was the preparation of composite resin crowns with the aid of strip crowns, restoring the function and mainly the aesthetics, which resulted in the satisfaction of the child and the relative.

IV. CONSENT

Informed consent was obtained from the guardians of patient.

V. CONCLUSION

The bonded resin composite strip crown is the most aesthetically pleasing of all the restorations accessible to clinicians for the treatment of severely decaying primary incisors. It was simple to carry out and instantly helped the youngster. Parental satisfaction with bonded resin composite strip crowns for primary incisors with extensive or multi-surface cavities was also significant.

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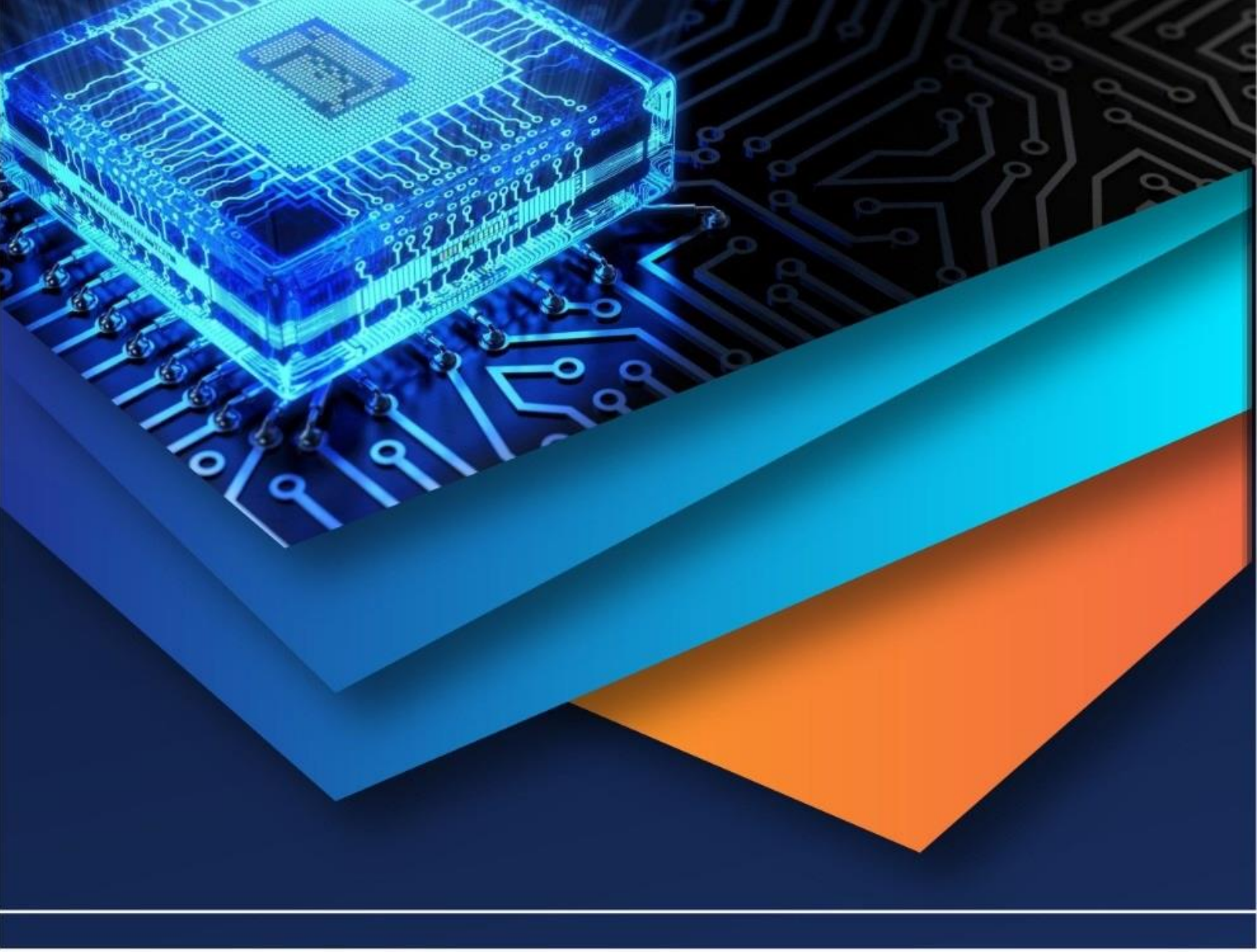
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