

REVIEWER'S REPORT

Manuscript No.: IJAR-53444

Date: 20/08/2025

Title: A Novel Approach in the treatment of Horizontal Root Fracture using K- File with MTA as an Intra-Radicular splint

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revisionYes.....

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality	•			
Techn. Quality		•		
Clarity		•		
Significance		•		

Reviewer Name: Dr. Sireesha Kuruganti

Date: 20/08/2025

Reviewer's Comment for Publication.

(To be published with the manuscript in the journal)

The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewers name.

This case report presents an interesting and clinically relevant approach to managing a horizontal root fracture in a maxillary lateral incisor using an intra-radicular K-file splint with Mineral Trioxide Aggregate (MTA).

Detailed Reviewer's Report

Here is a detailed in-depth review of the provided manuscript.

This review is structured to mirror the peer-review process for a scientific journal, offering constructive feedback to improve the manuscript's quality, clarity, and scientific rigor.

General Comments

This case report presents an interesting and clinically relevant approach to managing a horizontal root fracture in a maxillary lateral incisor using an intra-radicular K-file splint with Mineral Trioxide Aggregate (MTA). The topic is of interest to clinicians, especially endodontists and general dentists dealing with dental trauma. The manuscript highlights a successful short-term outcome for a challenging clinical scenario.

However, the manuscript requires major revisions before it can be considered for publication. There are several significant inconsistencies, a need for greater detail in the methodology and discussion, and general improvements required in scientific writing and formatting. The core idea is valuable, but its presentation must be more rigorous.

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Major Comments

Contradictory Information on the Treated Tooth: This is the most critical issue. The introduction (Lines 35-37) states the case report involves an MTA barrier in a mandibular lateral incisor and also mentions follow-up of a maxillary lateral incisor. However, the Case Description (Line 45) and subsequent figures clearly describe the treatment of an upper left lateral incisor (maxillary, tooth 22). This contradiction is confusing and undermines the credibility of the report. The authors must ensure the entire manuscript consistently refers to the correct tooth.

Claim of "Novel Approach": The title (Line 1) uses the term "A Novel Approach." While the technique is a good application of materials, using an endodontic file or post for internal splinting is not entirely new. The authors even cite similar techniques in the discussion (Lines 98-100). It is recommended to change the title to something more descriptive and less presumptive, such as "Intra-Radicular Splinting with a K-file and MTA for the Management of a Horizontal Root Fracture: A Case Report."

Lack of Justification for Treatment Timing: The discussion (Lines 86-88) correctly states that the preferred approach for horizontal root fractures is often watchful waiting, as pulp necrosis occurs in only about 20-25% of cases (Lines 86, 90). The patient presented 5 months post-trauma with clear signs of necrosis (no response to pulp tests, discomfort on percussion) (Lines 41-44). The manuscript should explicitly connect these points in the discussion. The authors should clearly state that endodontic intervention was necessary because signs and symptoms of pulp necrosis were present, justifying their deviation from the initial conservative monitoring approach.

Figure Numbering and Captions: There is a significant error in figure numbering. There are two distinct figures labeled as "Figure 5" (Lines 70, 75). The figure showing the K-file coated with MTA and the radiograph showing the final restoration should be numbered sequentially (e.g., Figure 5 and Figure 6). Consequently, the follow-up radiograph would become Figure 7. Furthermore, the captions are too brief. They should be more descriptive (e.g., "Figure 2: Pre-operative periapical radiograph of the maxillary left lateral incisor (tooth 22) revealing a horizontal fracture in the cervical third of the root.").

Minor Comments (Line-by-Line)

Line 6: The abstract states root fractures occur "more frequently in children." The introduction (Lines 26-27) states they are more common in "fully erupted teeth with completely developed roots." While not mutually exclusive, this could be clarified, as complete root development often occurs in adolescence rather than early childhood.

Line 17: The term "excellent healing outcomes" is subjective. It would be more scientific to state "Clinical and radiographic evaluations indicated resolution of symptoms and evidence of hard tissue repair."

Line 39: "female child" is informal. "15-year-old female patient" or "adolescent female" is more appropriate for a scientific manuscript.

Line 53: The term "step back preparation" is mentioned. While a well-known technique, briefly stating the master apical file size (which is done) and the taper helps in reproducibility. The information provided is adequate but could be slightly more detailed.

Line 64: "File length was adjusted to stabilize both segments passively without exerting pressure." This is a critical and well-stated point.

Line 71: The manuscript states "sufficient amount of MTA was maintained around the file." This is vague. Can the authors provide more detail? Was the canal backfilled with MTA around the file, or was the file simply coated? A more precise description of the obturation technique is needed.

Lines 77-78: The description of radiographic healing is good. Mentioning "normal width of periodontal space and hard tissue lining of fracture line" provides objective evidence of success.

Line 86: "the incidence of pulp necrosis...is slightly above 20%." The discussion then states "Around 25% of adult patients..." (Line 90). These numbers are consistent and support the argument well.

Lines 101-103: The authors state that healing is more frequent when treatment is limited to the coronal fragment. They should explicitly state that their case followed this principle, strengthening their rationale.

International Journal of Advanced Research

Publisher's Name: Jana Publication and Research LLP

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Lines 112-114: The conclusion is a good summary but is somewhat repetitive of the abstract. It could be strengthened by adding a concluding thought on the potential of this technique as a viable option in similar clinical presentations.

General: The manuscript would benefit from a thorough proofread to correct minor grammatical errors and improve sentence flow.

Recommendation

Major Revisions Required.

The case is valuable and the successful outcome is noteworthy. However, the manuscript in its current form suffers from a critical inconsistency regarding the tooth being treated, along with other issues related to the title, justification of the treatment plan, and figure presentation. If the authors can meticulously address these points, the revised manuscript would be a strong candidate for publication.