

World Journal of *Clinical Cases*

World J Clin Cases 2022 October 6; 10(28): 9970-10390



Contents

Thrice Monthly Volume 10 Number 28 October 6, 2022

REVIEW

- 9970 COVID-19 and the heart

Xanthopoulos A, Bourazana A, Giamouzis G, Skoularigki E, Dimos A, Zagouras A, Papamichalis M, Leventis I, Magouliotis DE, Triposkiadis F, Skoularigis J

- 9985 Role of short chain fatty acids in gut health and possible therapeutic approaches in inflammatory bowel diseases

Caetano MAF, Castelucci P

MINIREVIEWS

- 10004 Review of the pharmacological effects of astragaloside IV and its autophagic mechanism in association with inflammation

Yang Y, Hong M, Lian WW, Chen Z

ORIGINAL ARTICLE

Clinical and Translational Research

- 10017 Effects of targeted-edited oncogenic insulin-like growth factor-1 receptor with specific-sgRNA on biological behaviors of HepG2 cells

Yao M, Cai Y, Wu ZJ, Zhou P, Sai WL, Wang DF, Wang L, Yao DF

Retrospective Study

- 10031 Analysis of the successful clinical treatment of 140 patients with parathyroid adenoma: A retrospective study

Peng ZX, Qin Y, Bai J, Yin JS, Wei BJ

- 10042 Efficacy of digital breast tomosynthesis combined with magnetic resonance imaging in the diagnosis of early breast cancer

Ren Y, Zhang J, Zhang JD, Xu JZ

- 10053 Prevention and management of adverse events following COVID-19 vaccination using traditional Korean medicine: An online survey of public health doctors

Kang B, Chu H, Youn BY, Leem J

- 10066 Clinical outcomes of targeted therapies in elderly patients aged ≥ 80 years with metastatic colorectal cancer

Jang HR, Lee HY, Song SY, Lim KH

- 10077 Endovascular treatment vs drug therapy alone in patients with mild ischemic stroke and large infarct cores

Kou WH, Wang XQ, Yang JS, Qiao N, Nie XH, Yu AM, Song AX, Xue Q

Clinical Trials Study

- 10085** One hundred and ninety-two weeks treatment of entecavir maleate for Chinese chronic hepatitis B predominantly genotyped B or C

Xu JH, Wang S, Zhang DZ, Yu YY, Si CW, Zeng Z, Xu ZN, Li J, Mao Q, Tang H, Sheng JF, Chen XY, Ning Q, Shi GF, Xie Q, Zhang XQ, Dai J

Observational Study

- 10097** Dementia-related contact experience, attitudes, and the level of knowledge in medical vocational college students

Liu DM, Yan L, Wang L, Lin HH, Jiang XY

SYSTEMATIC REVIEWS

- 10109** Link between COVID-19 vaccines and myocardial infarction

Zafar U, Zafar H, Ahmed MS, Khattak M

CASE REPORT

- 10120** Successful treatment of disseminated nocardiosis diagnosed by metagenomic next-generation sequencing: A case report and review of literature

Li T, Chen YX, Lin JJ, Lin WX, Zhang WZ, Dong HM, Cai SX, Meng Y

- 10130** Multiple primary malignancies – hepatocellular carcinoma combined with splenic lymphoma: A case report

Wu FZ, Chen XX, Chen WY, Wu QH, Mao JT, Zhao ZW

- 10136** Metastatic multifocal melanoma of multiple organ systems: A case report

Maksimaityte V, Reivytyte R, Milaknyte G, Mickys U, Razanskiene G, Stundys D, Kazenaite E, Valantinas J, Stundiene I

- 10146** Cavernous hemangioma of the ileum in a young man: A case report and review of literature

Yao L, Li LW, Yu B, Meng XD, Liu SQ, Xie LH, Wei RF, Liang J, Ruan HQ, Zou J, Huang JA

- 10155** Successful management of a breastfeeding mother with severe eczema of the nipple beginning from puberty: A case report

Li R, Zhang LX, Tian C, Ma LK, Li Y

- 10162** Short benign ileocolonic anastomotic strictures - management with bi-flanged metal stents: Six case reports and review of literature

Kasapidis P, Mavrogenis G, Mandrekas D, Bazerbachi F

- 10172** Simultaneous bilateral floating knee: A case report

Wu CM, Liao HE, Lan SJ

- 10180** Chemotherapy, transarterial chemoembolization, and nephrectomy combined treated one giant renal cell carcinoma (T3aN1M1) associated with Xp11.2/TFE3: A case report

Wang P, Zhang X, Shao SH, Wu F, Du FZ, Zhang JF, Zuo ZW, Jiang R

- 10186** Tislelizumab-related enteritis successfully treated with adalimumab: A case report

Chen N, Qian MJ, Zhang RH, Gao QQ, He CC, Yao YK, Zhou JY, Zhou H

- 10193** Treatment of refractory/relapsed extranodal NK/T cell lymphoma with decitabine plus anti-PD-1: A case report
Li LJ, Zhang JY
- 10201** Clinical analysis of pipeline dredging agent poisoning: A case report
Li YQ, Yu GC, Shi LK, Zhao LW, Wen ZX, Kan BT, Jian XD
- 10208** Follicular lymphoma with cardiac involvement in a 90-year-old patient: A case report
Sun YX, Wang J, Zhu JH, Yuan W, Wu L
- 10214** Twin reversed arterial perfusion sequence-a rare and dangerous complication form of monochorionic twins: A case report
Anh ND, Thu Ha NT, Sim NT, Toan NK, Thuong PTH, Duc NM
- 10220** Potential otogenic complications caused by cholesteatoma of the contralateral ear in patients with otogenic abscess secondary to middle ear cholesteatoma of one ear: A case report
Zhang L, Niu X, Zhang K, He T, Sun Y
- 10227** Myeloid sarcoma with ulnar nerve entrapment: A case report
Li DP, Liu CZ, Jeremy M, Li X, Wang JC, Nath Varma S, Gai TT, Tian WQ, Zou Q, Wei YM, Wang HY, Long CJ, Zhou Y
- 10236** Alpha-fetoprotein-producing hepatoid adenocarcinoma of the lung responsive to sorafenib after multiline treatment: A case report
Xu SZ, Zhang XC, Jiang Q, Chen M, He MY, Shen P
- 10244** Acute mesenteric ischemia due to percutaneous coronary intervention: A case report
Ding P, Zhou Y, Long KL, Zhang S, Gao PY
- 10252** Persistent diarrhea with petechial rash - unusual pattern of light chain amyloidosis deposition on skin and gastrointestinal biopsies: A case report
Bilton SE, Shah N, Dougherty D, Simpson S, Holliday A, Sahebjam F, Grider DJ
- 10260** Solitary splenic tuberculosis: A case report
Guo HW, Liu XQ, Cheng YL
- 10266** Coronary artery aneurysms caused by Kawasaki disease in an adult: A case report and literature review
He Y, Ji H, Xie JC, Zhou L
- 10273** Double filtration plasmapheresis for pregnancy with hyperlipidemia in glycogen storage disease type Ia: A case report
Wang J, Zhao Y, Chang P, Liu B, Yao R
- 10279** Treatment of primary tracheal schwannoma with endoscopic resection: A case report
Shen YS, Tian XD, Pan Y, Li H
- 10286** Concrescence of maxillary second molar and impacted third molar: A case report
Su J, Shao LM, Wang LC, He LJ, Pu YL, Li YB, Zhang WY

- 10293** Rare leptin in non-alcoholic fatty liver cirrhosis: A case report
Nong YB, Huang HN, Huang JJ, Du YQ, Song WX, Mao DW, Zhong YX, Zhu RH, Xiao XY, Zhong RX
- 10301** One-stage resection of four genotypes of bilateral multiple primary lung adenocarcinoma: A case report
Zhang DY, Liu J, Zhang Y, Ye JY, Hu S, Zhang WX, Yu DL, Wei YP
- 10310** Ectopic pregnancy and failed oocyte retrieval during *in vitro* fertilization stimulation: Two case reports
Zhou WJ, Xu BF, Niu ZH
- 10317** Malignant peritoneal mesothelioma with massive ascites as the first symptom: A case report
Huang X, Hong Y, Xie SY, Liao HL, Huang HM, Liu JH, Long WJ
- 10326** Subperiosteal orbital hematoma concomitant with abscess in a patient with sinusitis: A case report
Hu XH, Zhang C, Dong YK, Cong TC
- 10332** Postpartum posterior reversible encephalopathy syndrome secondary to preeclampsia and cerebrospinal fluid leakage: A case report and literature review
Wang Y, Zhang Q
- 10339** Sudden extramedullary and extranodal Philadelphia-positive anaplastic large-cell lymphoma transformation during imatinib treatment for CML: A case report
Wu Q, Kang Y, Xu J, Ye WC, Li ZJ, He WF, Song Y, Wang QM, Tang AP, Zhou T
- 10346** Relationship of familial cytochrome P450 4V2 gene mutation with liver cirrhosis: A case report and review of the literature
Jiang JL, Qian JF, Xiao DH, Liu X, Zhu F, Wang J, Xing ZX, Xu DL, Xue Y, He YH
- 10358** COVID-19-associated disseminated mucormycosis: An autopsy case report
Kyuno D, Kubo T, Tsujiwaki M, Sugita S, Hosaka M, Ito H, Harada K, Takasawa A, Kubota Y, Takasawa K, Ono Y, Magara K, Narimatsu E, Hasegawa T, Osanai M
- 10366** Thalidomide combined with endoscopy in the treatment of Cronkhite-Canada syndrome: A case report
Rong JM, Shi ML, Niu JK, Luo J, Miao YL
- 10375** Thoracolumbar surgery for degenerative spine diseases complicated with tethered cord syndrome: A case report
Wang YT, Mu GZ, Sun HL

LETTER TO THE EDITOR

- 10384** Are pregnancy-associated hypertensive disorders so sweet?
Thomopoulos C, Ilias I
- 10387** Tumor invasion front in oral squamous cell carcinoma
Cuevas-González JC, Cuevas-González MV, Espinosa-Cristobal LF, Donohue Cornejo A

ABOUT COVER

Editorial Board Member of *World Journal of Clinical Cases*, Kaleem Ullah, FCPS, MBBS, Assistant Professor, Solid Organ Transplantation and Hepatobiliary Surgery, Pir Abdul Qadir Shah Jeelani Institute of Medical Sciences, Gambat 66070, Sindh, Pakistan. drkaleempk@gmail.com

AIMS AND SCOPE

The primary aim of *World Journal of Clinical Cases* (WJCC, *World J Clin Cases*) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING

The WJCC is now abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Journal Citation Reports/Science Edition, Current Contents®/Clinical Medicine, PubMed, PubMed Central, Scopus, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2022 Edition of Journal Citation Reports® cites the 2021 impact factor (IF) for WJCC as 1.534; IF without journal self cites: 1.491; 5-year IF: 1.599; Journal Citation Indicator: 0.28; Ranking: 135 among 172 journals in medicine, general and internal; and Quartile category: Q4. The WJCC's CiteScore for 2021 is 1.2 and Scopus CiteScore rank 2021: General Medicine is 443/826.

RESPONSIBLE EDITORS FOR THIS ISSUE

Production Editor: *Xu Guo*; Production Department Director: *Xiang Li*; Editorial Office Director: *Jin-Lei Wang*.

NAME OF JOURNAL

World Journal of Clinical Cases

ISSN

ISSN 2307-8960 (online)

LAUNCH DATE

April 16, 2013

FREQUENCY

Thrice Monthly

EDITORS-IN-CHIEF

Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

EDITORIAL BOARD MEMBERS

<https://www.wjgnet.com/2307-8960/editorialboard.htm>

PUBLICATION DATE

October 6, 2022

COPYRIGHT

© 2022 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS

<https://www.wjgnet.com/bpg/gerinfo/204>

GUIDELINES FOR ETHICS DOCUMENTS

<https://www.wjgnet.com/bpg/GerInfo/287>

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH

<https://www.wjgnet.com/bpg/gerinfo/240>

PUBLICATION ETHICS

<https://www.wjgnet.com/bpg/GerInfo/288>

PUBLICATION MISCONDUCT

<https://www.wjgnet.com/bpg/gerinfo/208>

ARTICLE PROCESSING CHARGE

<https://www.wjgnet.com/bpg/gerinfo/242>

STEPS FOR SUBMITTING MANUSCRIPTS

<https://www.wjgnet.com/bpg/GerInfo/239>

ONLINE SUBMISSION

<https://www.f6publishing.com>



Concrescence of maxillary second molar and impacted third molar: A case report

Jun Su, Li-Mei Shao, Lian-Cheng Wang, Li-Jia He, Ya-Liu Pu, Yan-Bo Li, Wen-Yun Zhang

Specialty type: Dentistry, oral surgery and medicine

Provenance and peer review:

Unsolicited article; Externally peer reviewed.

Peer-review model: Single blind

Peer-review report's scientific quality classification

Grade A (Excellent): A
Grade B (Very good): B
Grade C (Good): C
Grade D (Fair): 0
Grade E (Poor): E

P-Reviewer: Isola G, Italy; Memis S, Turkey; Varga ML, Croatia

Received: May 18, 2022

Peer-review started: May 18, 2022

First decision: June 27, 2022

Revised: July 6, 2022

Accepted: August 25, 2022

Article in press: August 25, 2022

Published online: October 6, 2022



Jun Su, Li-Mei Shao, Lian-Cheng Wang, Li-Jia He, Ya-Liu Pu, Yan-Bo Li, Wen-Yun Zhang, Department of Stomatology, 920th Hospital of the Joint Logistics Support Force, Kunming 650032, Yunnan Province, China

Corresponding author: Wen-Yun Zhang, MD, Chief Physician, Department of Stomatology, 920th Hospital of Joint Logistics Support Force, No. 212 Dagan Road, Xishan District, Kunming 650032, Yunnan Province, China. wenyunzh88@126.com

Abstract

BACKGROUND

Morphological anomalies of teeth, including talon cusp, dens evaginatus, gemination, fusion, concrescence, root dilaceration, and taurodontism, always involve changes in the enamel, cementum and dentin. Diagnosing concrescent teeth through routine clinical examination alone is difficult, and most cases of concrescence are found accidentally during extraction. A definite preoperative diagnosis of concrescence would contribute to a better treatment plan and fewer undesirable complications

CASE SUMMARY

A 47-year-old woman who complained of left maxillary first molar loss for half a year presented to our department seeking treatment by dental implant restoration. Panoramic radiography and cone-beam computed tomography (CBCT) showed an unclear boundary between the distal root of the second molar and the mesial root of the third molar. The teeth were extracted under local anesthesia, and a definite diagnosis of concrescence was made by histopathological examination.

CONCLUSION

CBCT is a useful tool for diagnosing and planning the management of tooth concrescence and may be beneficial for reducing unnecessary complications.

Key Words: Concrescence; Impacted tooth; Concentrate growth factor; Maxillary third molar; Tooth anomalies; Cone-beam computed tomography; Case report

©The Author(s) 2022. Published by Baishideng Publishing Group Inc. All rights reserved.

Core Tip: Diagnosing concrescent teeth through routine clinical examination alone is difficult, and most cases of concrescence are found accidentally during extraction. A definite preoperative diagnosis of concrescence would contribute to a better treatment plan and fewer undesirable complications. Herein, we report a case of concrescence in the posterior maxilla involving an impacted third molar and the second molar to facilitate reasonable preoperative examinations and treatments in similar cases.

Citation: Su J, Shao LM, Wang LC, He LJ, Pu YL, Li YB, Zhang WY. Concrescence of maxillary second molar and impacted third molar: A case report. *World J Clin Cases* 2022; 10(28): 10286-10292

URL: <https://www.wjgnet.com/2307-8960/full/v10/i28/10286.htm>

DOI: <https://dx.doi.org/10.12998/wjcc.v10.i28.10286>

INTRODUCTION

Morphological anomalies of teeth, including talon cusp, dens evaginatus, gemination, fusion, concrescence, root dilaceration, and taurodontism, always involve changes in the enamel, cementum and dentin[1]. Among them, concrescence characterized by the fusion of two adjoining teeth merely by cementum, is a rare anomaly, and the few related studies have shown a low prevalence ranging from 0.019% to 0.36%[2-5].

The presence of concrescence presents challenges for surgical, endodontic, orthodontic, and even prosthodontic treatment. However, diagnosing concrescent teeth through routine clinical examination alone is difficult, and most cases of concrescence are found accidentally during extraction. A definite preoperative diagnosis of concrescence would contribute to a better treatment plan and fewer undesirable complications.

Herein, we report a case of concrescence in the posterior maxilla involving an impacted third molar and the second molar to facilitate reasonable preoperative examinations and treatments in similar cases.

CASE PRESENTATION

Chief complaints

A 47-year-old Chinese woman who complained of left maxillary first molar loss for half a year presented to the Department of Stomatology seeking treatment by dental implant restoration.

History of present illness

The patient had undergone left upper posterior tooth root extraction half a year prior, and after that, she could not chew with her left 3 molars.

History of past illness

Had histories of dental treatment and denied the history of systemic diseases.

Personal and family history

Denied personal and family history of systemic diseases.

Physical examination

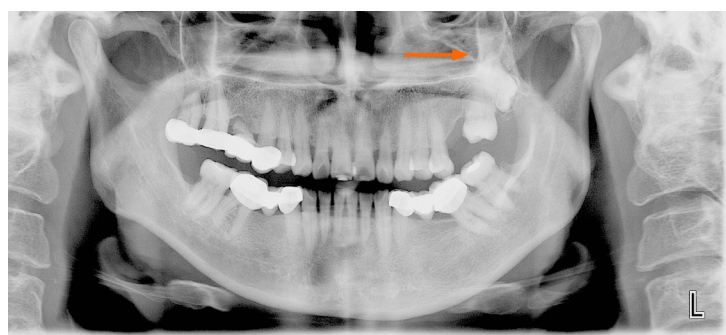
The intraoral examination revealed that the maxillary first molar was lost. The maxillary second molar was mesially tilted, and only a mesial periodontal pocket with a probing depth of approximately 7 mm was observed. No abnormal mobility of the maxillary second molar was observed.

Laboratory examinations

The preoperative routine blood examination revealed no abnormalities.

Imaging examinations

The panoramic film showed angular bone defects located in the mesial aspect of the maxillary second molar. The third molar was completely impacted. The image showed an overlap between the impacted third molar and the second molar, without an obvious dividing line (Figure 1). Cone-beam computed tomography (CBCT) was recommended to determine whether there was fusion of the two molars and the spatial relationship between the root and the maxillary sinus. CBCT showed that the root apex of the third molar was located in the ipsilateral maxillary sinus. The two molars were united along the roots, and the boundary between the distal root of the second molar and the mesial root of the third molar was



DOI: 10.12998/wjcc.v10.i28.10286 Copyright ©The Author(s) 2022.

Figure 1 Panoramic film showing overlapping of the two molars without an obvious dividing line (The arrow in the figure indicates the unclear boundary between the two teeth).

not clear. The two molars showed separate pulp cavity systems (Figure 2).

MULTIDISCIPLINARY EXPERT CONSULTATION

An orthodontist was consulted to determine the risk of moving the concrescent teeth to create adequate space for the expected implant prosthesis. The patient was informed of the unpredicted situation and agreed to undergo extraction of the second and third molars followed by implant restoration three months later.

FINAL DIAGNOSIS

Tooth concrescence.

TREATMENT

Before the operation, 10 mL of venous blood was collected from the patient to prepare concentrated growth factor (CGF). The extraction was performed under local anesthesia with articaine (68 mg of articaine with 17 µg of adrenalin). The resistance to dislocation was high during the operation. A horizontal incision was created in the distal alveolar crest of the second molar, followed by flap and bone removal. Finally, the two molars were extracted completely (Figure 3). After the operation, oro-antral communication was not observed, as indicated by a negative Valsalva maneuver. The alveolar fossa was debrided, filled with CGF, and tightly sutured. Routine antibiotics (amoxicillin capsules, 0.5 g, 3 times a day) were taken after the operation.

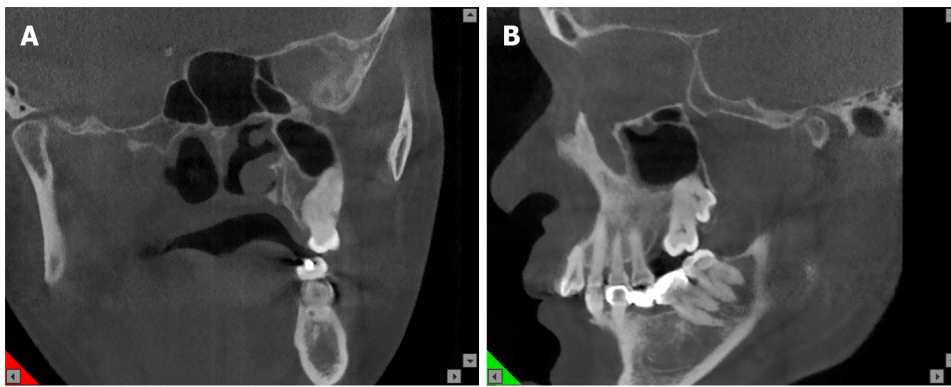
OUTCOME AND FOLLOW-UP

The patient returned one week later for suture removal. The wound healed well, and the patient reported no discomfort. An appointment was made for a follow-up visit three months later.

The teeth were kept for examination, serially sectioned, stained, and observed under a slide scanning system (SQS-1000, TEKSQRAY, Shengqiang Technology Co., Ltd., China). The histological observation revealed that the roots of the second and third molars were united with cementum (Figure 4), indicating concrescence of the two molars.

DISCUSSION

Tooth concrescence is a rare abnormality in which two or more teeth are joined with cementum[6,7]. Concret teeth are rarely observed in the mandible and are more commonly observed in the posterior maxilla[8-11]. This twinning anomaly usually occurs between the second molar and an impacted third molar or between the third molar and a supernumerary molar, in either deciduous or permanent dentition[8,10,12-14]. Concrescence can occur during root formation due to insufficient



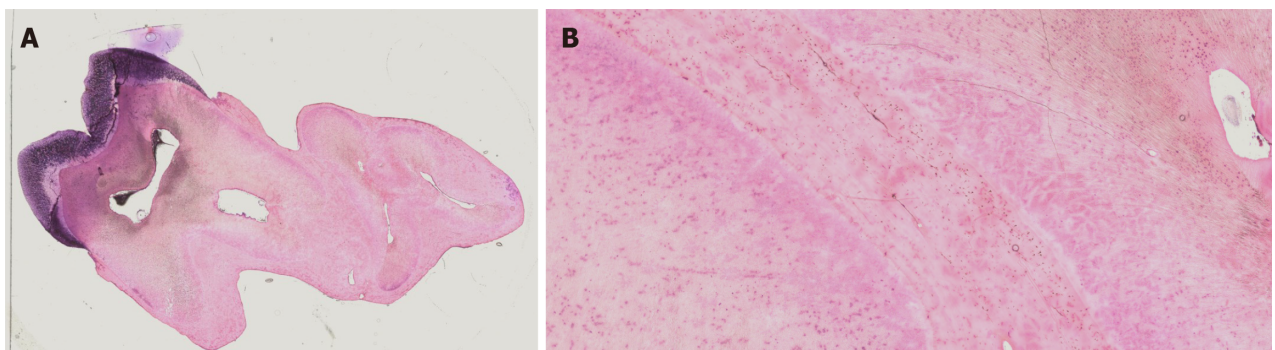
DOI: 10.12998/wjcc.v10.i28.10286 Copyright ©The Author(s) 2022.

Figure 2 Coronal plane. A: Sagittal plane; B: CBCT images. CBCT: Cone-beam computed tomography.



DOI: 10.12998/wjcc.v10.i28.10286 Copyright ©The Author(s) 2022.

Figure 3 Image of extracted concrescent left maxillary second and third molars. A-C: General views of isolated teeth (arrows in B and C indicate the junction of the two teeth).



DOI: 10.12998/wjcc.v10.i28.10286 Copyright ©The Author(s) 2022.

Figure 4 Histological observation of the concrescent teeth (hematoxylin-eosin staining). A: Scale = 1:1. B: Magnification = 4 x.

development space (categorized as true concrescence)[15-17]. In addition, even after complete root formation, concrescence may occur due to interdental bone resorption and cementum deposition (also known as acquired concrescence)[15]. It has been speculated that local chronic inflammatory stimuli caused by caries, occlusal trauma and rapid orthodontic tooth movement are involved in acquired concrescence[7,15,18,19]. In this case, thickened cementum at the junction of the two molars was found on histological examination. The first molar of the patient was extracted half a year prior and led to the mesial incline of the second molar. It is unlikely that the distal root would have converged toward the root of the impacted third molar and induced cementum deposition to such an extent in such a short period of time. In addition, no signs of chronic inflammation were found on clinical examination. Instead, the concrescence was likely caused by space restriction and subsequent cementum deposition between adjacent roots during root development. Indeed, the limited space was also confirmed by the failed eruption of the third molar.

Clinically diagnosing concrescent teeth is difficult even with the aid of routine radiography, especially when impacted molars are involved[20]. The identification of concrescent teeth has been reported to occur mainly during or after an extraction procedure. Thus, preoperative ignorance of this condition can lead to unexpected complications and even legal consequences due to inadequate communication. Panoramic radiography provides only vague information regarding the definite spatial relationship of the involved tooth roots. As in this case, concrescent teeth can easily be misdiagnosed as root overlap on routine radiography, undoubtedly increasing the difficulty and reliability of making a diagnosis and planning treatment[16]. However, CBCT images can capture three-dimensional information and show positional relationships between teeth and important anatomical structures, such as adjacent teeth, alveolar bone, and maxillary sinuses[21]. In this case, we could intuitively identify the configuration of the roots and the relationship between the roots and the maxillary sinuses by CBCT, which was very helpful for determining a feasible treatment plan and minimizing possible complications during extraction. Considering the cost and radiation of CBCT, as well as the findings of this case, we suggest that plain radiography be used for the routine examination of patients and that CBCT be used to solve problems that are difficult to solve based on plain radiography alone.

The differential diagnosis of concrescent teeth is fused teeth, which are characterized by the involvement of dentin fusion. It is difficult to distinguish whether dentine fusion is involved using CBCT, as dentin has a density of mineralization close to that of cementum. Ono *et al*[22] performed postoperative micro-CT to differentiate concrescent teeth from fused teeth, but it seems that performing such a destructive examination before surgery is impractical. In this case, the diagnosis of concrescence was determined by postoperative histological examination. However, it must be realized that the diagnosis of fused teeth is important in cases involving endodontic treatment. As shown in Figure 2, concrescent teeth usually have independent pulp-canal systems, which is an important distinction between concrescent and fused teeth that can be easily identified even on routine radiography[8].

The management of concrescent teeth should be personalized, and various treatments, including extraction, surgical division, endodontic treatment and orthodontic management, have been recommended in reported cases[11,23-25]. If the tooth concrescence does not cause aesthetic problems, functional disturbance, or other undesirable complications, no additional medical management is needed. In this case, surgical division of the concrescent teeth would have been difficult due to the high degree of root union. In addition, considering the estimated bone deficiency for orthodontic movement and the positional relationship between the root of the third molar and the base of the maxillary sinus, it was not feasible to obtain space for a first molar implant by orthodontic traction of the concrescent teeth. Accordingly, the concrescent teeth were extracted. However, the potential impact of the removal of concrescent teeth on masticatory function due to the loss of the second molar must be considered. A definite diagnosis of concrescence and a preoperative conversation can reduce the risk of legal disputes.

Clinically, patients who present with malocclusion or impacted teeth are often treated by orthodontic correction, surgery, or a combination of both, and these patients are mostly children[26,27]. Long-term malocclusion or unilateral chewing may cause associated temporomandibular disorders; additionally, malocclusion and habitual unilateral chewing are very common in adults[28], who are often overlooked. Therefore, clinicians should pay more attention to such conditions during the consultation, especially for adult patients, to provide relevant guidance and treatment.

CONCLUSION

Tooth concrescence is a rare clinical phenomenon that is not easily diagnosed by intraoral examination and routine radiography. Dentists should be aware of the possibility of concrescence when teeth, especially teeth in the posterior maxillary area, appear to be overlapping on imaging. CBCT is a useful tool for diagnosing and planning the management of tooth concrescence and may be beneficial for reducing unnecessary complications.

FOOTNOTES

Author contributions: Su J completed the operation and wrote original draft; Shao LM, Wang LC, He LJ and Pu YL wrote review and edited; Li YB contributed tissue sectioning; Zhang WY contributed conceptualization, supervision, review and editing.

Supported by the Applied Basic Research Program of the 920th Hospital of the Joint Logistics Support Force, No. 2019YGB15.

Informed consent statement: A written informed consent was obtained from the patient for publication of this case report.

Conflict-of-interest statement: The authors have nothing to disclose.

CARE Checklist (2016) statement: The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

Open-Access: This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <https://creativecommons.org/licenses/by-nc/4.0/>

Country/Territory of origin: China

ORCID number: Jun Su 0000-0002-3638-251X; Li-Mei Shao 0000-0003-4307-5857; Lian-Cheng Wang 0000-0003-0653-3150; Li-Jia He 0000-0002-2458-2645; Ya-Liu Pu 0000-0002-7525-481X; Yan-Bo Li 0000-0003-3173-7980; Wen-Yun Zhang 0000-0002-2600-1349.

S-Editor: Wang DM

L-Editor: A

P-Editor: Wang DM

REFERENCES

- 1 Rohrer MD. Clinical outline of oral pathology: Diagnosis and treatment. 3rd ed. Philadelphia: Lea & Febiger, 1992: 112-117
- 2 Goswami M, Bhardwaj S, Grewal N. Prevalence of Shape-related Developmental Dental Anomalies in India: A Retrospective Study. *Int J Clin Pediatr Dent* 2020; **13**: 407-411 [PMID: 33149415 DOI: 10.5005/jp-journals-10005-1785]
- 3 ALHumaid J, Buholayka M, Thapasum A, Alhareky M, Abdelsalam M, Bughsan A. Investigating prevalence of dental anomalies in Eastern Province of Saudi Arabia through digital orthopantomogram. *Saudi J Biol Sci* 2021; **28**: 2900-2906 [PMID: 34025167 DOI: 10.1016/j.sjbs.2021.02.023]
- 4 Guttal KS, Naikmasur VG, Bhargava P, Bathi RJ. Frequency of developmental dental anomalies in the Indian population. *Eur J Dent* 2010; **4**: 263-269 [PMID: 20613914]
- 5 Goutham B, Bhuyan L, Chinnannavar SN, Kundu M, Jha K, Behura SS. Prevalence of Dental Anomalies in Odisha Population: A Panoramic Radiographic Study. *J Contemp Dent Pract* 2017; **18**: 549-553 [PMID: 28713106 DOI: 10.5005/jp-journals-10024-2082]
- 6 Sharma U, Gulati A, Gill NC. Concrecent triplets involving primary anterior teeth. *Contemp Clin Dent* 2013; **4**: 94-96 [PMID: 23853463 DOI: 10.4103/0976-237X.111616]
- 7 Whitaker SB. Oral and maxillofacial pathology. *J Am Dent Assoc* 2000; **131**: 718 [PMID: 10860317 DOI: 10.14219/jada.archive.2000.0245]
- 8 Gunduz K, Sumer M, Sumer AP, Gunhan O. Concrescence of a mandibular third molar and a supernumerary fourth molar: report of a rare case. *Br Dent J* 2006; **200**: 141-142 [PMID: 16474352 DOI: 10.1038/sj.bdj.4813191]
- 9 Syed AZ, Alluri LC, Mallela D, Frazee T. Concrescence: Cone-Beam Computed Tomography Imaging Perspective. *Case Rep Dent* 2016; **2016**: 8597872 [PMID: 27800194 DOI: 10.1155/2016/8597872]
- 10 Arun D. Concrescence of impacted mandibular third molar with a fourth molar. *CODS J Dent* 2007; **48**: 48-49 [DOI: 10.5005/cods-7-1-48]
- 11 Foran D, Komabayashi T, Lin LM. Concrescence of permanent maxillary second and third molars: case report of non-surgical root canal treatment. *J Oral Sci* 2012; **54**: 133-136 [PMID: 22466898 DOI: 10.2334/josnusd.54.133]
- 12 Tapadiya V, Ramanojam S, Gelada K, Sethi S, Oswal N. Concrescence of Erupted Second Molar and Impacted Third Molar: A Rare Case Report. *IOSR J Dent and Med Sci* 2017; **16**: 74-76 [DOI: 10.9790/0853-1604067476]
- 13 Romito LM. Concrescence: report of a rare case. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2004; **97**: 325-327 [PMID: 15024354 DOI: 10.1016/j.tripleo.2003.10.015]
- 14 Singh A, Bhatia HP, Sharma N. Coexistence of fusion and concrescence of primary teeth: in a child with Down syndrome. *Spec Care Dentist* 2017; **37**: 147-149 [PMID: 28140477 DOI: 10.1111/scd.12218]
- 15 Mader CL. Concrescence of teeth: a potential treatment hazard. *Gen Dent* 1984; **32**: 52-55 [PMID: 6586611]
- 16 Shazli N, Almasri M. Concrescence of an Erupted Maxillary Second Molar with an Impacted Third Molar: A Case Report. *SciEP* 2017; **5**: 1-3 [DOI: 10.12691/oral-5-1-1]
- 17 Pindborg JJ. Pathology of the dental hard tissues. 1st ed. Philadelphia: W. B. Saunders Company, 1970: 223-226
- 18 Sanjay S. Textbook of Oral Pathology. 1st ed. India: Jaypee Brothers Medical Publishers, 2006: 211-221
- 19 White SC, Michael J. ORAL RADIOLOGY: Principles and interpretation. 6th ed. Oxford: Mosby Elsevier, 1987: 314-338
- 20 Mohan B. Hypercementosis and concrescence of maxillary second molar with third molar: a case report and review of literature. *Oral Health Dent Manag* 2014; **13**: 558-561 [PMID: 24984682]
- 21 Syed AZ, Sin C, Rios R, Mupparapu M. Incidental occurrence of an unusually large mastoid foramen on cone-beam computed tomography and review of the literature. *Imaging Sci Dent* 2016; **46**: 39-45 [PMID: 27051638 DOI: 10.5624/isd.2016.46.1.39]
- 22 Ono M, Shimizu O, Ueda K, Hashimoto J, Honda K. A case of true concrescence diagnosed with cone-beam CT and in vivo micro-CT. *Oral Radiol* 2010; **26**: 106-109 [DOI: 10.1007/s11282-010-0043-8]

- 23 **Venugopal S**, Smitha BV, Saurabh SP. Paramolar concrescence and periodontitis. *J Indian Soc Periodontol* 2013; **17**: 383-386 [PMID: [24049342](#) DOI: [10.4103/0972-124X.115647](#)]
- 24 **Suter VG**, Reichart PA, Bosshardt DD, Bornstein MM. Atypical hard tissue formation around multiple teeth. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2011; **111**: 138-145 [PMID: [21237432](#) DOI: [10.1016/j.tripleo.2010.09.003](#)]
- 25 **Stanford ND**, Hosni S, Morris T. Orthodontic management of a dental concrescence: a case report. *J Orthod* 2017; **44**: 209-215 [PMID: [28762889](#) DOI: [10.1080/14653125.2017.1357877](#)]
- 26 **Perillo L**, Isola G, Esercizio D, Iovane M, Triolo G, Matarese G. Differences in craniofacial characteristics in Southern Italian children from Naples: a retrospective study by cephalometric analysis. *Eur J Paediatr Dent* 2013; **14**: 195-198 [PMID: [24295003](#)]
- 27 **Cavuoti S**, Matarese G, Isola G, Abdolreza J, Femiano F, Perillo L. Combined orthodontic-surgical management of a transmigrated mandibular canine. *Angle Orthod* 2016; **86**: 681-691 [PMID: [26502299](#) DOI: [10.2319/050615-309.1](#)]
- 28 **Matarese G**, Isola G, Alibrandi A, Lo Gullo A, Bagnato G, Cordasco G, Perillo L. Occlusal and MRI characterizations in systemic sclerosis patients: A prospective study from Southern Italian cohort. *Joint Bone Spine* 2016; **83**: 57-62 [PMID: [26552635](#) DOI: [10.1016/j.jbspin.2015.04.014](#)]



Published by **Baishideng Publishing Group Inc**
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

Telephone: +1-925-3991568

E-mail: bpgoffice@wjgnet.com

Help Desk: <https://www.f6publishing.com/helpdesk>

<https://www.wjgnet.com>

