International Poster Journal IPJ of Dentistry and Oral Medicine

Int Poster J Dent Oral Med 2004, Vol 6 No 03, Poster 237

Simultaneous tooth displacement and horizontal mid-third root fracture treated by re-placement and Root-MTA. A case report

Language: English

Authors:
Assist. Prof. Dr. Stefan-Ioan Stratul,
Dr. Anca Benta,
Department of Odontology-Periodontology,
Faculty of Dental Medicine,
Victor Babes University of Medicine and Pharmacy Timisoara/Temeschburg, Romania

Date/Event/Venue:
October, 2-4th, 2003
11th Biennial Congress of the European Society of Endodontology
Athens/Greece

Introduction

Mineral Trioxide Aggregate (MTA) has been advocated over the last years with excellent results as a valuable material in the treatment of root canal perforations, in apexification of immature teeth, as in root-end filling following apicoectomies (Pitt Ford, Friedman, Grossman etc.). In cell cultures, MTA has displayed favorable responses, that ranged from behavior very similar to that to titanium surfaces, to obvious stimulation (Pistorius, Willershausen, Marroquin etc.). However, the role of MTA in treating root fractures has been so far less investigated.

Material und Methods

Case report

A 43 yo female patient who suffered a home accident was referred. The accident resulted in the incomplete alveolar fracture of region 23-25, luxation towards labial and labial displacement of 23. Primary trauma care missed the dental diagnosis and delayed with 48 hrs the report of the patient to the dentist, that referred her immediately to the endodontist. On examination, tooth 23 labially out of alignment, severe pain at slightest touch and slight oedema were noticed. Standardized radiographs revealed a very thin, artifact-like horizontal fracture of the mid third root of 23. Treatment options, varying from avulsion to transfixation of 23 were taken into consideration. The patient complied with the endodontist' suggestion to extreme conservative treatment approach. Afer having obtained an informed consent from the patient, the incomplete alveolar fracture was reduced under anesthesia, and the root canal treated with Ni-Ti rotary instruments (ProTaper® - Dentsply-Maillefer, Ballaigues, Switzerland). Mineral Trioxide Aggregate (ProRoot®; DENTSPLY/Tulsa Dental, Tulsa, Oklahoma, USA) was placed into the canal as a permanent filling. Postoperative radiographs were taken. 23 was splinted in correct position by mean of an acrylic provisional bridge. Postterapeutic care included chlorhexidine 0,2% rinses. Precautions were taken to eliminate occlusal interferences that might cause further trauma to 23. Following the treatment, the patient did not display any sign of posttraumatic symptomatology.

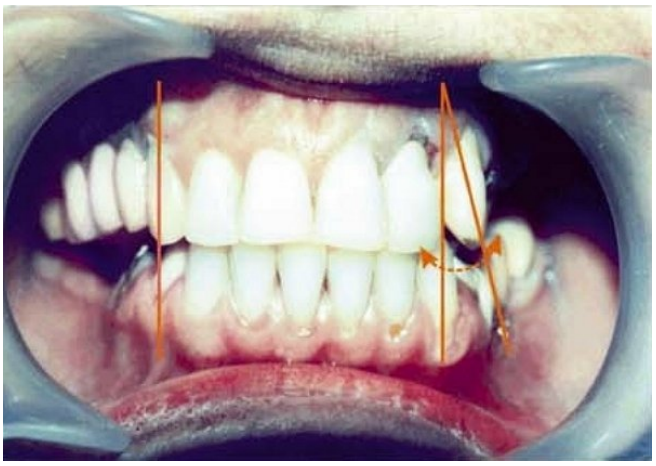

Fig.1 Frontal view of the post-traumatic displacement of tooth 23

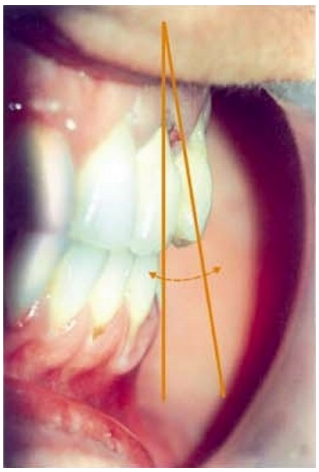

Fig.2 Lateral view of the post-traumatic displacement of tooth 23

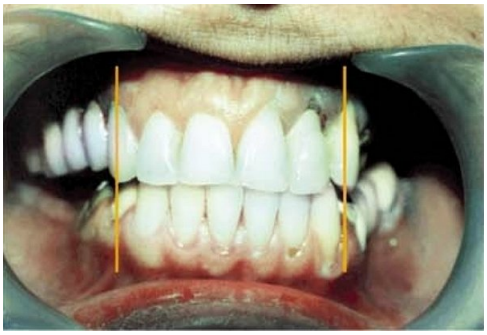

Fig.3 Frontal view of the anterior maxillary teeth with 23 re-placed

Fig.4 Occlusal view of the re-placed and splinted 23

Fig.5 Frontal view of the buccal mucosa regio 23 at four months after splinting

Evolution

At 4 months, tooth 23 remained asymptomatic. After removal of the provisional bridge, 23 displayed no mobility. Radiographic examination reveals a blurry profile of the fracture site, with very slight periradicular modifications. Splinting by provisional bridge is scheduled to remain in place until 6 months after the endodontic treatment.

Fig.6 Preoperative Rx

Fig.7 Rx at four months after the treatment

Discussion and Conclusions

The case report suggests that:
1) deep horizontal root fracture combined with teeth displacement can be successfully treated;
2) MTA can serve as the best choice for a definitive root filling material in horizontal fractures, when root canal treatment is adequately provided;
3) the immediate intervention of the practitioner with the rationale application of the sequence re-placement-rotary root canal treatment-Root-MTA-splinting spectacularly improves the conservative outcome of similar cases.

Abbreviations

MTA = Mineral Trioxide Aggregate

This poster was submitted by Assist. Prof. Dr. Stefan-Ioan Stratul.

Correspondence address:
Assist. Prof. Dr. Stefan-Ioan Stratul
Str.Em.Gojdu 5
300176 Timisoara
Romania

Poster Faksimile:

Simultaneous tooth displacement and horizontal mid-third root fracture treated by replacement and Root-MTA. A case report.


Stratul S-I, Benta A.*
Victor Babes Medical University of Timisoara, Romania

ABSTRACT

This is a case report of a 43-y.o. female patient who suffered a home accident, which resulted in the incomplete alveolar fracture of regio 23-25, labial luxation and displacement of 23. Primary trauma care missed the dental diagnosis and delayed with 48 hrs the report of the patient to the dentist, that referred her immediately to the endodontist. On examination, 23 labially out of alignment and severe pain at slightest touch were noticed. Standardized radiographs revealed a very thin, artifact-like horizontal fracture of the mid third root of 23. Many treatment options, varying from avulsion to transfixation of 23 were taken into consideration. As the endodontist' suggestion was the extreme conservative treatment attempt, the incomplete alveolar fracture was reduced under anesthesia, the root canal treatment with Ni-Ti rotary instruments (ProTaper® , Dentsply-Maillefer) was performed and Root-MTA was placed into the canal as permanent dressing. 23 was splinted in correct position. There was no post-treatment simptomatology. At 4 months, the tooth remains asymptomatic with no mobility. Radiographic examination reveals a blurry profile of the fracture site, with very slight periradicular modifications. The case report suggests that 1) deep horizontal root fracture combined with teeth displacement can be successfully treated 2) the immediate intervention of the practitioner with the rationale application of the sequence replacement-rotary root canal treatment-Root-MTA-splinting spectacularly improves the conservative outcome of similar cases.

INTRODUCTION

Mineral Trioxide Aggregate (MTA) has been advocated over the last years with excellent results as a valuable material in the treatment of root canal perforations, in apexification of immature teeth, as in root-end filling following apicoectomies (*Pitt Ford, Friedman, Grossman etc.*). In cell cultures, MTA has displayed favorable responses, that ranged from behavior very similar to that to titanium surfaces, to obvious stimulation (*Pistorius, Willershausen, Marroquin etc.*). However, the role of MTA in treating root fractures has been so far less investigated.

CASE REPORT

A 43 yo female patient who suffered a home accident was referred. The accident resulted in the incomplete alveolar fracture of region 23-25, luxation towards labial and labial displacement of 23. Primary trauma care missed the dental diagnosis and delayed with 48 hrs the report of the patient to the dentist, that referred her immediately to the endodontist. On examination, tooth 23 labially out of alignment, severe pain at slightest touch and slight oedema were noticed. Standardized radiographs revealed a very thin, artifact-like horizontal fracture of the mid third root of 23. Treatment options, varying from avulsion to transfixation of 23 were taken into consideration. The patient complied with the endodontist' suggestion to extreme conservative treatment approach. After having obtained an informed consent from the patient, the incomplete alveolar fracture was reduced under anesthesia, and the root canal treated with Ni-Ti rotary instruments (ProTaper® , Dentsply-Maillefer, Ballaigues, Switzerland). Mineral Trioxide Aggregate (ProRoot® , DENTSPLY/Tulsa Dental, Tulsa, Oklahoma, USA) was placed into the canal as a permanent filling. Postoperative radiographs were taken. 23 was splinted in correct position by mean of an acrylic provisional bridge. Postoperative care included chlorhexidine 0,2% rinses. Precautions were taken to eliminate occlusal interferences that might cause further trauma to 23. Following the treatment, the patient did not display any sign of posttraumatic symptomatology.

Fig. 1. Frontal view of the post-traumatic displacement of tooth 23

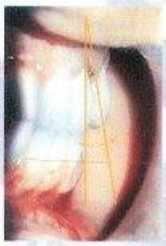

Fig. 2. Lateral view of the post-traumatic displacement of tooth 23

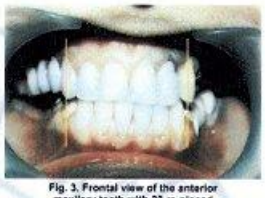

Fig. 3. Frontal view of the anterior maxillary teeth with 23 re-placed

Fig. 4. Occlusal view of the re-placed and splinted 23

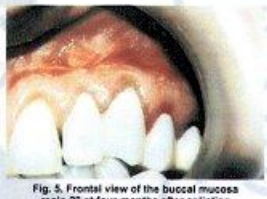

Fig. 5. Frontal view of the buccal mucosa regio 23 at four months after splinting

EVOLUTION

At 4 months, tooth 23 remained asymptomatic. After removal of provisional bridge, 23 displayed no mobility. Radiographic examination reveals a blurry profile of the fracture site, with very slight periradicular modifications. Splinting by provisional bridge is scheduled to remain in place until 6 months after the endodontic treatment.

Fig. 6. Preoperative Rx

Fig. 7. Rx at four months after the treatment

CONCLUSION

The case report suggests that 1) deep horizontal root fracture combined with teeth displacement can be successfully treated 2) MTA can serve as the best choice for a definitive root filling material in horizontal fractures, when root canal treatment is adequately provided.
2) the immediate intervention of the practitioner with the rationale application of the sequence replacement-rotary root canal treatment-Root-MTA-splinting spectacularly improves the conservative outcome of similar cases.

Contact the authors:

Ass. Prof. Dr.Stefan-Ioan Stratul, DMD, *Medicus Primarius*, PhD, MDiv
Dept. of Odontology-Periodontology, Faculty of Dental Medicine, Victor Babes Medical and Pharmaceutical University
P-ta Eftimie Murgu 2, 1900 Timisoara, Romania
Email : sbs@online.ro