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# Unusual presentation of lower right second molar: A case report

Majed Mansour Alsuwaida

## ABSTRACT

**Introduction:** Dental anomalies such as fusion and gemination are rare but clinically significant conditions that can complicate diagnosis and treatment. This report presents a unique case involving the lower right second molar in a young adult male, exploring the diagnostic challenges and therapeutic implications.

**Case Report:** A 20-year-old male patient presented for a routine dental check-up during which an unusual morphology of the lower right second molar was observed. Radiographic analysis suggested a dental anomaly, with differential diagnoses including fusion and gemination. The clinical presentation, radiographic findings, and subsequent management are discussed in detail.

**Conclusion:** Accurate diagnosis of dental anomalies is crucial for effective treatment planning and management. This case underscores the importance of detailed clinical and radiographic evaluation in identifying and differentiating between dental conditions like fusion and gemination.

**Keywords:** Dental anomalies, Double tooth, Fusion, Gemination

How to cite this article

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## INTRODUCTION

Dental anomalies such as fusion and gemination are developmental disturbances that occur during odontogenesis, affecting the morphology, size, and number of teeth. *Fusion* typically involves the union of two distinct tooth buds, which can result in a single large tooth with variable root canal morphology. Depending on the specific teeth involved, this could result in multiple canals. In contrast, *gemination* occurs when a single tooth bud partially divides, resulting in a tooth with a bifid crown and a single root, although the root and canal anatomy may vary, especially in posterior teeth. These anomalies are rare, with a prevalence of approximately 0.1% to 0.5% in the permanent dentition, and can pose significant clinical challenges, particularly in terms of diagnosis and treatment [1].

### Objective

This case report describes an unusual presentation of the lower right second molar in a 20-year-old male, focusing on the diagnostic process, differential diagnosis, and management implications.

## CASE REPORT

A 20-year-old male presented for a routine dental examination, during which an unusual morphology of the lower right second molar (tooth #47) was observed. The patient is of Middle Eastern descent, with no reported systemic diseases, allergies, or history of childhood medications.

Clinically, the tooth appeared to have separated crowns, which were larger than the corresponding molars with no associated symptoms (Figure 1). A periapical radiograph revealed a tooth with three roots, two crowns sharing a pulp chamber, and a single root canal, suggesting the presence of a dental anomaly (Figure 2) [2].

Figure 1: Clinical photograph shows separated crowns which are larger than their counterparts.

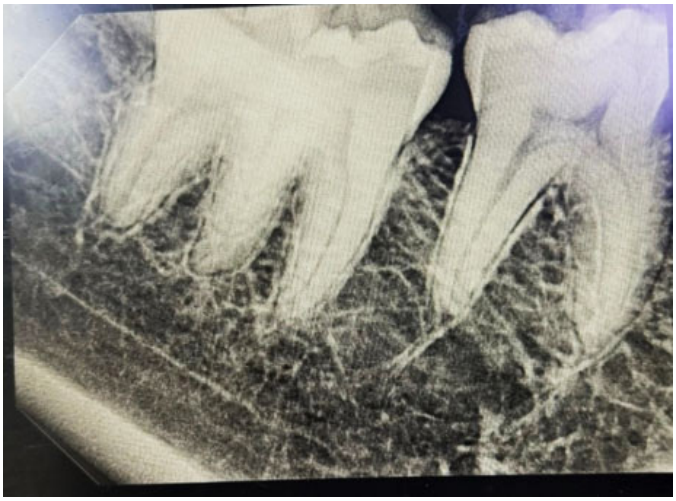

Figure 2: Periapical radiograph shows tooth with three roots, two crowns sharing a pulp chamber and one root canal.

The differential diagnosis included *gemination*, characterized by partial division of a single tooth bud resulting in a bifid crown with a single root, and *fusion*, typically involving two separate tooth buds joining with multiple roots and canals. Given the asymptomatic presentation and lack of associated pathology, immediate treatment was not recommended, but the patient was advised to undergo regular monitoring to prevent potential complications.

## Management and Follow-Up

Given the absence of symptoms and lack of associated pathology, no immediate intervention was necessary. The patient was counseled on maintaining good oral hygiene and advised to return for regular checkups to monitor the condition.

As part of the management plan, the application of pit and fissure sealants was recommended, considering the depth of the fissures observed in the clinical photographs. Sealants could help prevent the development of dental caries in the future.

The patient was also informed about potential future complications, such as the development of dental caries, periodontal issues, or the need for orthodontic intervention. Monitoring would include radiographic evaluation to track any changes in the anomaly [3, 4].

# DISCUSSION

Gemination and fusion are relatively rare in the permanent dentition, with a higher incidence in primary teeth. Gemination is more commonly observed in anterior teeth, especially in the maxillary arch, while fusion is more prevalent in the mandibular arch [5]. The occurrence of these anomalies in posterior teeth, particularly in the second molar, is unusual, making this case noteworthy.

Correct diagnosis is essential for effective management. Geminated teeth may pose challenges in endodontic therapy and restorative procedures due to their atypical morphology. Additionally, these anomalies are associated with an increased risk of dental caries and periodontal disease due to the deep grooves and fissures that accompany these conditions.

In this case, despite the absence of symptoms, the anomaly requires monitoring to prevent potential complications. A more advanced imaging modality, such as cone-beam computed tomography (CBCT), could be used in the future to provide a 3D evaluation of the tooth's root structure, especially considering that the periapical film showed limitations in visualizing the exact root morphology.

## Etiopathogenesis

The fusion of tooth buds can occur during the morphodifferentiation stage of tooth development. In this case, it is unlikely that tooth #47 and #48 fused, given their distinct developmental timelines. Tooth #47 typically completes crown formation around the age of 7–8 years and root formation by 14–15 years, while tooth #48 (the wisdom tooth) forms much later, completing root development around the age of 18–25 years [1]. The observed anomaly likely represents an incomplete fusion of another type rather than a fusion between the second and third molars.

# CONCLUSION

This case report emphasizes the importance of accurate diagnosis and careful monitoring of dental anomalies, such as gemination and fusion. Although the patient was asymptomatic, the anomaly could have

significant implications for future dental care. Early identification and appropriate management are essential to prevent potential complications and ensure long-term oral health.

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## Author Contributions

Majed Mansour Alsuwaida – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

## Guarantor of Submission

The corresponding author is the guarantor of submission.

## Source of Support

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## Consent Statement

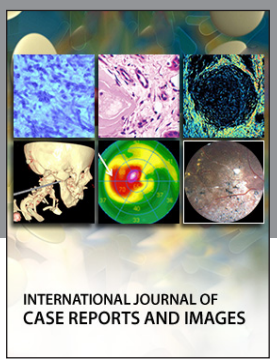
Written informed consent was obtained from the patient for publication of this article.

## Conflict of Interest

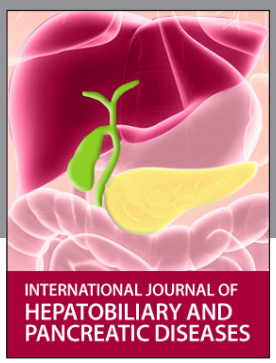
Author declares no conflict of interest.

## Data Availability

All relevant data are within the paper and its Supporting Information files.

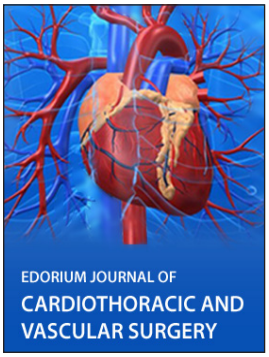




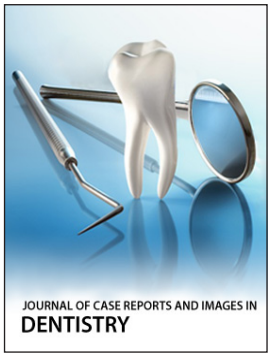




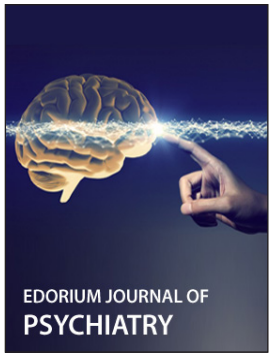




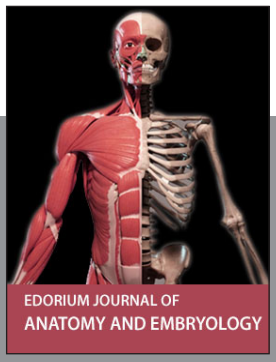




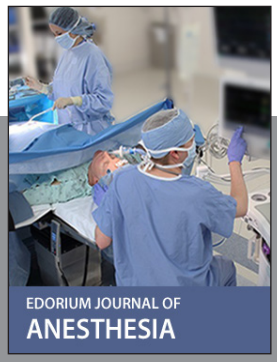








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