



# Use of MTA in the treatment of horizontal root fractures of immature permanent teeth: report of case



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## Introduction:

Radicular fractures in immature permanent teeth are uncommon injuries among dental trauma comprising 0.5 – 7 % of the cases. Fracture occurs most often in middle third of the root and rarely at the apical third. Mineral Trioxide Aggregate was introduced to dentistry as a root end filling material. It has been advocated for filling root canals, repairing perforations, pulp capping and root end induction. The present paper reports a clinical case of a horizontal radicular fracture located between the middle and apical third of upper central incisor treated with Mineral Trioxide Aggregate with a 6 years follow-up.

A 10-year-old boy was referred to the Department of Pediatric Dentistry at the Faculty of Dentistry, Monastir, Tunisia.

The patient's history included a traumatic injury when he was 8 years old

Treatment had been started in a private clinic at that time, but the patient failed to complete the treatment.

An intraoral examination of the patient revealed a sinus tract present on the buccal mucosa.

Radiographic examination showed a horizontal root fracture between the middle and apical third of 21 and a diastasis greater than 1 mm was estimated in the fracture line. Root canal treatment of tooth was Planned.

Because the apical part of the coronal fragment resembles teeth with open apices, MTA was used for optimal closure of the wound area.



Radiographic appearance of root fracture in central incisor.



Working Length determination radiograph



Calcium hydroxide obturation



Two-week follow-up radiograph



Application of apical plug with MTA.



Note the diffusion of MTA in fistula.



Two-week follow-up : extrusion of MTA



Final root canal obturation



Six-month follow-up radiograph



Six-year follow-up radiograph: note the new hard tissue around the MTA

## Conclusion:

The use of MTA in the treatment of horizontal root fractures is not a routine application; however, MTA positively affected the healing of fractured teeth after 6 years so it may be concluded that it can be used clinically in the treatment of horizontal root fractures.

## Bibliography:

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