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Case Report

# AESTHETIC DENTISTRY

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## ABSTRACT:

Aesthetic dentistry can be defined as being able to give the sequence of natural teeth. Thanks to advances in technology and science, it is possible to treat and heal a patient's smile and appearance with conservative methods both in terms of health and in terms of function. A good aesthetic dentist is capable of observing natural teeth very well and clinically reflecting his observations to dental operations. In this case report has been told the esthetic rehabilitation of anterior region belonging to the patients who felt uncomfortable about the aesthetic appearance of teeth using direct composite technique by keeping their economic and social factors in mind.

The teeth were restored using composite resin with phosphoric acid gel and a bonding agent of % 37and layering technique without any preparation on the surface of the enamel of the teeth. Finally, the restoration was polished with surface finishing discs. Patients were evaluated after 9 months and not any breakage or discoloration was observed aesthetically.

**Key words**: Aesthetic, Fiber Post, Enamel Hypoplasia, Marginal Leakage, Restorations Success.

## INTRODUCTION:

According to Pilkinton, in 1936, the aesthetic dentistry is to imitate nature or keep science in harmony with our own business by making our own art unobtrusive and unnoticed. [1]

In humans, one of the most important communication tools and personal charm that determines the main components of smile is to have teeth and lips of aesthetic and healty appearance[2].

The adhesive showing the continued development thanks to dentistry technology in the last 25 years can resolve aesthetic concerns both economically and in a simple manner with conservative dentistry [3].

Teeth are not composed of a single color, they are polychromatic. There are no improved quantitative analysis methods to determine the color of the teeth in the clinic. However, when determining the color of teeth, certain factors should be considered [4]. These are crown enamel color, enamel transparency which varies depending on the degree of calcification, the thickness of the enamel and dentin shade.

There are some considerations to be aware when restore the teeth. In restored

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tooth, color, size, surface structure, its relationship with the adjacent teeth, its relationship with the opposing teeth when the mouth is closed, compliance with environmental teeth, gingival contours, laugh lines must be carefully examined and treatment must be performed by such considerations.

## CASE DETAIL:

A 30-year-old female patient and an 18-year-old female patient consulted Inonu University, Faculty of Dentistry, Department of Restorative Dentistry because of dissatisfaction with the aesthetic appearance of teeth were examined intraorally. From the anamnesis taken from the patients, it was determined that both of the patients didn't have any systemic disease. 30-year-old female patient in the clinical examination was determined to have an almost missing tooth crown due to a decay in upper left lateral tooth. (Figure 1) In 18-year-old patient's clinic examination, wide spots in the vestibular surface of the teeth, especially to be more apperant in upper front teeth, were observed. (Figure 2) The patient was diagnosed with enamel hypoplasia. After evaluating the expectations of both patients, also taking their economic conditions into consideration, direct composite restoration which is both minimally invasive and is able to meet aesthetic expectations was decided to be applied.

For two patients, after 35% phosphoric acid gel (Scotchbond Multi-Purpose Etchant; ESPE, USA) was applied to all enamel surfaces for 30 seconds, it was washed with water sprey for 15 seconds and then was dried by squeezing mild weather. The prepared binding agent (CLEARFIL SE Bond Kuraray, Japan) was applied to all enamel surfaces and was polymerized by light for ten seconds. The previously selected colors were respectively applied in layers and each layer was polymerized by light for 40 seconds. Finally, finishing and polishing process was completed using disc-type sanders (Sof-Lex, 3M ESPE, USA) and composite polishers (Flexi-Snap KIT, EDENTA, Switzerland) in series .The treatment of patients have met all aesthetic, functional and economic expectations of the patient**.** (Figure 1 and 2) The patient was given oral hygiene education required to comply.

## DISCUSSION:

Different restorative materials are used in the treatment of aesthetic restorations. The features of dental restorative materials used when restoring should be paid attention. Composites which can be condensed had better be placed with clean equipment at a time and then anatomic form can be applied. This reduces the last finishing and correction process. However, due to containing larger filler particles compared to the hybrid composite, the risk of a rough surface after finishing and polishing is quite high [5].

Composites are mechanically connected to the micro-cavities formed through etching and bonding processes; but as for the hydroxy apatite crystalscontained in

the structure of the tooth, composites are chemically linked to them [6].

The restorative materials inside mouth should not be affected negatively from temperature and pH changes and different parameters such as concentration of force; on the contrary, it must be able to regain lost function, phonation and aesthetics [7,8].

The success and long-lasting of restorations depend on light source and restorative properties of materials used, the application technique of the dentist and the shape of cavity. [9]

The reasons of failure which can possibly be seen in composite restorations are possible to be specified as microleakage, discoloration, impact of the light device on the success of the restoration, polymerization shrinkage and fluoride-containing composite's effect on the success of the restoration, edge mismatches in composite restorations, secondary caries, water absorption, solubility in water [10].

All restorative materials, especially composite materials shrink after polymerization and gaps are composed between the restorative material and the tooth structure. Bacteria in the oral environment, liquids, ions or molecules can pass into these cavities [11-13].

The most important factor in the failure of the restoration is marginal leakage. This is especially one of the problems encountered in the second class restoration. This microleakage leads to secondary caries in the cervical region and clinical failure [14].

Bisfenolglisidil methacrylate (BIS-GMA)-based composite resins has a wide range of applications as restorative material. Enzymes in saliva leads to chemical degradation of the matrix resin [15] . As the amount of filler in composite materials increase, water absorption and solubility decreases. Water absorption can cause dimensional change, discoloration and breakage around the edges. For this reason, disruption of the integrity of the composite edge, aesthetic loss and the change in surface properties may be a matter of fact [16] .

## RESULT:

To provide aesthetic in anterior restorations is as much important is function and phonation. To improve the success rate in composite restoration depends on the application procedure of materials by clinicians. For this reason, in order to minimize the errors made in practice, dentists should pay attention to cavity principles, etching and bonding practices. However, while restoring the teeth, they should be evaluated as a whole rather than evaluate them one by one; factors such as compliance with the adjacent teeth, the contact with opposing teeth, color harmony, compliance with the corresponding teeth should not be ignored.

## CONCLUSION:

The patients were evaluated after nine months and aesthetically not any broken or decaying teeth were determined. The

failures are the part of all works. If a careful treatment plan is done, the correct case and material are choosen, an effective communication is set up with the patient and if you pay attention to every clinic step, the failures can be reduced to a large scale.

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## FIGURES:

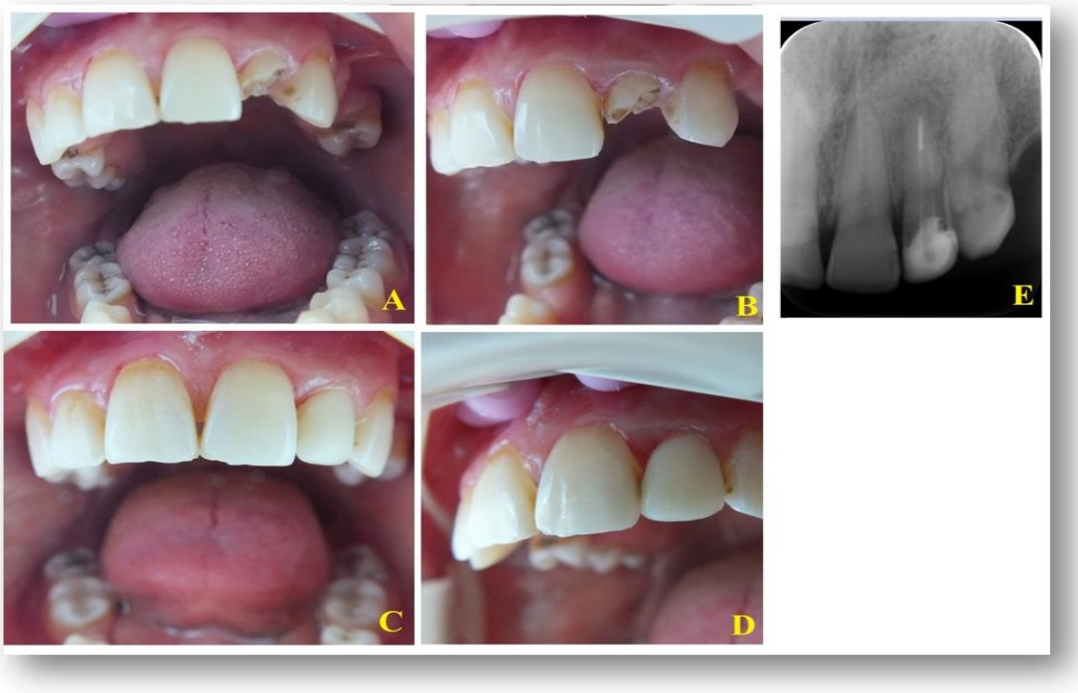


**Figure 1:** A and B: The clinical image of the lateral tooth of the patient C and D: Clinical image of post-treatment lateral teeth E: Radiographs taken after treatment, harmonization of restorative material and posts.


**Figure 2:** A: Clinical image before treatment B: Clinical image after treatment