

Case Report

Composite buttons for relapsed spaces, single-tooth crossbite, and midline diastema

ABSTRACT

Maintaining the achieved occlusion following the orthodontic treatment is the most difficult task of the entire treatment process. Relapses are common in noncompliant patients and in some cases despite the patient following the protocol. There are various factors for the relapse after the orthodontic treatment. The relapsed malocclusions can be corrected by simple procedures such as composite buttons. They are economical and esthetic considering the relapsed space. A 27-year-old female patient presented to our orthodontic department with the chief complaint of mild anterior spacing with midline diastema and anterior crossbite in relation to 21, after treatment with fixed appliance therapy. The patient was treated with composite buttons, and satisfactory results were obtained. Composite buttons are an alternate treatment line for mild relapsed cases in patients who are not willing to undergo the fixed appliance therapy again.

Keywords: Composite button, orthodontics, relapse

INTRODUCTION

Following the orthodontic treatment, some patients present with relapse. Maintaining the result after the completion of treatment is the most difficult task of the entire treatment process. Stability of the upper anteriors is of considerable importance^[1,2] from the patient's point of view. It is the biggest challenge an orthodontist has to face after the treatment is over. Relapse can be seen in both patients who have followed the retention protocols and those who have not. Relapse has been the subject of many studies.^[3-5]

The reasons for relapse can be varied such as periodontal force,^[6] patient's growth pattern continuing after the treatment, type of treatment performed, type of the retainer^[7] and the duration of treatment, third molar eruption after treatment, muscular imbalance after the treatment, and noncompliance in retention protocol.

The treatment options are redoing the fixed appliance, clear aligner, or the wrap around appliance. However, with unhappy patients where cost factor is an issue, composite buttons^[8-10]

can be considered. It is a simple and nonexpensive but an effective treatment modality.

CASE REPORT

A 27-year-old female patient underwent fixed orthodontic treatment for generalized spacing and anterior crossbite. She presented to our department with relapsed anterior crossbite in relation to 21 and midline diastema, being noncompliant with retainer usage. She was offered normal correction treatments. She was keen for correction [Figures 1 and 2], but financially she was constrained. Hence, composite buttons were chosen as they were esthetically appealing and cost effective.

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Fabrication of composite button

After selecting the suitable case and getting the informed consent, six elastic separators were placed on a mixing pad. A cut was made on each separator with scalpel so that it can be removed easily after curing it on the teeth.^[6] Then, flowable composite was used to fill each separator and cured for 10 s [Figures 3 and 4].

Tooth preparation

The labial and palatal surfaces of the anterior teeth to be treated were properly prophylaxed, etched with 37%

phosphoric acid for 10–15 s, and dried. Then, bonding agent was applied and cured. A thin layer of flowable composite was applied on the prepared tooth surface. The cured composite buttons were placed with gentle pressure, and the excess composite was removed and cured for 10 s on each side. After this, the separator was removed easily due to the precut made on it [Figure 5]. The composite button was placed palatally on 21 for correcting the crossbite and cured [Figure 6].



Figure 1: Preoperative – Midline diastema in relation to 21



Figure 2: Preoperative – Crossbite in relation to 21



Figure 3: Fabrication of composite buttons



Figure 4: Curing of composite buttons



Figure 5: Bonded composite buttons



Figure 6: Composite button placed lingually (palatal)



Figure 7: Placement of E chain



Figure 8: Bite raised



Figure 9: Labial bow for lower arch



Figure 10: Follow-up after 5 weeks



Figure 11: Corrected diastema frontal view



Figure 12: Corrected diastema lateral view

The E-chain was placed on the space occupied by the separator, placed labially from 13 to 11 and then placed palatally on 21 and then back on the labial side from 22 to 23. The lower arch was not bonded [Figure 7]. The bite was increased to relieve the crossbite [Figure 8]. A Hawleys appliance was given for the lower arch to aid in the correction of crossbite [Figure 9].

The patient was reviewed in 2 weeks. E-chain was changed. The midline diastema and the crossbite were corrected by

the 5th week [Figures 10-14]. Prefabricated invisalign buttons can be used as alternatives to composite buttons. Cases with mild-to-moderate anterior spacing may be managed by the same method.

At 4 weeks, the space closed significantly. The crossbite and the midline diastema were also corrected in the subsequent visits.



Figure 13: Left occlusal view



Figure 14: Fixed lingual retainer

DISCUSSION

Orthodontists should be prepared to see some degree of relapse in some of the patients who were noncompliant to the retention protocol or others with the before mentioned factors for relapse. Treatment options such as fixed appliance therapy, clear aligner, and removable retainers are not accepted by some patients who are reluctant to undergo the treatment again. Hence, a simple technique to close relapse of anterior spacing in pretreated cases can be done with this composite button technique. This simple, esthetic, and low-cost procedure can effectively close the relapse of anterior spacing in 1–2 months. Prefabricated invisible buttons can also be used instead of the composite buttons.

CONCLUSION

In this modern era of advanced orthodontic treatments, this simple and cost-effective method can be considered for relapsed cases. This might help patients who are hesitant to start the treatment again with fixed appliance therapy.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will

not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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