

Case Report

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Application of Cosmetic Contouring in Orthodontic Esthetic Dentistry- A Case Report

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Abstract Cosmetic contouring is a quick and relatively straight forward process involving minor reshaping of chipped, fractured or overcrowded teeth. It is a subtle procedure, involving minimal discomfort, which allows the correction of minor flaws of the teeth to create a clean looking, uniform and straighter smile by simply 'smoothing' the surface of your teeth. A case is reported to high lighten the usefulness of cosmetic contouring in conjunction to orthodontic esthetic therapy by using the Roth system 018 slot size brackets and cosmetic contouring with fissure bur which resulted in painless, cost effective treatment with pleasing smile and improved dento-gingival health.

Keywords *Esthetics, Tooth Contouring, Orthodontic Treatment*

1. Introduction

"Esthetics" is still believed to be a synonymous for orthodontics and defined as appreciative of, responsive to or zealous about the beautiful; having a sense of beauty or fine culture [3] (Ronald E Goldstein). Orthodontic treatment is mainly done for esthetic purpose and that's why orthodontic treatment is purely an esthetic procedure. Anterior teeth play a major role in esthetics and beauty of a smile [1]. The shape and alignment of anterior teeth is of great importance. Tooth contouring is a procedure to correct crooked teeth, chipped teeth, cracked teeth or even overlapping teeth effectively. Aesthetic dental contouring is commonly used to alter the length, shape or position of your teeth. Contouring teeth may also help correct small problems with bite [5]. Esthetic contouring of smile line is ideal for candidates with normal healthy teeth, but who want subtle changes to their smile. People having chipped tooth, worn edges, or shallow pits or grooves in the tooth enamel that stand in the way of having a perfect smile [2]. An ideal candidate would have minor imperfections in their teeth such as small chips, minor unevenness, slight overlaps, shallowly pitted surfaces, or worn biting areas in their teeth. If you suffer from one or more of these problems - even to the extent of a minor fracture or overlap - they all can be fixed using a procedure known as Esthetic Contouring of Smile Line. The goal of tooth contouring and reshaping is to change the size or shape of the teeth so that slightly damaged or out of proportion teeth are brought back into alignment with the rest. In essence, as a cosmetic procedure, it is most often performed on the upper central, lateral, and canine teeth. Beyond

the outward benefits, there are often oral health gains too, as smoothing the teeth and repairing overlaps can make them easier to clean, reducing the risk of affecting the cavities and gum disease [3, 5, 7].

2. Objective

The goal of the case report is to high lighten the usefulness of cosmetic contouring in conjunction with orthodontic treatment.

3. Case Report

A 24 year female patient reported after completion of orthodontic treatment. A detailed history elicited the fact that she was not happy with the shape and length of teeth mostly left central incisor and the buccally placed canines with crowded teeth featuring overlapping large central incisors (Figure 1 and Figure 2). She wanted to improve her smile which was marred by two protruding, wide central incisors. She was advised a combination treatment of periodontal surgery and cosmetic contouring with orthodontic treatment to change the shape of her teeth. Intra-oral X-rays were taken to evaluate the size and location of the pulp of each tooth to ensure that there's enough bone between the teeth to support them. The patient refused and was not willing to take the periodontal therapy due to the surgical aspect and mostly the apprehension of needle prick as it would involve injection and surgery. Cosmetic contouring was planned and was done by using tapered fissure diamond bur followed by smoothing of surface using pumice paste and rubber cup. All the anatomical landmarks were taken into consideration. The mesio - incisal edge kept at a right angle and disto - incisal edge rounded. The buccally placed canines were placed back in occlusion by using straight wire technique (Roth system 018 slot size) (Figure 3). After the patient was put on retainer and asked for frequent visits.

Pre-treatment Photographs



Figure 1: (Front View)



Figure 2: (Occlusal View)



Figure 3: (Roth system 018 slot)

4. Results

The patient was so pleased with the result that she no longer desired to have her teeth crowned. Most patients who want anterior esthetic improvement will usually ask to have their teeth crowned, laminated, or bonded. However, cosmetic contouring should always be considered as an alternative ideal or compromise orthodontic solution (Figure 4 and Figure 5).

Post-treatment Photographs



Figure 4: Post-treatment
(Front View)



Figure 5: Post-treatment
(Side View)

5. Discussion

Cosmetic contouring is a quick and relatively straight forward process involving minor reshaping of chipped, fractured or overcrowded teeth. It is a subtle procedure, involving minimal discomfort, which allows the correction of minor flaws of the teeth to create a clean looking, uniform and straighter smile by simply 'smoothing' the surface of your teeth. A case is reported to high lighten the usefulness of cosmetic contouring in conjunction to orthodontic esthetic therapy [3].

Before undertaking cosmetic contouring into consideration it is advisable to consider,

- 1) Thickness of the enamel
- 2) Shape and location of pulp canals
- 3) Length of the tooth
- 4) Length and position of the adjacent tooth [2].

The first two factors are important for the future health of the tooth.

Extensive contouring: one important point in reshaping is to make sure that the incisal embrasure between the teeth is reopened to at least 0.25 to 0.50 mm length. This is accomplished by using an extra-thin needle shaped diamond or abrasive disc. This helps achieve an illusion of straightness. In the labi gingival area, the extension of an overlapping tooth is de-emphasized by blending the shape into the newly created contour. Care must be taken in reducing the extended portion (circle) of an overlapping tooth. One of the most common pitfalls in reshaping is to thin the tooth so much that the dentin shows through. If that happens, the tooth may appear discolored leading to susceptibility to future decay and sensitivity. The latter two factors are partially in control of an orthodontist and adjustment in bracket positioning can easily alter these as per requirement [4]. An important consideration is the amount of tooth structure that will show when the patient speaks and smiles. This can be determined by having the patient repeat words that emphasize different lip positions. Also ask the patient to smile slightly and then to smile as widely as possible. The long axis of each of the teeth must be determined, as it will be used to correct the overlapping tooth. Usually the long axes of the teeth (a) will vary from tooth – to - tooth when the lower anterior teeth are crowded. Therefore, choose a parallel line (b) and do all of the mesial and distal reshaping with this line as the guide. Then reopen the incisal embrasure [1, 6, 7].

6. Conclusion

In conclusion, minor tooth movements and cosmetic tooth contouring (tooth reshaping) are affordable alternatives to small irregular teeth which can spoil the smile line.

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