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## Case Report

# Inflammatory internal carotid aneurysm detected in a patient with benign fibro-osseous lesion in the maxillary sinus: A rare case report



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## ABSTRACT

Occurrences of aneurysm caused by intraoral inflammation or infection are very rare. Osseous dysplasias (ODs), the most common fibro-osseous lesions (FOLs), occur in the jaw. However, osseous lesion very rarely occurs in association with impacted tooth. We present here the case of a 22-year-old female who developed aneurysm in the cavernous region of the internal carotid artery (ICA) because of the infection of the maxillary OD with impacted and semi-impacted teeth. The aneurysm was later confirmed by contrast enhanced magnetic resonance imaging (MRI). The ICA trapping was performed under general anesthesia, and postoperative magnetic resonance angiography (MRA) confirmed disappearance of aneurysm. Approximately 2 months after the surgery, we performed left maxilla tumor excision under general anesthesia; the patient showed satisfactory progress after the excision. Since inflammation/infection of the maxilla may lead to aneurysm as found in this case, we recommend physicians to pay serious attention in such cases to prevent rupture of aneurysm.

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## 1. Introduction

Internal carotid intracranial aneurysms are relatively rare [1]. The aneurysms may be true or pseudo and classified by type, morphology, and location. In particular, orthognathic surgery and dental extraction are thought to cause pseudoaneurysms [2,3]. While Marco de Lucas et al. [2] reported a case of pseudoaneurysm of the facial artery post dental extraction, Avelar et al. [3] reported 18 cases of pseudoaneurysms post orthognathic surgery. However, occurrences of aneurysm due to intraoral inflammation or infection are rare. To the best of our knowledge, there is only one report available for infective pseudoaneurysm of the internal carotid artery (ICA) after peritonsillar abscess [4].

Fibro-osseous lesions (FOLs) are collectively known as fibroproliferative lesions with osseous metaplasia. Osseous dysplasias (ODs), the most common FOLs occurring in jaws, are defined as

idiopathic processes located at the periapical region of the tooth bearing the jaw area, histologically characterized by a replacement of the normal bone by fibrous tissue and metaplastic bone. The OD has also been called as cemento osseous dysplasia (COD). However, according to the new histological classification by WHO in 2005, most of the previous classification of ODs as 'cemento' or 'cemental' are discontinued. These lesions are simply called as OD and classified as periapical OD, focal OD, florid OD, and familial gigantiform cementoma. ODs are generally diagnosed on the basis of the clinical, radiographic and histopathological findings. An osseous lesion occurring association with impacted tooth is very rare [5]. Here we present a case of aneurysm in the cavernous portion of the internal carotid artery (ICA) caused by the infection of the maxillary OD with impacted and semi-impacted teeth. This case report followed the Declaration of Helsinki on medical protocol and ethics. An informed written consent was obtained from the patient for reporting the case.

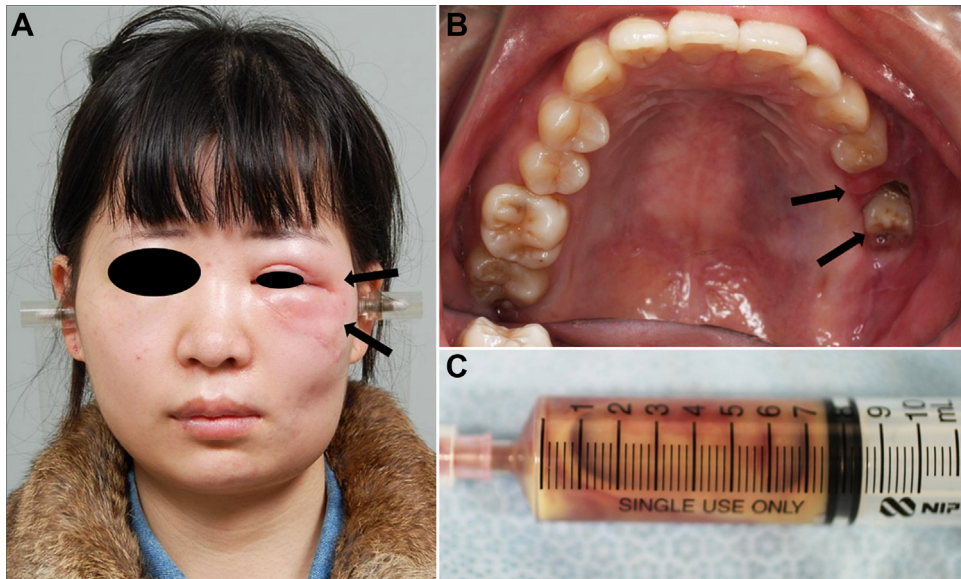
## 2. Case report

A 22-year-old female was referred to the Department of Oral-Maxillofacial Surgery, Dentistry and Orthodontics, The University of Tokyo Hospital, for diagnosis and management of the

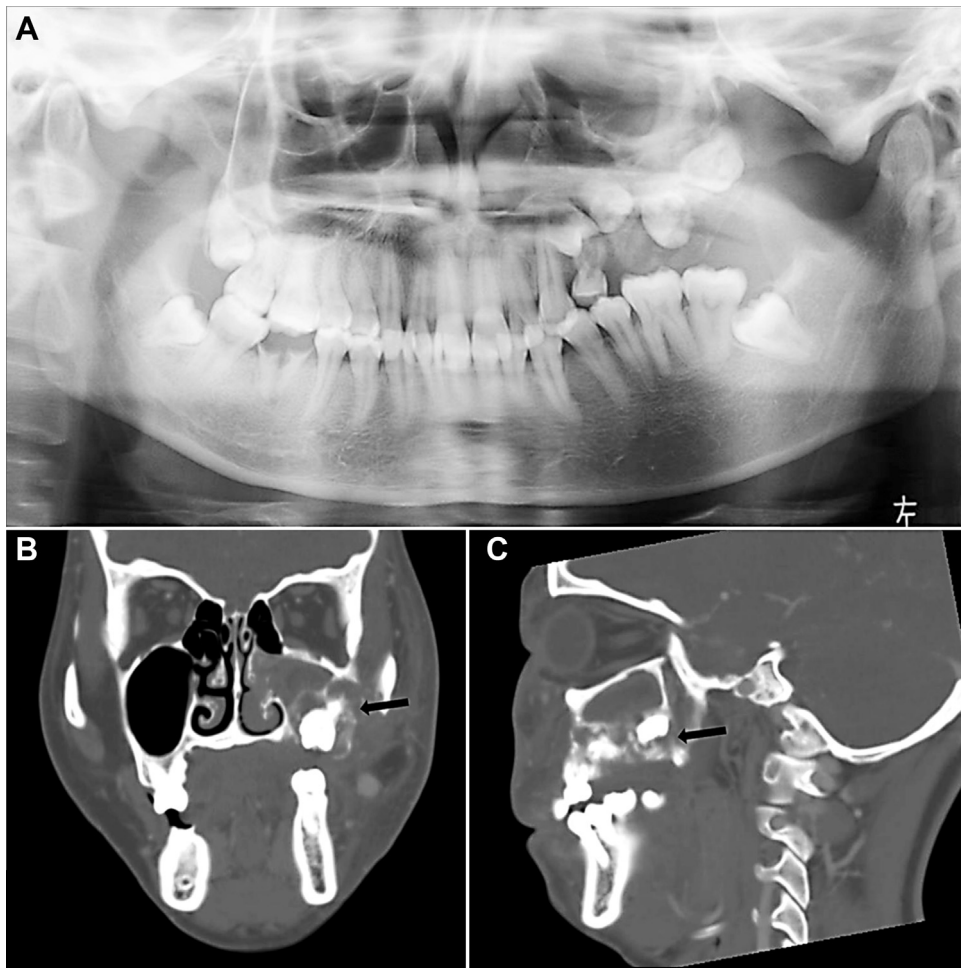
☆ Asian AOMS: Asian Association of Oral and Maxillofacial Surgeons; ASOMP: Asian Society of Oral and Maxillofacial Pathology; JSOP: Japanese Society of Oral Pathology; JSOMS: Japanese Society of Oral and Maxillofacial Surgeons; JSOM: Japanese Society of Oral Medicine; JAMI: Japanese Academy of Maxillofacial Implants.

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**Fig. 1.** Clinical findings. (A) The swelling and redness of the left cheek to the left eyelid, (B) redness in the left maxilla and the semi-impacted tooth, and (C) drainage in the left cheek.



**Fig. 2.** Panoramic radiograph showing. (A) Four impacted tooth contained in the left maxillary sinus; the remaining of the left maxillary first primary molar; a layer of radiolucent area surrounding the impacted tooth; the surrounding radiopaque area is also confirmed. Computed tomography views revealed bone destruction and radiopaque areas which suspected odontoma or benign fibro-osseous lesion of the left maxilla, (B) coronal image and (C) sagittal image.

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