

A case of inversely fused tooth of impacted maxillary third molar and supernumerary tooth

Eiji Mitate, Shintaro Kawano, Yurie Mikami, Tamotsu Kiyoshima, Tetsuro Ikebe, Seiji Nakamura

ABSTRACT

We report an extremely rare case of an impacted maxillary third molar inversely fused with a supernumerary tooth in a 51-year-old male. The panoramic and dental radiographs show a radiopaque and tooth-like mass of 20×15 mm located in the third maxillary region of the right maxilla. Computed tomography revealed that the tooth-like structure was a union of the impacted maxillary third molar with a inversed supernumerary tooth, creating a fused tooth with a common dental pulp. To our knowledge, only one case of inversely fusion of a maxillary third molar with a supernumerary tooth has been reported.



International Journal of Case Reports and Images (IJCRI)



International Journal of Case Reports and Images (IJCRI) is an international, peer reviewed, monthly, open access, online journal, publishing high-quality, articles in all areas of basic medical sciences and clinical specialties.

Aim of IJCRI is to encourage the publication of new information by providing a platform for reporting of unique, unusual and rare cases which enhance understanding of disease process, its diagnosis, management and clinico-pathologic correlations.

IJCRI publishes Review Articles, Case Series, Case Reports, Case in Images, Clinical Images and Letters to Editor.

Website: www.ijcasereportsandimages.com

CASE REPORT

PEER REVIEWED | OPEN ACCESS

A case of inversely fused tooth of impacted maxillary third molar and supernumerary tooth

Eiji Mitate, Shintaro Kawano, Yurie Mikami, Tamotsu Kiyoshima, Tetsuro Ikebe, Seiji Nakamura

ABSTRACT

We report an extremely rare case of an impacted maxillary third molar inversely fused with a supernumerary tooth in a 51-year-old male. The panoramic and dental radiographs show a radiopaque and tooth-like mass of 20×15 mm located in the third maxillary region of the right maxilla. Computed tomography revealed that the tooth-like structure was a union of the impacted maxillary third molar with a inversed supernumerary tooth, creating a fused tooth with a common dental pulp. To our knowledge, only one case of inversely fusion of a maxillary third molar with a supernumerary tooth has been reported.

Keywords: Anomaly. Impacted third molar, Inversely fused tooth, Maxilla, Supernumerary tooth

Eiji Mitate^{1,2}, Shintaro Kawano², Yurie Mikami², Tamotsu Kiyoshima³, Tetsuro Ikebe¹, Seiji Nakamura²

Affiliations: ¹Section of oral surgery, Department of Oral and Maxillofacial Surgery, Fukuoka Dental College, 2-15-1, Tamura, Sawara-ku, Fukuoka 814-0175, Japan; ²Section of Oral and Maxillofacial Oncology, Division of Maxillofacial Diagnostic and Surgical, Sciences, Faculty of Dental Science, Kyushu University, 3-1-1, Maidashi, Higashi-ku, Fukuoka 812-8582, Japan; ³Laboratory of Oral Pathology, Division of Maxillofacial Diagnostic and Surgical Sciences, Faculty of Dental Science, Kyushu University, 3-1-1, Maidashi, Higashi-ku, Fukuoka 812-8582, Japan.

Corresponding Author: Eiji Mitate, DDS, PhD, Section of oral surgery, Department of Oral and Maxillofacial Surgery, Fukuoka Dental College, 2-15-1, Tamura, Sawara-ku, Fukuoka 814-0175, Japan; Email: mitate@college.fdcnet.ac.jp; mitate@dent.kyushu-u.ac.jp

Received: 11 October 2016
Accepted: 16 November 2016
Published: 01 February 2017

How to cite this article

Mitate E, Kawano S, Mikami Y, Kiyoshima T, Ikebe T, Nakamura S. A case of inversely fused tooth of impacted maxillary third molar and supernumerary tooth. Int J Case Rep Images 2017;8(2):129–132.

Article ID: Z01201702CR10762EM

doi:10.5348/ijcri-201723-CR-10762

INTRODUCTION

Fused teeth result from the union of two or more tooth germs in the developing stage. This is common in the lower anterior, but rare in maxilla, and found in both sexes [1]. They are more commonly found in the deciduous dentition than in the permanent dentition. The reported incidence rate ranges from 0.5–2.5% [1]. But the etiology is still unknown. We report an extremely rare case of an impacted maxillary third molar inversely fused with a supernumerary tooth.

CASE REPORT

A 51-year-old male patient visited oral and maxillofacial surgery of Kyushu University Hospital complaining of slight pain in the right maxillary molar region. Clinical examination revealed slight percussion pain on maxillary tuberosity, but with no sign of infection such as swelling and redness of the gingival mucosa, fistula formation, and pus discharge in the right maxilla. The right maxillary third molar was not erupted. First, we take a panoramic X-ray for overview, and dental X-ray for detail. The panoramic and dental radiographs showed a radiopaque mass (20x15 mm) located in the third

maxillary molar region of the right maxilla (Figure 1A–B). To detect its shape and location, we took computed tomography (CT). Computed tomography scan revealed a tooth-like mass composed of an enamel-like and a dentin-like region, and dental pulp-like cavities near arteria palatina major (Figure 1C–D). Furthermore, the mass consisted of two tooth-like structures that shared a dental pulp cavity. The lesion was partially projecting into the right maxillary sinus (Figure 1D). The clinical diagnosis of the lesion was odontoma or fused tooth and slight pericoronitis may cause slight pain. As he had slight pain, removal of the mass through the canine fossa of maxilla was planned. From the point of view of operation time and procedure, this operation was performed under general anesthesia. The mass was divided into two pieces at removal, because the size of the mass was larger than that of the canine fossa aperture. The extirpated mass is shown in Figure 2.

DISCUSSION

Levitas [2] suggested that dental malformation might be classified as gemination, twinning, concrescence, and fusion. A fused tooth is defined as one in which there is union of dentin from two separate tooth germs during development. On the other hand, occurrence of two teeth with cementum union indicates concrescence. In this case, the mass consisted of two tooth-like structures that shared one dental pulp cavity, as revealed by CT scan. This mass was found to result from an inversely fusion of the third molar with a supernumerary tooth because the mass was located at the site of the third maxillary molar region and since the number of erupted teeth was normal.

With respect to fusion of the third molar and the supernumerary tooth, a number of reports in English scientific literature have described this occurrence primarily in the mandible [3–7], but there is only one report of a fused tooth in the maxilla [8]. On the other hand, we found many reports in Japanese scientific literature. For example, Uchida [8] reviewed 46 cases of supernumerary teeth fused with maxillary or mandibular third molars reported between 1934 and 2008 in the Japanese literature. Of the 46 cases (24 males and 22 females), 12 were in the right maxilla and 10 were in the left maxilla. However, it was unclear whether these included a case of inversely fused tooth. Nakanishi [9] reported that the prevalence of supernumerary tooth is almost 1% in all regions of the dentition, and only 0.063% in the upper molar region. This suggests that the frequency of fusion of the maxillary third molar and supernumerary tooth may be even lower. These facts, considered together, indicate the extreme rarity of this case. Sugibayashi [10] proposed that the causes of supernumerary teeth might be heredity, physical forces, and/or trauma in the tooth germ. Some cases of fusion between maxillary third molar and supernumerary tooth

have been reported in English literature. The association of hereditary, racial, or environmental factors with the pathogenesis of this anomaly may not have been explored in detail.



Figure 1: Radiography and computed tomography (A) Panoramic, (B) Dental radiography showing a radiopaque mass is located in the right maxilla, (C) Transverse plane of computed tomography images. The radiopaque mass is located in the right maxillary sinus. Some cavities can be seen in the mass, and (D) Coronal plane of CT images reveals that the radiopaque mass has pulp-like cavity. (R: right side, L: left side)

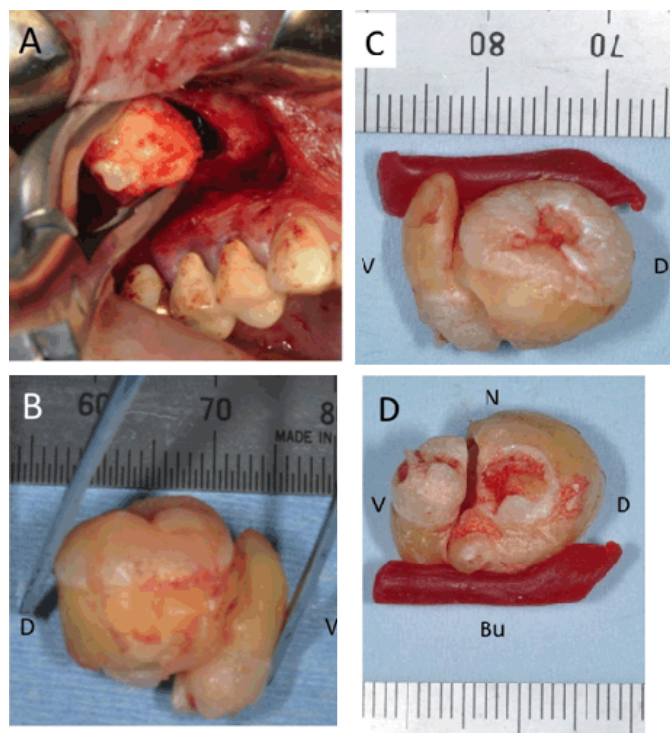


Figure 2: Operation procedure (A) and extracted material (fixed with dental utility wax) (B) Buccal side, (C) Nasal side, (D) Caudal side Bu: buccal side, N: nasal side, V: ventral side, D: dorsal side. The mass was 18x12x10 mm with enamel-like region and dentin-like region.

About the treatment, most of the cases were extracted with local anesthesia. These kinds of cases were found after eruption. In this case, fused teeth were fully impacted, and located near arteria palatina major and pterygoid plexus. As we have to remove more carefully, operation under local anesthesia is intolerable.

CONCLUSION

We reported a rare case of inversely fusion of impacted maxillary third molar and supernumerary tooth. In previous reports, the reason may be hereditary, racial, or environmental factors and so on. To remove the fused teeth, we have to take better procedure of removal and anesthesia.

Author Contributions

Eiji Mitate – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Shintaro Kawano – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Yurie Mikami – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Tamotsu Kiyoshima – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Tetsuro Ikebe – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Seiji Nakamura – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

Copyright

© 2017 Eiji Mitate et al. This article is distributed under the terms of Creative Commons Attribution License which permits unrestricted use, distribution and reproduction in any medium provided the original author(s) and original publisher are properly credited. Please see the copyright policy on the journal website for more information.

REFERENCES

1. Hou GL, Tsai CC. Fusion of maxillary third and supernumerary fourth molars. *Aust Dent J* 1989 Jun;34(3):219–22.
2. Levitas TC. Germination Fusion Twinning and Concrescence. *ASDC J Dent Child* 1965;32:93–100.
3. Morris DO. Fusion of mandibular third and supernumerary fourth molars. *Dent Update* 1992 May;19(4):177–8.
4. Conte M, Lombardi P, Linfant J. A supernumerary tooth fused to the distal surface of a mandibular third molar. *J N J Dent Assoc* 2002 Winter-Spring;73(1–2):8–9.
5. Goho CD Jr. Mandibular third molar and supernumerary molar fusion. *Va Dent J* 1988 Oct-Dec;65(4):26–7.
6. Ozcan G, Sekerci AE, Soyulu E, Nazlim S, Amuk M, Avci F. Role of cone-beam computed tomography in the evaluation of a paradental cyst related to the fusion of a wisdom tooth with a paramolar: A rare case report. *Imaging Sci Dent* 2016 Mar;46(1):57–62.
7. Abrams RA, Nelson DL. Fusion of a third molar to a supernumerary tooth with an associated dentigerous cyst. *Aust Dent J* 1979 Jun;24(3):141–2.
8. Uchida K, Kuroiwa H, Uchiyama M, et al. A case of fusion of the supernumerary teeth in the right maxilla and the third molar. *Matsumoto Shigaku* 2010;36:134–8.
9. Nakanishi H, Nomura J, Yanase S, et al. A case of fused tooth consisted of the maxillary third molar and supernumerary tooth with review of the Japanese literature. *Jpn J Oral Diag/Oral Med* 2004;17(2):217–20.
10. Sugibayashi Y, Inoue K, Yamazaki Y, Arai T, Sato T. Fusion of maxillary third and supernumerary fourth molars: A histological analysis. *Tsurumi Univ Dent J* 2003;29(2):201–8.

Access full text article on
other devices



Access PDF of article on
other devices



Edorium Journals: An introduction

Edorium Journals Team

About Edorium Journals

Edorium Journals is a publisher of high-quality, open access, international scholarly journals covering subjects in basic sciences and clinical specialties and subspecialties.

Invitation for article submission

We sincerely invite you to submit your valuable research for publication to Edorium Journals.

But why should you publish with Edorium Journals?

In less than 10 words - we give you what no one does.

Vision of being the best

We have the vision of making our journals the best and the most authoritative journals in their respective specialties. We are working towards this goal every day of every week of every month of every year.

Exceptional services

We care for you, your work and your time. Our efficient, personalized and courteous services are a testimony to this.

Editorial Review

All manuscripts submitted to Edorium Journals undergo pre-processing review, first editorial review, peer review, second editorial review and finally third editorial review.

Peer Review

All manuscripts submitted to Edorium Journals undergo anonymous, double-blind, external peer review.

Early View version

Early View version of your manuscript will be published in the journal within 72 hours of final acceptance.

Manuscript status

From submission to publication of your article you will get regular updates (minimum six times) about status of your manuscripts directly in your email.

Our Commitment

Six weeks

You will get first decision on your manuscript within six weeks (42 days) of submission. If we fail to honor this by even one day, we will publish your manuscript free of charge.*

Four weeks

After we receive page proofs, your manuscript will be published in the journal within four weeks (31 days). If we fail to honor this by even one day, we will publish your manuscript free of charge and refund you the full article publication charges you paid for your manuscript.*

Favored Author program

One email is all it takes to become our favored author. You will not only get fee waivers but also get information and insights about scholarly publishing.

Institutional Membership program

Join our Institutional Memberships program and help scholars from your institute make their research accessible to all and save thousands of dollars in fees make their research accessible to all.

Our presence

We have some of the best designed publication formats. Our websites are very user friendly and enable you to do your work very easily with no hassle.

Something more...

We request you to have a look at our website to know more about us and our services.

* Terms and condition apply. Please see Edorium Journals website for more information.

We welcome you to interact with us, share with us, join us and of course publish with us.



Edorium Journals: On Web



Browse Journals

CONNECT WITH US

