

Gemination and Fusion of Mandibular Third Molar: A Case Report

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Abstract: This report presents the case of a 25-year-old female patient without pre-existing medical conditions. She experienced extraction of impacted right inferior third molar, which was fused to a supernumerary fourth molar, sharing its roots, crown and pulp chambers. Upon radiologic imaging and surgical planning, the tooth was extracted under local anesthesia without complications during or after surgery and on 1-year follow-up.

Keywords: Gemination; Fusion; Supernumerary; Paramolar; Third molar.

INTRODUCTION

Germination and fusion are rare yet important potential abnormalities influencing any teeth. It is considered a union of two separate tooth buds at the same stage of development with confluence of dentin, pulp chambers and canals, depending on the amount of development at the time of union. As a result of counting the affected tooth as one, the arch would have one tooth less than normal count. On the other hand, gemination, i.e. attempt of a single tooth germ to divide, results in appearance of a large single tooth with bifid crown and usually a common root and the canal. Conversely, the real number of teeth could be distinguished if the affected tooth is counted as one [3]. Commonly observed in the deciduous dentition, combined gemination and fusion occur in both dentitions with higher frequency in anterior maxillary regions [4, 5]. The overall frequency is approximately 0.5 % for deciduous teeth, 1% for permanent dentition [6], 0.05 % for gemination and 0.05 % for fusion [7]. Appropriate diagnosis can prevent postsurgical complications, and facilitate the endodontic, prosthodontic, periodontal, orthodontic, and clinical management of such cases [1, 2]. This case report describes a large mandibular third molar which could represent either gemination of two cusps or fusion of a normal tooth with a supernumerary (*paramolar*) tooth.

CASE REPORT

The patient, a 25-year-old female in good physical condition, was referred to oral surgery clinic for extraction of right mandibular third molar. She

reported a history of four impacted molars, three of them extracted without anomalies.

Although quite asymptomatic, the extraction of the fourth tooth was postponed due to incomplete formation of its root at the time of extraction of other teeth. In addition to the patient's panoramic radiography as the first clue to diagnosis, radiographs were taken to examine the periapical and occlusal views. Figures 1 and 2 illustrate the panoramic and occlusal views of the right third molar tooth, respectively.



Fig-1: Panoramic View



Fig-2: Occlusal View

Following appropriate radiography and surgical planning, the impacted third molar was extracted under local anesthesia, using Lidocaine 2%, without any complication observed during or after surgery or reported at 1-year follow-up. As seen in Figures 3 and 4, the fused and geminated tooth had two extra cusps on the buccal surface.



Fig-3: Lateral (mesial) view



Fig-4: Occlusal view

CONCLUSION

Gemination and fusion of teeth are rare but clinically important due to the potential side effects and implications for other teeth. Postsurgical complications of such cases can be prevented and the clinical management facilitated by making appropriate and careful diagnosis. This case report serves as evidence in support of this contention.

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