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著者名(英)	KAWAKAMI ,Johji /YAMADA ,Tetsuya/TAKEDA ,Shigehiro /SHIGEO ,Kimi haru/MUTO ,Toshi taka/KANAZAWA ,Masaa ki/NISHIMURA ,Michiko/OHUCHI ,Tomoyuki /KAKU ,Tohr u/KAWAKAMI ,Nobuyuki
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〔CLINICAL〕

A case of inverted papilloma of the maxillary sinus

Johji KAWAKAMI, Tetsuya YAMADA, Shigehiro TAKEDA, Kimiharu SHIGEO,
Toshitaka MUTO, Masaaki KANAZAWA, Michiko NISHIMURA*,
Tomoyuki OHUCHI**, Tohru KAKU** and Nobuyuki KAWAKAMI***

First Department of Oral and Maxillofacial Surgery, School of Dentistry,
Health Sciences University of Hokkaido.

*Clinical Laboratory, Dental Hospital, Health Sciences University of Hokkaido.

**Department of Oral Pathology, School of Dentistry, Health Sciences University of Hokkaido.

***Kawakami Dental clinic

(Chief : prof. Masaaki KANAZAWA)

*(Chief : Masahiro IEKO)

** (Chief : Tohru KAKU)

*** (Rumoi CITY)

Abstract

A case of inverted papilloma arising in the maxillary sinus is described. The first symptoms were rhinorrhoea and discomfort of the left infraorbital region. A biopsy obtained by penetration into the maxillary sinus resulted in a diagnosis of chronic sinusitis. However, the surgical specimen showed characteristic inverted epithelial proliferation. Two years after operation by the Caldwell-Luc method, there are no signs of recurrence. The diagnosis and treatment of inverted papilloma are discussed.

Key words : Inverted papilloma, Maxillary sinus, Caldwell-Luc operation.

Introduction

Inverted papilloma in the nasal or paranasal cavity is a relatively rare benign tumor of predominantly inverted epithelial proliferation¹⁻⁴). Carcinomas may occur within or adjacent to the inverted papilloma or may develop later in the same area^{1,2}). An initial diagnosis and careful follow-up are important for such lesions involving the malignant transformation. The initial diagnosis obtained by clinical examination or improperly excised biopsy specimens, may, however not lead to the final diagnosis.

Recently we encountered a patient with an inverted papilloma of the maxillary sinus.

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Because of the low occurrence rate of inverted papillomas and the possibility of misdiagnosis as maxillary sinusitis, we report this case and present a review of the literature.

Case Report

In 1992, a 29-year-old male was referred to the hospital of the Health Sciences University of Hokkaido with rhinorrhea and discomfort of the left infraorbital region of one and a half year's duration.

Extraoral, intraoral, and intranasal examination showed no abnormal findings. A panoramic radiograph showed a walnut-size, oval radiopacity at the base of the left maxillary antrum (Fig. 1). The computed tomograph showed peduncular and widely based clear masses projecting from both antral walls into the maxillary sinus (Fig. 2). A retention cyst of the maxillary sinus or chronic maxillary sinusitis was suspected. Follow-up observation was recommended as the symptoms had subsided.

The patient returned 5 years later as rhinorrhea of the left nasal cavity and a dull pain in the left infraorbital region had reappeared. The patient was scheduled for sinus radiographs, and the Waters' view radiograph showed a diffuse radiopacity of the left maxillary sinus (Fig. 3). The computed tomograph showed a large soft-tissue mass filling the maxillary sinus (Fig. 4). A biopsy by penetration of the anterior maxillary wall suggested chronic maxillary sinusitis (Fig. 5).

A Caldwell-Luc operation was performed on this lesion. It was found that the maxillary sinus was filled with three peduncular dark red, fragile masses projecting from the inferior, posterior, and interior walls of the maxillary sinus respectively (Fig. 6).

Microscopy of the mass showed lumina of various sizes lined by metaplastic-stratified squamous epithelial cells proliferating introversively. The epithelial cells maintained polarity

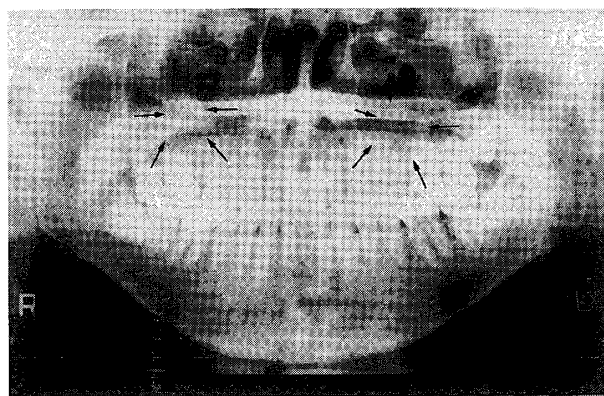


Fig. 1. Panoramic radiograph showing a walnut-size, oval radiopacity at the bottom of the left maxillary antrum (arrows).

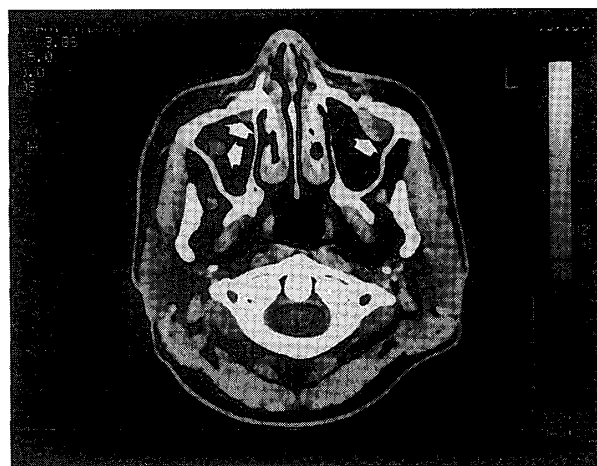


Fig. 2. Computed tomograph at the initial visit to the clinic (1992) showing masses projecting into both maxillary antrum (arrows).



Fig. 3. Waters' view radiograph 5 years after the initial visit. The left maxillary antrum is filled with diffuse radiopaque material.



Fig. 5. Histological feature at the biopsy. There is inflammatory cell infiltration in the edematous connective tissue below the epithelial cells.

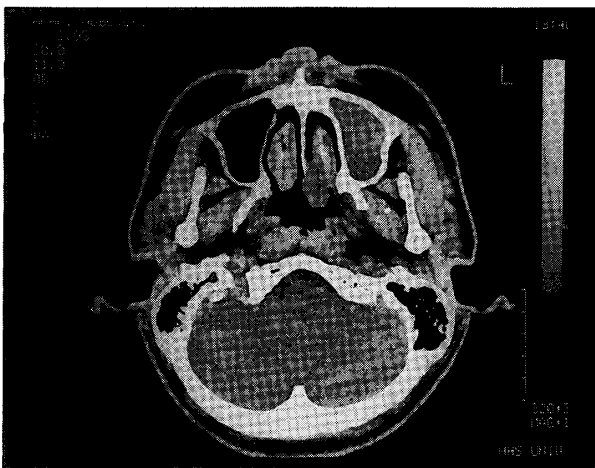


Fig. 4. Computed tomograph before the operation. The left maxillary antrum is filled with a high-density mass.

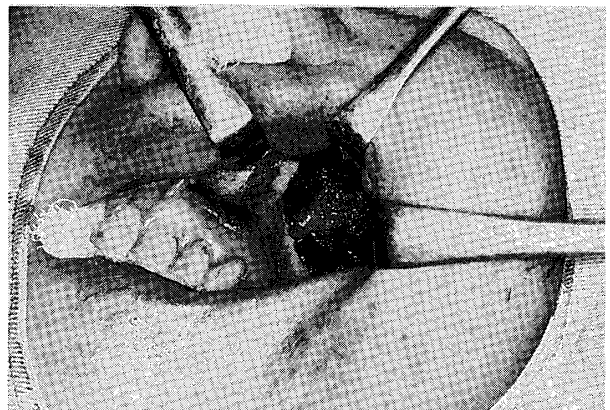


Fig. 6. The maxillary sinus is filled with dark red, fragile masses.



Fig. 7. Histological feature showing variously sized lumina lined by the metaplastic-stratified squamous epithelium, which showed introversive proliferation.

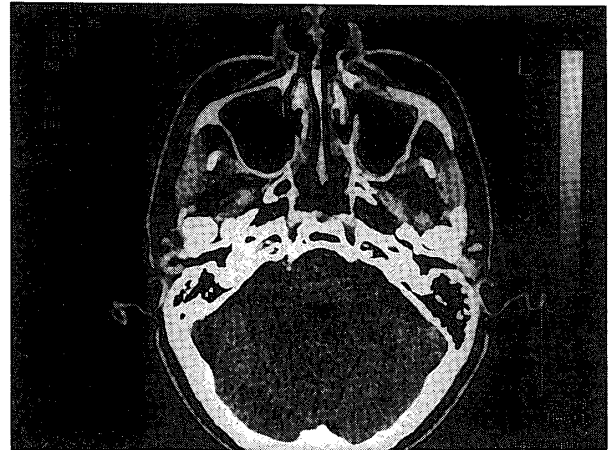


Fig. 8. Computed tomograph 2 years after the surgery showing no sign of recurrence.

and presented no atypia. The basal layer was intact. Some parts showed ciliated epithelial cells which lined the cystic lumina (Fig. 7). The tissue segments demonstrated the characteristic appearance of an inverted papilloma.

There are no signs of recurrence two years after the surgery (Fig. 8).

Discussion

Inverted papillomas are benign tumors characterized by introversive epithelial cell proliferation into subjacent connective tissue. Though this lesion is essentially a benign tumor, its local aggressiveness, high recurrence rate, and associated malignancy have been well-documented^{1,2}. Therefore, careful diagnosis, treatment, and follow-up is necessary.

Inverted papillomas comprise 0.5 to 4.0 per cent of all paranasal tumors¹. Though the majority of cases originate unilaterally, some (2 to 4 per cent) occur bilaterally³. The lesion occurs more frequently in men than in women, and more commonly in the fifth and sixth decade². The present case was the third decade.

Clinically, nasal obstruction is a more frequent feature, but nasal bleeding, rhinorrhea, or parosmia is reported in some cases. These symptoms may lead to a diagnosis of maxillary sinusitis or a postoperative maxillary cyst. In many cases, only the histologic features will lead to the final diagnoses^{4,5}. In the present case, the lesion was clinically diagnosed as a retention cyst or maxillary sinusitis. The biopsy through the anterior maxillary wall also showed inflammatory changes. However the specimen obtained by the surgical treatment showed an inverted papilloma. It is thought that multiple biopsies taken from different sites are necessary to establish the correct diagnosis, as a clinical evaluation alone is unreliable and as inflammation may result in erroneous diagnosis of superficial biopsy.

Inverted papillomas have a relatively high local recurrence rate after surgical removal^{1,2}. The recurrence rate of the lesion appears to be related to the surgical procedure adopted^{6,7}.

An intranasal approach, a radical operation of the paranasal antrum, and an extranasal approach showed 70, 40 to 45, 10 to 30 per cent recurrence rates, respectively^{6,7)}. The extranasal approach resulting in the lowest recurrence rate, however, may be an excessive treatment^{8,9)} and an antroscopic operation and excision via the maxillary antrum are recommended¹⁰⁾. There is a still controversy on operation methods to inverted papillomas. The present case accidentally underwent the Caldwell-Luc operation and no recurrence has been observed two years after the operation. The Caldwell-Luc operation may be an advantageous procedure of inverted papillomas.

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