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Mandibular Third Molar Fusion with a Supernumerary Tooth: A Case Report in Saudi Arabia

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Abstract

Supernumerary teeth are known as an anomaly related to the number of teeth where there is an increase in the number of teeth, most common is the lateral maxillary followed by the mandibular first premolar, with prevalence of 97% and 43% respectfully. Most of teeth anomalies there is no difference between males and females, however, in the case of supernumerary teeth it noticed to be more common in males 1.3% and 0.4% in females, and they are known based on their location mesiomolars, paramolars, parapremolars and distomolars. This case report discusses a right lower third molar fusion with supernumerary tooth. Where it has been extracted surgically with follow up after 5 months.

Keywords

Supernumerary tooth; maxillofacial surgery; Surgical Extraction; third molar

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Introduction

Supernumerary teeth are known as an anomaly related to the number of teeth where there is an increase in the number of teeth, most common is the lateral maxillary followed by the mandibular first premolar, with prevalence of 97% and 43% respectfully. Most of teeth anomalies there is no difference between males and females, however, in the case of supernumerary teeth it noticed to be more common in males 1.3% and 0.4% in females, and they are known based on their location mesiomolars, paramolars, parapremolars and distomolars. Fusion and Germination affects the size and shape of teeth, Fusion is known as " Union between two separate tooth buds during dental development involving the crowns and/or the roots" Fusion can be complete (total/true fusion) or incomplete (partial/late fusion), depending on, stage of development. whereas Germination is " Incomplete division of a tooth germ resulting in one root canal. It is clinically characterized by incisal notching on an enlarged crown" Germination also described as double teeth, double formations, joined teeth, fused teeth or dental twinning. Fusion and Germination are rare with prevalence of 0.3%, both are more common in the maxilla and specifically in the incisors Based on the study done [1]. The prevalence of fusion in Saudi Arabia is study was 1.0% [1]. The etiology of teeth is still unknown however some genetic and environmental factors should be considered. This paper will present a case report of Mandibular third and fourth molar fusion with supernumerary tooth.

Case Report

A 28-year-old female patient reported to be medically free with no known allergy was referred to the Oral & Maxillofacial Surgery regarding pain in the lower right quadrant, area that's started around 1 year ago. Upon the Intra-oral clinical examination, it shows impacted lower right, upper right and upper right third molar and partially erupted lower left third molar. OPG (Figure 1) was ordered it reveals Mesio-angular mandibular right molar, Bucco-angular upper maxillary third molar, Disto-angular upper maxillary third molar and vertical left mandibular third molar. There is a proximity of the mandibular right third molar to the inferior alveolar nerve canal (IANC), CBCT (Figure 2) was requested to assess and establish the tooth anomaly and its relationship to the nerve canal, CBCT shows Fusion in the lower mandibular third molar with supernumerary tooth. The patient was provided all treatment option with possible risk and complication, and she chose to undergo extraction of all third molars under GA Consent was signed, the patient was brought to sterile operating room and anesthesia was induced using nasal intubation, intraoral and extraoral and 2% chlorhexidine. then she was draped in universal fashion, local anesthesia using Lidocaine 1:100000 epinephrine total of 7.8 ml for inferior nerve block, lingual, long buccal, greater palatine nerve block and infiltration. Full thickness envelope flap was raised with distal releasing incision, buccal bone guttering using (straight fissure burr number.56) followed by vertical crown cut then tooth was split using Coupland elevator and delivered in two complete separate pieces (Figure 4 A.B). dental Follicle was removed and irrigation of 500 ml, the site with Normal Saline. A total of four simple interrupted suture with 4.0 Vicryl suture was used for closure (Figure 5). The patient has been following up regularly weekly after the extraction during the first month. Showing no paresthesia, history of infection or limited mouth opening. Nonetheless, after three months an orthopantomogram has been taken showing excellent bone remodeling (Figure 6).



Figure 1: An orthopantomogram showing right lower mandibular third molar fusion with supernumerary tooth.

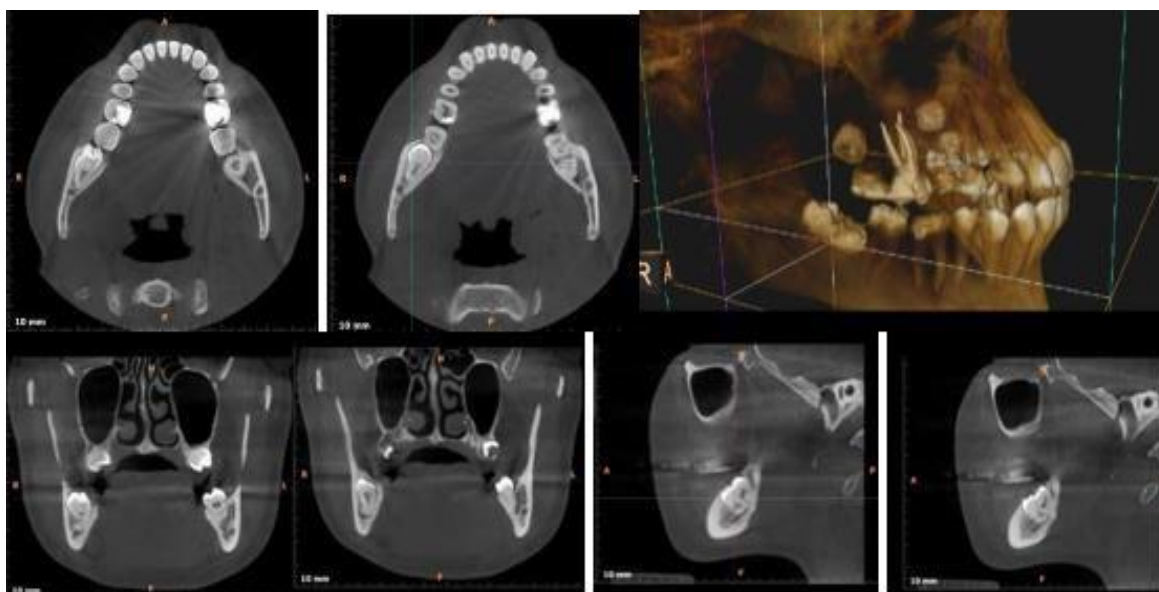


Figure 2: CBCT. Showing axial, Coronal, Sagittal and Dimensional View.



Figure 3A: Preoperative Intraoral photo of the right lower third molar before exposure.

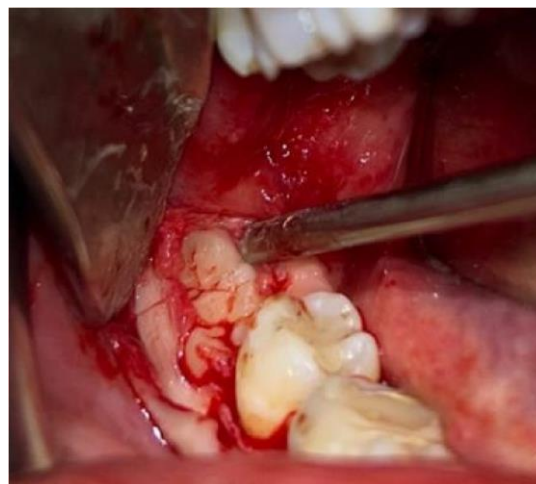


Figure 3B: Intraoperative photo after exposure and Subperiosteal dissection.

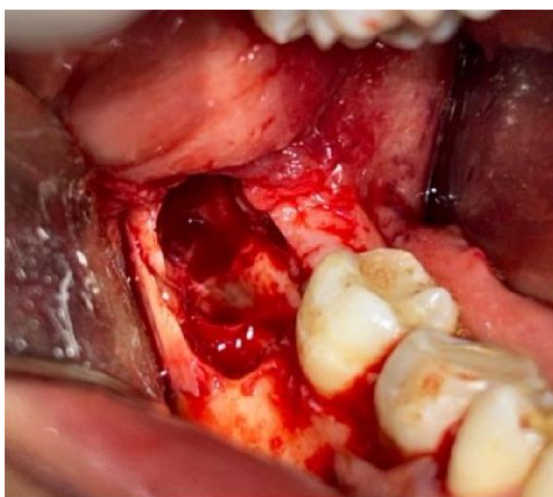


Figure 4A: After resection and complete delivery of the Tooth (Right mandibular third molar with Supernumerary tooth).



Figure 4B: After irrigation and primary Closure with vicryl rapide 4-0.

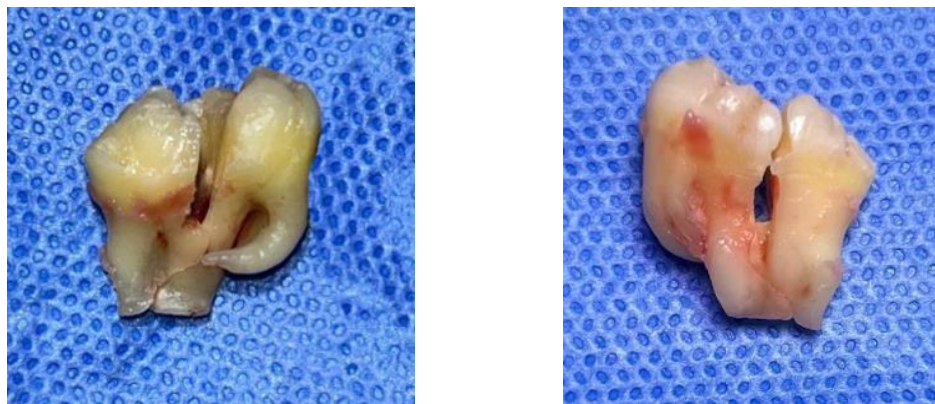


Figure 5.0. A. B: gross Specimen of the fused right mandibular third molar after vertical sectioning A. Buccal view B. Lingua View.



Figure 6: Postoperative Orthopantomogram after three months.

Discussion

Fusion in the posterior of the mandibular with supernumerary tooth is rare as mentioned above, and their etiology is not yet understood. Significant practical and aesthetic issues are brought about by dental abnormalities in both jaws. As a result, it is crucial to conduct a detailed analysis of the variables influencing their development. Dental abnormalities have been documented to arise due to certain genetic factors. Furthermore, disruptions caused by tooth development can result in differences in the quantity of teeth (supernumerary teeth), their size and form, and the location of the tooth bud, all of which can have an impact on the deciduous and permanent dentition of both jaws [2]. Nonetheless, other authors speculate that fusion might happen as a result of pressure or strength applied the neighboring teeth's germs during their growth, which causes tissue necrosis. This could result in the production of the enamel organ and the dental papillae of two teeth to produce a single tooth [3]. Incidental finding of any dental anomalies should alert the doctor for the presence or the possibility of existing syndrome [4]. This case presents a rare case of impacted lower third molar fused with fourth molar a supernumerary tooth. Few numbers of reported case were found. A study reported by Ferreira-Junior et.al [3] they emphasized the importance of using assessment and diagnostic tools such as CBCT for a proper treatment plan. Agreed

regarding the of significant of three-dimensional dental imaging and multidisciplinary approach [5]. In addition, further discussed the fusion in the permanent teeth is far rarer when compared to the deciduous teeth [6]. Similarly, to this case using CBCT as it an important tool for final diagnosis. Moreover, a rare case done reports Paradental cyst associated to third molar fused with supernumerary tooth examined histologically and radiographically, Ultimately, they. also concluded that the precise cause of fusion is still unknown [7].

Conclusion

In conclusion this case is considered rare occurrence and one of the first cases reported of mandibular third and supernumerary fusion in Saudi Arabia. Fusion is still not fully understood and investigation such as CBCT is required to comprehensively. assess and plan the treatment.

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