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# External root resorbtion of traumatic origin associated with combined endodontic-periodontal lesion. A case report.

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**Authors:**
Assist. Prof. Dr. Dr. Stefan Ioan Stratul, Assist. Prof. Dr. Jianu Rodica, Prof. Dr. Enache Sanda, Assist. Prof. Dr. Rusu Darian,
Victor Babes Medical University of Timisoara, Romania

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## Introduction

Traumatic injuries of the teeth and/or of the supporting tissues are known to induce sometimes late external lacunar root resorbtions (Rocha, Cardoso - 2004; Fuss, Tsesis, Lin - 2003). If penetrating, they can cause pulpal necrosis and subsequently complicate with lateral periodontitis, ending up with extended combined endodontic-periodontal lesions, threatening the tooth strength and its periodontal stability.

## Objectives

CASE REPORT

This is case report of a 46-y.o. male patient with a remote history of a sport accident, which resulted in the injury of the upper central incisors and of the frontal alveolar process. The trauma was overlooked at the moment of the accident. The patient presented with a history of chronic localized periodontitis of the tooth 11. On examination, a 9 mm deep periodontal pocket on the distal and vestibular aspect of the root, CAL 13 mm, abundant exudate, root discoloration and slight mobility of 11 were noticed (Fig.1). Standardized radiographs revealed a radiotransparent lacuna on the mid third of the root and a mesial angular deep intrabony periodontal defect, with a depth of cca 6 mm as measured on the radiograph (Fig.6). The tooth vitality tested negative.

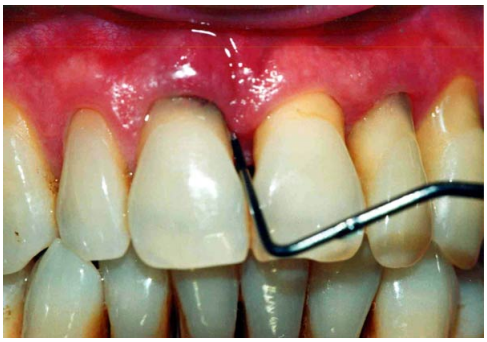

Fig.1 Initial aspect of 11

## Material and Methods

Root canal treatment with Ni-Ti rotary instruments (ProTaper®-Dentsply-Maillefer, Ballaigues, Switzerland) and canal filling with condensed warmed gutta-percha (Thermafill®plus-Dentsply-Maillefer, Ballaigues, Switzerland) were performed (Fig.7). As the attempts to electrometrically assess the root canal length were inconclusive, a communication of the root canal with the exterior was suspected, so the canal was provisionally isolated from the pocket with a celluloid strip (Fig.2). When a full-thickness flap of the anterior maxillary region was raised, an extensive external root resorbtion with carious involvement of the anterior aspect of the root surface of 11, a deep intrabony mesial two-wall defect and the lack of the vestibular cortical were noticed (Fig.3). The cavity was prepared with round burs, filled with glass-ionomer cement, the defect was carefully debrided and treated by a combination of enamel matrix protein derivative (Emdogain® - StraumannAG, Waldenburg, Germany) and a bioresorbable membrane (Gore-Tex®, WL Gore, Flagstaff, AR, USA) (Fig.4). Postsurgical care consisted in CHX rinsing twice a day for the next four weeks. The maxillary front teeth were splinted. Sutures were removed after 2 weeks.

## Results

EVOLUTION

At 18 months after the surgery, the pocket depth reduced to 3 mm, the CAL changed to 10 mm, the tooth was stable (Fig.5), while the radiographs showed a defect fill of ab.80% (Fig.8). Splinting will remain in place indefinitely.

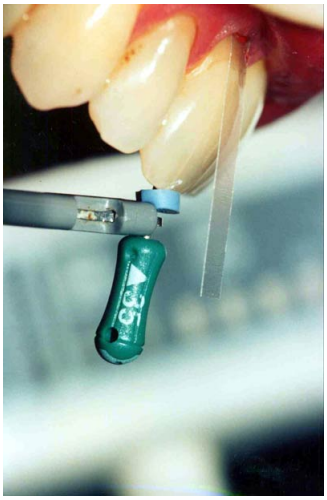

Fig.2 Buccal aspect of the root isolated with a celluloid strip in order to assess the root canal length

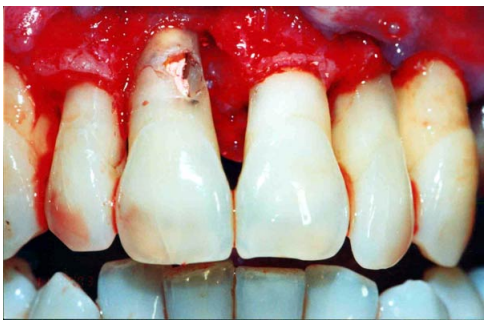

Fig.3 The lacunar root resorbtion and the defect exposed

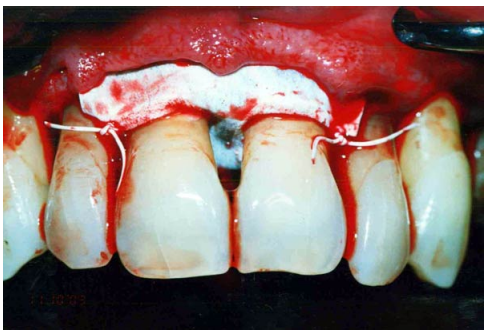

Fig.4 The membrane in place

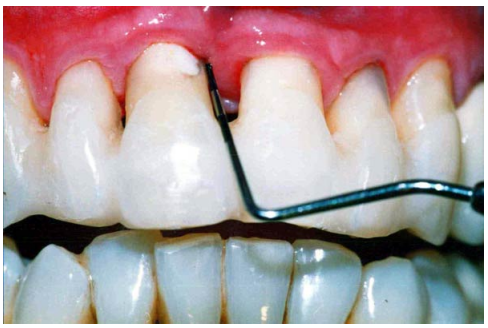

Fig.5 Aspect of 11 at 18 months after the surgery

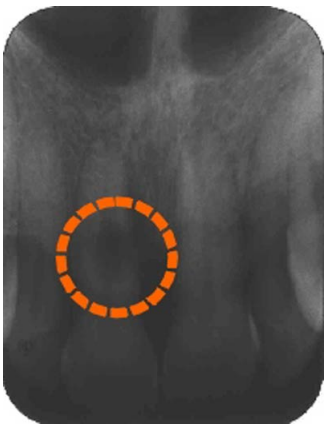

Fig.6 Initial radiograph of 11

Fig.7 Pre-surgical Rx after completion of the root canal treatment

Fig.8 Rx at 18 months after the treatment

## Conclusions

The case report suggests that 1) external root resorbtions can be related to early alveolar injuries. 2) overlooked alveolar injuries can lead to deep external root resorbtions, and further to complications as root caries, pulpal necrosis and periodontal intrabony defects. 3) the described interrelated pathology can be successfully treated by combining specific conservative endodontic-periodontal procedures.

## Abbreviations

EMP-Enamel Matrix Protein
CAL- Clinical attachement level
CHX- Chlorhexidine

*This Poster was submitted by Assist. Prof. Dr. Dr. Stefan Ioan Stratul.*

**Correspondence address:**
*Assist. Prof. Dr. Dr. Stefan Ioan Stratul*
Victor Babes Medical University of Timisoara
Str. Em.Gojdu, no.5
300176 Timisoara
Romania.

**Poster Faksimile:**

# External root resorbtion of traumatic origin associated with combined endodontic-periodontal lesion. A case report.

*Stratul S-I, Jianu R., Enache S., Rusu D. – Victor Babes Medical University of Timisoara, Romania*

## ABSTRACT

*This is a case report of a 46-y.o. male patient with a history of a sport accident, which resulted in the injury of the upper central incisors. Patient presented years later with localized periodontitis of 11. 9 mm periodontal pocket on the distal and buccal aspect of the root, exudate, root discoloration, mobility of 11 were noticed. Radiographs revealed lacuna on the mid third of the root and 6mm mesial angular defect as measured on radiograph. Vitality tested negative. Root-canal treatment (ProTaper® + Thermafil®plus-Dentsply-Maillefer) was performed. As the attempts to electrometrically assess the root-canal length were inconclusive, a communication of the canal with the exterior was suspected. A full-thickness-flap of the anterior maxillary region was raised. An extensive external resorbtion of the root surface of 11, a deep mesial two-wall defect and lack of the bucal cortical were found. Cavity was filled with glass-ionomer cement, the defect debrided and treated by EMP's (Emdogain®-Straumann) plus bioresorbable membrane. After 18 months pocket reduced to 3 mm, with radiographic defect fill 80%. Conclusions: 1) overlooked alveolar injuries can lead to penetrating external root resorbtions complicated with root caries, pulpal necrosis and periodontal defects. 3) therapeutical success can be achieved by combining conservative-endodontic-periodontal procedures.*

## INTRODUCTION

Traumatic injuries of the teeth and/or of the supporting tissues are known to induce sometimes late external lacunar root resorbtions (*Rocha, Cardoso 2004; Fuss, Tsesis, Lin 2003*). If penetrating, they can cause pulpal necrosis and subsequently complicate with lateral periodontitis, ending up with extended combined endodontic-periodontal lesions, threatening the tooth strength and its periodontal stability.

## CASE REPORT

This is case report of a 46-y.o. male patient with a remote history of a sport accident, which resulted in the injury of the upper central incisors and of the frontal alveolar process. The trauma was overlooked at the moment of the accident. The patient presented with a history of chronic localized periodontitis of the tooth 11. On examination, a 9 mm deep periodontal pocket on the distal and vestibular aspect of the root, CAL 13 mm, abundant exudate, root discoloration and slight mobility of 11 were noticed (Fig.1). Standardized radiographs revealed a radiotransparent lacuna on the mid third of the root and a mesial angular deep intrabony periodontal defect, with a depth of cca 6 mm as measured on the radiograph (Fig.6). The tooth vitality tested negative. Root canal treatment with Ni-Ti rotary instruments (ProTaper®-Dentsply-Maillefer, Ballaigues, Switzerland) and canal filling with condensed warmed gutta-percha (Thermafil®plus-Dentsply-Maillefer, Ballaigues, Switzerland) were performed (Fig.7). As the attempts to electrometrically assess the root canal length were inconclusive, a communication of the root canal with the exterior was suspected, so the canal was provisionally isolated from the pocket with a celluloid strip (Fig.2). When a full-thickness flap of the anterior maxillary region was raised, an extensive external root resorbtion with carious involvement of the anterior aspect of the root surface of 11, a deep intrabony mesial two-wall defect and the lack of the vestibular cortical were noticed (Fig.3). The cavity was prepared with round burs, filled with glass-ionomer cement, the defect was carefully debrided and treated by a combination of enamel matrix protein derivative (Emdogain® - StraumannAG, Waldenburg, Germany) and a bioresorbable membrane (Gore-Tex®, W.L.Gore, Flagstaff, AR, USA) (Fig.4). Postsurgical care consisted in CHX rinses twice a day for the next four weeks. The maxillary front teeth were splinted. Sutures were removed after 2 weeks.

Fig.1 Initial aspect of 11

Contact the authors

Dr. Dr. Stefan-Ioan Stratul, DMD, PhD, MDh, Medicus Primarius, ResAssoc. (Johannes Gutenberg University of Mainz, Germany), Assist.Prof. (Victor Babes University of Medicine, Timisoara, Romania)

sbs@online.ro

## EVOLUTION

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## CONCLUSIONS

The case report suggests that: 1) external root resorbtions can be related to early alveolar injuries. 2) overlooked alveolar injuries can lead to deep external root resorbtions, and further to complications as root caries, pulpal necrosis and periodontal intrabony defects. 3) the described interrelated pathology can be successfully treated by combining specific conservative-endodontic-periodontal procedures.