



Infratemporal fossa abscess of dental origin: a rare, severe and misdiagnosed infection

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To the Editor,

The infratemporal fossa (ITF) is an anatomic space of great importance¹. It contains major neurovascular structures and communicates with the orbit and middle cranial fossa. Therefore, an infection in the infratemporal space is a potentially lethal condition².

Infratemporal fossa abscess (IFA) can be misdiagnosed due to its rarity. The primary cause of IFA is an odontogenic infection originating from the mandibular molars.

A 76-year-old man presented with a protruding mass of 3×4 cm in the left preauricular area, which was first noticed by the patient three months prior.(Fig. 1. A, 1. B) Symptoms,

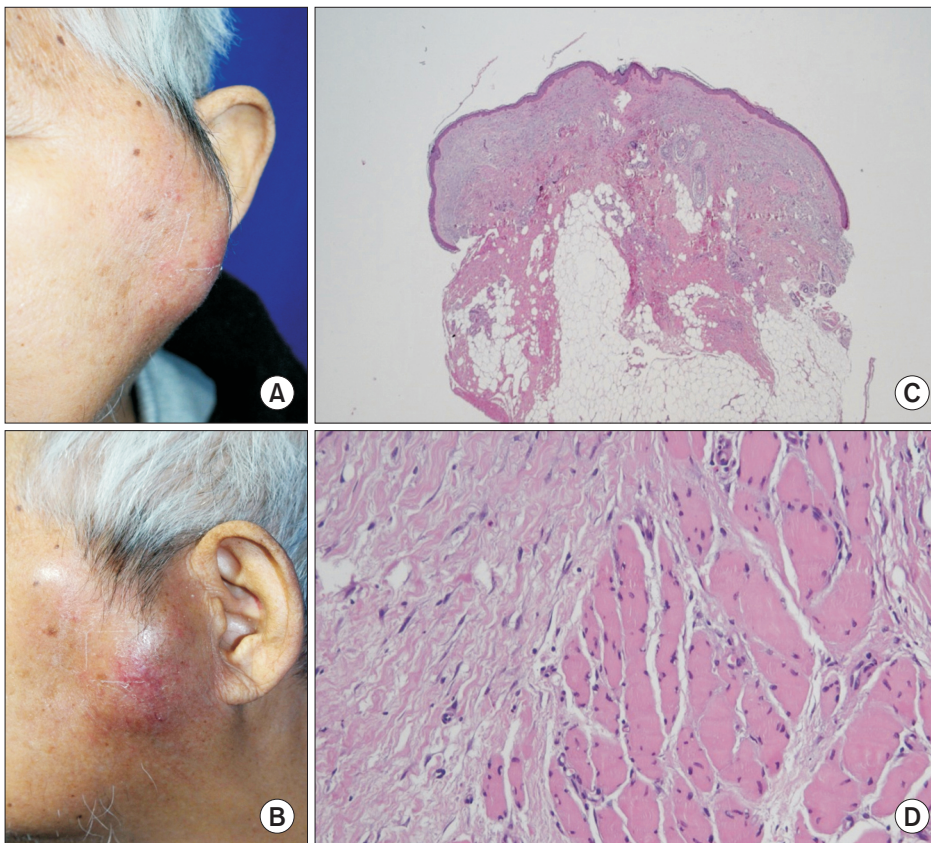


Fig. 1. A. Front view of the patient showing an erythematous, protruding mass on the left side of the face. B. Left lateral view showing significant swelling in the left preauricular region, measuring 3×4 cm. C. The histopathologic findings reveal solar elastosis in the upper dermis and necrotic fat tissue with fibrosis in the subcutaneous fat layer (H&E staining, ×40). D. Chronic inflammation with fibrosis was also observed in the muscle layers (H&E staining, ×40).

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including pain, tenderness, and trismus, were present. He had no history of systemic disease.

An initial physical examination revealed swelling and tenderness on the left side of the face. Cervical lymphadenopathy was absent. Skin biopsy and magnetic resonance imaging (MRI) were performed. The histopathologic findings revealed necrotic fat tissue with fibrosis.(Fig. 1. C, 1. D) No signs of neoplasia were observed on the biopsy. MRI demonstrated massive inflammation of the left pterygoid muscle, left masseter muscle, and in the adjacent soft tissues, which were consistent with the diagnosis of IFA. Osteomyelitis of the body and ramus of the left mandible were also present. (Fig. 2. A-F)

The patient was referred to the department of dental surgery to identify the origin of infection. Digital panoramic radiography

was performed.(Fig. 2. G) There were no canine, premolars, or molars in the left mandible. On further investigation, the patient reported self-extraction of mobile teeth in the left mandible five months prior. He was admitted and prescribed intravenous amoxicillin with clavulanate and metronidazole as part of a four-week antibiotic therapy. At the follow-up examination, the clinical outcome was found to be satisfactory.

Dang et al.³ proposed two mechanisms for IFA of dental origin. The first mechanism involves periosteal break points: infection spreads from the tooth to the mandible or maxilla, through the cortical bone, and further through the periosteum into adjacent fascial spaces. The second mechanism is based on iatrogenicity: multiple needle pricks for anesthesia and/or mandibular nerve block could cause direct microbial con-

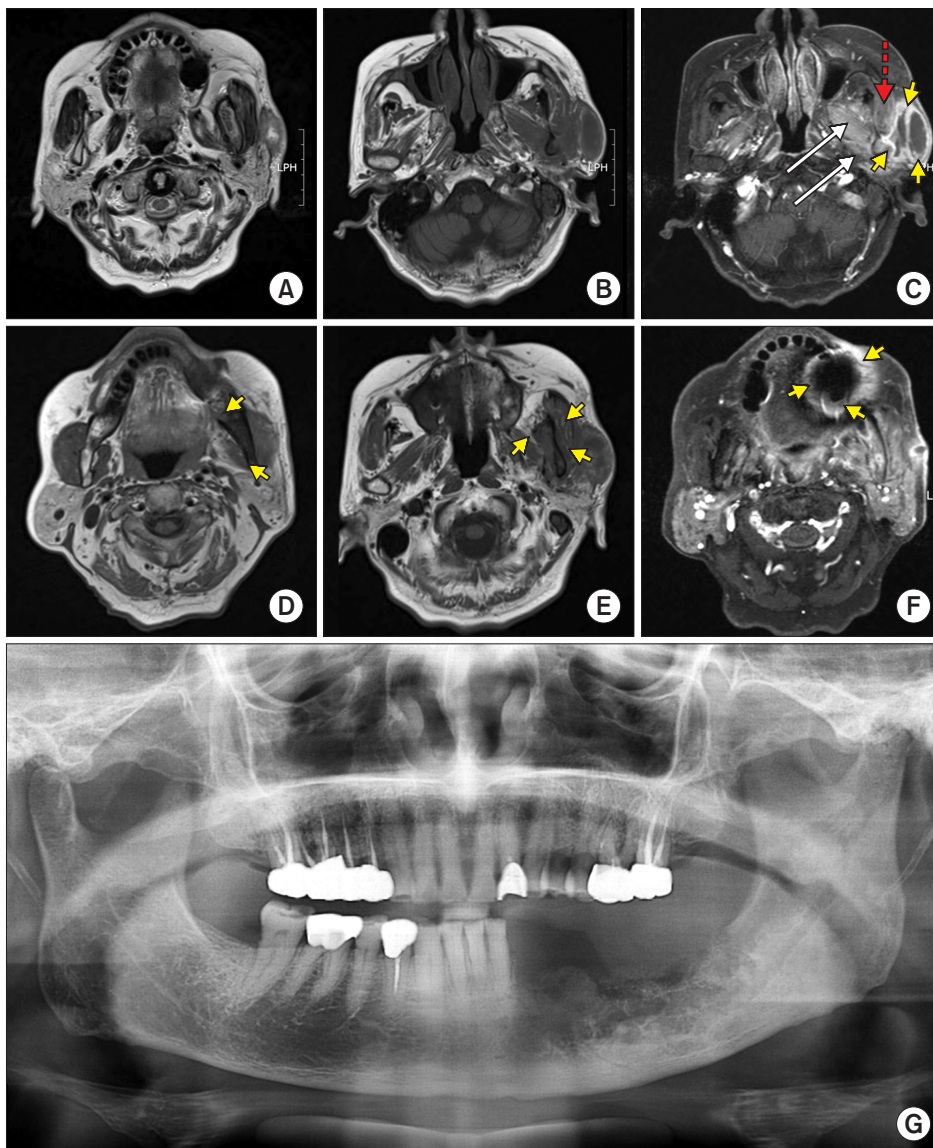


Fig. 2. A, B. Magnetic resonance imaging shows extensive inflammation in the infratemporal fossa and in the adjacent soft tissues. C. The dashed arrow indicates inflammation of the masseter muscle, and the long arrows indicate the pterygoid muscle. Abscess formation with peripheral rim enhancement is observed in the adjacent soft tissues, which is indicated by the short arrows. Osteomyelitis is observed at the ramus (short arrows; D) and the body of the left mandible (short arrows; E). F. Inflammation originating from dental infection is also observed with peripheral enhancement (short arrows). G. Evaluation was performed with digital panoramic radiography. There were no canine, premolars, or molars in the left mandible. A diffuse area of haziness in the left mandible was observed.

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tamination of the ITF.

IFA is rare and its clinical diagnosis tends to be challenging due to its non-specific symptoms. The diagnosis of IFA mainly relies on a high index of suspicion.

Plain radiographs, including panoramic views, may identify the source of infection and soft tissue swelling. Computed tomography or MRI usually yield diagnostic findings; however, it may be difficult to distinguish between an abscess and a tumour⁴. In agreement with most reported cases, microbial culture did not result in isolation of a particular organism. In addition to the polymicrobial nature of odontogenic infections, this observation might be attributed to the use of several antibiotics that were prescribed before the final diagnosis⁵.

IFA has potentially fatal complications. The infection might spread through the pterygoid plexus to the cavernous sinus or through the valveless ophthalmic veins into the orbit, which may result in intracranial and orbital complications. Thus, ensuring minimal treatment time is crucial for the diagnosis and successful management of IFA.

Here, we report a rare case of IFA secondary to odontogenic infection. A thorough medical and dental history, as well as oral, facial, and systemic examination, is required. This information, together with radiographic and histopathologic findings and knowledge of the anatomical structures involved, can aid timely diagnosis and appropriate management of ITF infections.

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Authors' Contributions

M.Y.P. and B.S.K. participated in data collection and wrote the manuscript. M.Y.P., H.S.K., H.C.K., and M.B.K. participated in the study design and performed the statistical analysis. M.Y.P. and B.S.K. participated in the study design and coordination and helped to draft the manuscript. All authors read and approved the final manuscript.

Consent for Publishing Photographs

Written informed consent was obtained from the patients for publication of this letter and accompanying images.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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