

Aesthetic Management of Discolored Teeth Using McInnes Solution -Report of Five Cases

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Abstract: Discolouration of the teeth is one of the major reasons for dental visit especially in younger age groups. Different treatment options are available for the management of discolouration. Bleaching is one of the conservative treatment options for discolored tooth. McInnes solution is economic and a conservative treatment option for discoloration. This Case series describe successful management of discolored teeth using McInnes solution as the treatment modality.

Key words: bleaching, discoloration, McInnes solution

Date of Submission: 14-06-2019

Date of acceptance: 29-06-2019

I. Introduction

Discoloration of the teeth is one of the major reasons for dental visit especially in younger age groups. It can be intrinsic and extrinsic or both. Discoloration of anterior teeth is displeasing and result in emotional distress to the patients and it can affect their quality of life. The treatment options for the management of discolorations are composite veneers, porcelain veneers, crowns etc. Bleaching is one of the conservative treatment options for discolored tooth. This Case series describe successful management of discolored teeth by bleaching with McInnes solution as the treatment modality. McInnes solution provides a conservative and economic option for the effective management of stains.

II. Case Report 1

17 year old female complains of discolored lower anterior teeth. On examination yellowish discoloration noticed on the labial surface of lower right central incisor. No associated pain or swelling reported but lower anterior deep bite was noticed. The treatment planned for this discoloration was bleaching using McInnes solution followed by macro abrasion. Patient was informed about the procedure and its outcomes (i.e. hypersensitivity and little stains and pits). Oral prophylaxis and preoperative photographs were taken before the procedure. Cocoa butter was applied sufficiently over the adjacent gingival and mucosal area to prevent any injury from the McInnes solution.

Isolation was done using rubber dam and dam stabilized with wedjets. High volume suction was also used. The McInnes solution consists of 5 parts of 35% of hydrogen peroxide, 5 parts of hydrochloric acid 36% and 1 part of diethyl ether. McInnes solution was prepared just before the procedure, for the effectiveness of the solution and solution was applied on to the teeth using cotton buds for 5-10 minutes with intervals. The procedure was repeated until the stain gets disappeared. Copious irrigation was done using air water syringe and rubber dam was removed. Polishing was done with polishing paste. The small pit remaining was removed by macro abrasion using flame shaped grit. After the completion of the treatment, post operative photographs were taken and SHY NM tooth paste was prescribed to the patient. Patient was instructed not to take any colored foods and drinks for 2 weeks. Only plastic instruments were use during the procedure because it will corrode the stainless steel instruments.



Figure1: Pre Operative View



Figure : Post Operative View



Figure: Post Operative View

III. Case Report 2

A 19 year old female patient complains of yellowish white discoloration on the upper front tooth. On examination intrinsic discoloration noticed in the upper central incisors .Calculus deposits noticed in lower incisor region. Oral prophylaxis was done before the procedure and bleaching was done with McInnes solution. It took two sitting with one week interval for the disappearance of stain.



Figure1: Pre Operative View



Figure: Post Operative View

IV. Case Report 3

A 20 year old male patient complains of yellowish discoloration in the lower front teeth. On examination intrinsic discoloration noticed in the lower right central incisor and lateral incisor. The Mc Innes solution was applied after rubber dam isolation. The small pit remaining was removed by macro abrasion using flame shaped grit. Composite restoration was done in lateral incisor after two weeks .



Figure1: Pre Operative View



Figure2: Post Operative View

V. Case Report 4

A 23 year old male patient complains of discolored upper and lower front teeth .Patient had orthodontic treatment 4 years back. No history of sensitivity or pain reported. Oral prophylaxis was done before the procedure and teeth was applied with Mc Innes solution. After 5 to 10 minutes the teeth regained their original color and bleaching was done two shades lighter. After the procedure the tooth was polished using polishing paste.



Figure1: Pre Operative View



Figure2: Rubber Dam isolation



Figure3: Post Operative View

VI. Case Report 5

A 15 year old female complains of yellowish discoloration and pitting .On examination pitting type of flourosis was noticed. Pitting was morepronounced in upper central incisors and lower four incisors. The treatment plan was bleaching and composite restoration. The treatment was completed by four sittings in weekly intervals. Patient prescribed with SHY NM desensitizing tooth paste in between the intervals.



Figure: Pre Operative View



Figure: Second sitting



Figure: Post Operative View
veneering with composite



Figure: Post Operative View after direct

VII. Discussion

Tooth discoloration may be intrinsic extrinsic, combination of both or internalized discoloration. It can be due to dentist related or tooth related cause^{1,2}. The management of discoloration depends mainly on the etiology, proper diagnosis and selection of appropriate treatment options like more invasive options such as crowns, veneers and direct restorations to minimally invasive therapies such as macro abrasion, micro abrasion, and bleaching. Bleaching can be defined as the lightening of a color of the tooth through the application of chemical agents to oxidize the organic pigmentation in the tooth³. In-office bleaching and dentist prescribed, home applied bleaching are the two most commonly utilized whitening procedures. Different types of materials

are available for bleaching of teeth. McInnes solution is economic, viable, relatively safe, and conservative in the treatment of intrinsic stains and discoloration^{4,5}. The McInnes solution consists of⁶

- i) 5 parts of 35% of hydrogen peroxide – bleaches the enamel
- ii) 5 parts of hydrochloric acid 36% - Etches the enamel
- iii) 1 part of diethyl ether – removes surface debris

A freshly prepared solution is used for the procedure. Protection of adjacent soft tissue is important. The complete process of treatment is under the control of the dentist. The process is relatively fast as the results become evident even after a single visit. Bleaching with this solution is aesthetically pleasing as well as a minimally invasive option for young patients so that a complete coronal covering or material ingestion and discomfort from wearing trays by home bleaching can be avoided. [6].

McInnes solution has many advantages including inexpensiveness, less chair side time and immediate treatment results. With proper isolation using rubber dam, the McInnes solution can be used on either the entire dental arch or on the isolated tooth^{2,3}. Dentists can continue or terminate the treatment at any time as the application of solution can be easily controlled. The acidic nature of the solution may cause mild demineralization that can be prevented by prescribing SHY NM as we have done in our cases. Metallic taste sensation and post operative sensitivity are the side effects reported by some patients, but they are transient in nature. Desensitizing tooth paste also can be prescribed in an appropriate situation.

VIII. Conclusion

McInnes solution is economic and a conservative treatment option for discoloration. The above case series show the successful treatment outcome using this solution as treatment modality. Based on these findings, McInnes solution can be used as an alternative economic option for mild to moderate discoloration and fluorosis stain in routine clinical practice.

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Dr Jamshina K. "Aesthetic Management of Discolored Teeth Using McInnes Solution -Report of Five Cases." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 18, no. 6, 2019, pp 26-30.