

Bacteriological Study of Unilateral Maxillary Sinusitis

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Abstract

Odontogenic maxillary sinusitis is predominantly a unilateral maxillary sinus lesion. On examination, a purulent nasal discharge in the middle meatus that occurs unilaterally can be observed. A cone-beam CT can be used to confirm a unilateral maxillary sinus lesion. In this study, periapical lucency, oroantral fistula, aberration of dental material to the maxillary sinus, and aberration of implant tip to the maxillary sinus revealed by CT were diagnosed as odontogenic maxillary sinusitis. In each reported case, pus was aspirated and aerobic and anaerobic cultures were performed.

Keywords: Odontogenic maxillary sinusitis; *Bacteria*; *F. nucleatum*; Otolaryngology

Introduction

The bacterial culture results showed that 59 (81.9%) of the 72 isolates in 50 cases were obligate anaerobes [1]. The detection rate of *Fusobacterium nucleatum* (*F. nucleatum*), a gram-negative rod, was extremely high at 37.5%. This was followed by *Prevotella* at 25%. Gram-negative rods accounted for 78% of the isolates. Gram-positive coccus, *Parvimonas*, was detected at 22%. Storage of samples in an

Case 2

A 55-year-old female housewife presented with chief complaints of right nasal odour from 3 years prior. The unpleasant odour is especially noticeable when the patient bows or looks down (Figures 2 and 3).

and *M. catarrhalis*, were not detected in odontogenic maxillary sinusitis [2].

Two other reports of odontogenic maxillary sinusitis in Japan had been published. Muroki and Tamai collected samples from the reservoir of extraction sockets using a syringe needle [3]. Of the 100 samples collected, 59.1% were aerobic and 40.9% were anaerobic. Veillonella, a Gram-positive coccus accounted for the largest proportion at 48%. Peptostreptococcus was also detected. The Gram-negative rods were Bacteroides and accounted for 2%. Interestingly, there were no Fusobacterium.

Recently, Kaneko reported on 99 cases of dental infections [4]. Among the dental infections, odontogenic maxillary sinusitis reported the lowest detection rate of obligate anaerobes and the highest number of facultative anaerobes. The TMigate thpor 1na1n0 1na1n01na Rete M M

Figure 2: Post nasal drip in case-2 study.

Detected bacteria: *F. nucleatum*, *Prevotella buccae*, and *Prevotella intermedius*

Gram stain: Gram-negative spindle-shaped rod confirmed.

Cone beam CT: The right maxillary sinus was diffusely filled with soft tissue. Odontogenic maxillary sinusitis spilling over from marginal gingivitis was diagnosed.

Treatment: CVA/AMP+AMPC twice daily for 7 days. Subsequently, the nasal discharge and unpleasant odor disappeared.

Results and Discussion

Bacteria detected in bacterial maxillary sinusitis generally include *Streptococcus pneumoniae*, *Hemophilus influenzae*, and *Moraxella catarrhalis*, which do not produce an unpleasant odour. Puglisi, et al., found that bacteria involved in chronic sinusitis, such as *H. influenzae*

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