



WALKING BLEACH-A SIMPLE WAY TO GO FROM DARK TO LIGHT - CASE SERIES ON NON VITAL TEETH BLEACHING

Dr. Anjana Banthia Nahar*

Resident, Rishiraj College Of Dental Sciences And Research Centre, Bhopal, MP. *Corresponding Author

ABSTRACT

this article reports a case series of non vital, discolored maxillary front teeth whitened by hydrogen peroxide 30% liquid and sodium perborate powder. A glass ionomer cement used for mechanical barrier to prevent the external resorption. In this case series patients was complained discolored front teeth ,most of the patient suffered from trauma, was selected for study. First of all pulpectomy procedure done in discolor teeth then tooth was bleached with 30% hydrogen peroxide and sodium per borate powder. Long term follow up done for any changes in periapical region and resorption

KEYWORDS : Walking Bleach, Nacrosed Teeth, Bleaching, Mechanical Barrier.

INTRODUCTION-

every peoples wants to be look good, dentition plays a major role in personality , so increased interest in esthetic dentistry. Tooth whitening is a basic procedure in esthetic dentistry with several merits like less invasive procedures , conserve more tooth structures, prevents difficulty in color matching, achieving the natural look of teeth, economical. Bleaching classify vital bleaching and non vital bleaching. After endodontic therapy, trauma chances of tooth discoloration is more because intrapulpal hemorrhage and pulp tissue remnants, endodontic medicaments and filling materials, leakage on coronal restoration. types bleaching materials are available e.g. oxalic acid, calcium hypochlorite, hydrogen peroxide , carbamide peroxide, sodium per borate. Mostly used 30% hydrogen peroxide and sodium per borate. 2 basic techniques used for non vital bleaching are thermocatalytic and walking bleach but potential to cervical resorbition, many modification are available to reduced the risk of cervical resorbition.

Case 1-

20 yr female who complained of discolored and unaesthetic appearance of her upper central. The patients was free from systemic disorders, and she was not under any medications that cause darkening or staining of the teeth. Clinical and radiographic examinations was carried out. A diagnosis of nonvital maxillary central incisor was made, based on the vitality test, which was performed by using an electric pulp tester; thus, the shade guide of the discolored tooth was assessed under normal daylight with a Vita porcelain shade guide (Vita Zahafabrik); also, a pre- and post-bleaching photograph was taken for the patient. Conventional endodontic treatment was done for the patient, and, after successful endodontic treatment, the bleaching process was undertaken using 30% hydrogen peroxide . The gingiva was protected by water-soluble cream (Vaseline) applied to soft tissues, and rubber dam isolation was achieved; then, 3-4 mm of the gutta-percha was removed in an apical direction beyond the cemento-enamel junction. The tooth was then washed with 3% hydrogen peroxide solution, rinsed and dried. To assure a barrier between the sealed root canal and the bleaching material (mechanical seal), a 2-3 mm of glass ionomer cement base was placed over the gutta percha. over glass ionomer cement bleaching material put and close the access cavity IRM/cavit. We changed the material and repeated the bleaching until desired results were obtained. Then, the pulp chamber was rinsed and dried and obdurate with calcium hydroxide to be left in the pulp chamber for 1 week before the final or permanent filling material (light cure composite resin). Clinical evaluation was recorded by comparing the tooth shade with its original one before treatment using the Vita porcelain shade guide and photographs; also, radiographic evaluation was done at 1, 3,

6, and 9 month intervals by taking periodical radiographs for the patient using the paralleling techniques The tooth had lightened to a suitable degree with accepted clinical success. periapical radiographs were taken prior to bleaching of teeth, immediately after bleaching, and at 1, 3, 6, and 9 months after bleaching. The pre-bleaching assessment for the tooth was diagnosed as having periapical pathosis; during the follow-up period, there were signs of healing since the start of root canal treatment. The presence of resorption was also assessed radiographically using the digital subtraction technique, and there was no evidence of cervical or progressive apical resorption.



Case 2- 25 yr female who complained of discolored and unaesthetic appearance of her upper central. The patients was free from systemic disorders, and she was not under any medications that cause darkening or staining of the teeth. Clinical and radiographic examinations were carried out. A diagnosis of nonvital maxillary central incisor was made, based on the vitality test, which was performed by using an electric pulp tester; thus, the shade guide of the discolored tooth was assessed under normal daylight with a Vita porcelain shade guide (Vita Zahafabrik); also, a pre- and post-bleaching photograph was taken for the patient. Conventional endodontic treatment was done for the patient, and, after successful endodontic treatment, the bleaching process was undertaken using 30% hydrogen peroxide . The gingiva was protected by water-soluble cream (Vaseline) applied to soft tissues, and rubber dam isolation was achieved; then, 3-4 mm of the gutta-percha was removed in an apical direction beyond the cemento-enamel junction. The tooth was then washed with 3% hydrogen peroxide solution, rinsed and dried. To assure a barrier between the sealed root

canal and the bleaching material (mechanical seal), a 2-3 mm of glass ionomer cement base was placed over the gutta percha over glass ionomer cement bleaching material put and close the access cavity IRM/cavit. We changed the material and repeated the bleaching until desired results were obtained. Then, the pulp chamber was rinsed and dried and obturated with calcium hydroxide to be left in the pulp chamber for 1 week before the final or permanent filling material (light cure composite resin). Clinical evaluation was recorded by comparing the tooth shade with its original one before treatment using the Vita porcelain shade guide and photographs; also, radiographic evaluation was done at 1, 3, 6, and 9 month intervals by taking periodical radiographs for the patient using the paralleling techniques. The tooth had lightened to a suitable degree with accepted clinical success. periapical radiographs were taken prior to bleaching of teeth, immediately after bleaching, and at 1, 3, 6, and 9 months after bleaching. The pre-bleaching assessment for the tooth was diagnosed as having periapical pathosis; during the follow-up period, there were signs of healing since the start of root canal treatment. The presence of resorption was also assessed radiographically using the digital subtraction technique, and there was no evidence of cervical or progressive apical resorption.

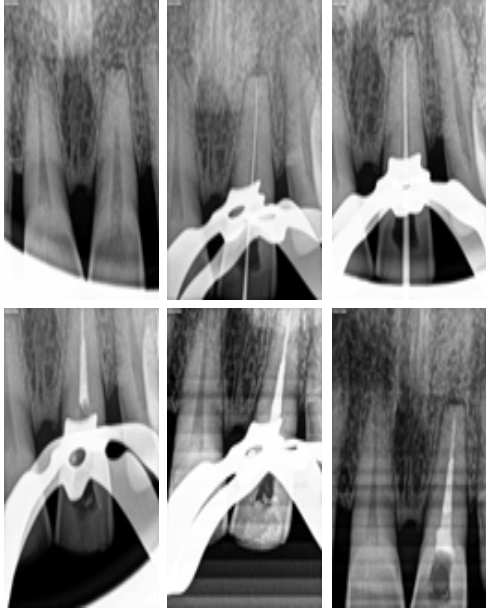


Case 3-- 25 yr male who complained of discolored and unaesthetic appearance of his upper central. The patients was free from systemic disorders, and he was not under any medications that cause darkening or staining of the teeth. Clinical and radiographic examinations were carried out. A diagnosis of nonvital maxillary central incisor was made, based on the vitality test, which was performed by using an electric pulp tester; thus, the shade guide of the discolored tooth was assessed under normal daylight with a Vita porcelain shade guide (Vita Zahafabrik); also, a pre- and post-bleaching photograph was taken for the patient. Conventional endodontic treatment was done for the patient, and, after successful endodontic treatment, the bleaching process was undertaken using 30% hydrogen peroxide . The gingiva was protected by water-soluble cream (Vaseline) applied to soft tissues, and rubber dam isolation was achieved; then, 3-4 mm of the gutta-percha was removed in an apical direction beyond the cemento-enamel junction. The tooth was then washed with 3% hydrogen peroxide solution, rinsed and dried. To assure a barrier between the sealed root canal and the bleaching material (mechanical seal), a 2-3 mm of glass ionomer cement base was placed over the gutta percha over glass ionomer cement bleaching material put and close the access cavity IRM/cavit. We changed the material and repeated the bleaching until desired results were obtained. Then, the pulp chamber was rinsed and dried and obturated with calcium hydroxide to be left in the pulp chamber for 1 week before the final or permanent filling material (light cure composite resin). Clinical evaluation was recorded by comparing the tooth shade with its original one before treatment using the Vita porcelain shade guide and photographs; also, radiographic evaluation was done at 1, 3, 6, and 9 month intervals by taking periodical radiographs for the patient using the paralleling techniques. The tooth had lightened to a suitable degree with accepted clinical success. periapical radiographs were taken prior to bleaching of teeth,

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Case 4- 50 yr male who complained of discolored and unaesthetic appearance of his upper central. The patients was free from systemic disorders, and he was not under any medications that cause darkening or staining of the teeth. Clinical and radiographic examinations were carried out. A diagnosis of nonvital maxillary central incisor was made, based on the vitality test, which was performed by using an electric pulp tester; thus, the shade guide of the discolored tooth was assessed under normal daylight with a Vita porcelain shade guide (Vita Zahafabrik); also, a pre- and post-bleaching photograph was taken for the patient. Conventional endodontic treatment was done for the patient, and, after successful endodontic treatment, the bleaching process was undertaken using 30% hydrogen peroxide . The gingiva was protected by water-soluble cream (Vaseline) applied to soft tissues, and rubber dam isolation was achieved; then, 3-4 mm of the gutta-percha was removed in an apical direction beyond the cemento-enamel junction. The tooth was then washed with 3% hydrogen peroxide solution, rinsed and dried. To assure a barrier between the sealed root canal and the bleaching material (mechanical seal), a 2-3 mm of glass ionomer cement base was placed over the gutta percha over glass ionomer cement bleaching material put and close the access cavity IRM/cavit. We changed the material and repeated the bleaching until desired results were obtained. Then, the pulp chamber was rinsed and dried and obturated with calcium hydroxide to be left in the pulp chamber for 1 week before the final or permanent filling material (light cure composite resin). Clinical evaluation was recorded by comparing the tooth shade with its original one before treatment using the Vita porcelain shade guide and photographs; also, radiographic evaluation was done at 1, 3, 6, and 9 month intervals by taking periodical radiographs for the patient using the paralleling techniques. The tooth had lightened to a suitable degree with accepted clinical success. periapical radiographs were taken prior to bleaching of teeth, immediately after bleaching, and at 1, 3, 6, and 9 months after bleaching. The pre-bleaching assessment for the tooth was diagnosed as having periapical pathosis; during the follow-up period, there were signs of healing since the start of root canal treatment. The presence of resorption was also assessed radiographically using the digital subtraction technique, and there was no evidence of cervical or progressive apical resorption.



DISCUSSION-

middle of the 19th century non vital bleaching were first time done¹. Previously chlorinated lime² used , oxalic acid also recommended³. Harlen [1884] recommended hydrogen peroxide. abbot[1918] and Prinz [1924] recommended heated solution of superoxol and sodium per borate for whitening of pulp cavity^{5,6}. Sodium per borate whitening efficacy is not different either mix with peroxide or water.⁷

Diagnosis of etiology of discoloration is outmost important thing it has a great impact on treatment outcome⁸. Combine phenomena of optical properties and light decide the tooth color⁹. Color of dentin decide the tooth color. Changes in enamel, dentin, pulp cause a change of the light transmitting properties of the tooth.¹⁰ nacrosted pulp discolor the crown of tooth, if discoloration compound stay longer in crown , greater discoloration occurs.¹¹ pulpal hemorrhage in the pulp cavity causes blood components flow in tubules of dentin and discolor the crown.¹² poorly design access cavity left the pulp tissue inside [pulp horns] cause discoloration of crown. medicaments like tetracycline,minocycline, old restoration causes micro leakage causes discoloration.¹³

Hydrogen per oxide is a strong oxidizers , recently used as a tooth whitening materials. It break down in to active oxygen and accelerated by heat application or light application. Fresh preparation is more useful and must be keep in dark cool room. Sodium per borate is oxidizing agent comes in a powder form , when mix with water , acid it disintegrate in to sodium meta borate , hydrogen per oxide and active oxygen. It is safer than peroxide and easier to control.¹⁴

Diagnosis of tooth discoloration is most important thing, to clean the extrinsic discoloration surface of discolor tooth thoroughly clean with pumice slurry. Radiographs taken for checking the quality of root canal filling. Rubber dam

application is must for protecting adjacent vital structure, . for cervical seal [2-3mm thick] different material can be used like glass ionomer cement, hydraulic filling materials [cavit] resin composite, zinc oxide eugenol cement , zinc phosphate cement, photo- activated temporary resin materials[fermit]. access cavity cleaned by alcohol for dehydration of dentine and reduced the surface tension so bleaching agent penetrate more depth in to dentine and improved efficacy. Sodium per borate mixed with distilled water in a ration 2:1 and amalgam carrier or plugger is used to carry material. Temporary filling material [IRM, glass ionomer] used for seal the access cavity. 2- 4 visit required for good result of walking bleach. Post operative radiograph after bleaching and follow up x rays is mandatory.¹⁵

CONCLUSION-

Non vital bleaching or walking bleaching is important, adjunct and valuable procedures after endodontic treatment. Correct diagnosis , selection of whitening materials , techniques and its interaction with hard and soft tissues all factors determine the success , satisfaction and safty of patient as well.

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