MAXILLARY THIRD MOLAR IN THE ANTRUM

by

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Foreword

The occurrence of third molar in the maxillary sinus is very rare; but occasionally such cases have been reported in the literature. K.H. Thoma (1) cites a case of central dentigerous cyst enclosing a third molar in the maxillary sinus. Such cases of third molars have been observed in Osaka Dental University, Department of Oral Surgery, during the last 4 years. All these cases have been discovered after routine roentgenographic examinations.

The reports of teeth in the maxillary sinus, due to such factors as freak development, trauma, cystic odontoma have been reported. (2). The cyst containing tooth, expand into the surrounding bone and finally into the antrum. Dentigerous cyst is a closed epithelial sac formed around the crown of unerupted tooth. The cyst has been described as originating through a breakthrough of a stellate reticulum of the enamel organ after formation of crown is completed but in most of the cases probably these are results of degeneration of reduced enamel epithelium with accumulation of fluid either between layers of enamel epithelium or between this epithelium and the tooth crown.

William F. Via. etc. (3,4,5,6,7) have presented the case of dentigerous cysts in the maxillary sinus. The role of early detection of dentigerous cyst by roentgenograph and the early removal of cyst are emphasised by Mourshed (8) because 33% of ameloblastomas they studied originated from dentigerous cysts. According to S.N. Bhasker 25% to 30% of ameloblastomas occur in preexisting follicular cysts.

Case Report

The author has seen three cases in Bir Hospital, out of which one is presented in this paper.

The patient was a healthy and normal boy-aged 17. He was referred to the Hospital with complaint of postextraction swelling of face and difficulty in speaking. He complained that often when he took a liquid drink a few drops would run out of his left nostril.

History

Five days before coming to the Hospital, he visited a Dentist for the preparation of prosthesis over $\overline{6}$ region. The remaining roots of $\overline{6}$ were extracted. He did not have any complaint of trouble before extraction. The next day he complained of slight swelling over his cheek and pain over the socket and a slight difficulty in speaking. In spite of dressing, irrigation and chemotherapy, the pain and swelling persisted. Then the patient was referred to this hospital for further study and treatment.

On Examination

A visual extraoral examination revealed a slight but diffused swelling over the infraorbital region of the left side. There was pain on palpation. Intraorally unhealed open socket over $\overline{6}$ was found. Around the socket there was a slight redness and tenderness to palpation. All the upper third molars were not yet erupted. Oroantral fistula was found on probing the socket; and the probe could be inserted up to 4 cm directly in to the maxillary sinus. The upper 2nd. molar of the same side was vital.

On Roentgenographic Examination

A periapical roentgenograph revealed a socket $\overline{6}$ communicating into a large radioluscent area extending from the cuspid to the tuberosity. A lateral and P.A. view of skull was made. This examination was significant. The unerupted upper third molar was located inside the maxillary sinus near the zygomatic bone. The affected sinus was enlarged in size and the radioopaque white line or lamina dura was not seen specially over the floor of the antrum.

Routine laboratory exam. was done and all were found to be normal.

Operation

The surgical removal of cyst and the third molar from the maxillary sinus was decided. The sinus was approached from the buccal side. The tooth was found to be covered by the cyst occupying practically all sinus wall. After enucleation, a window was punched into the sinus over the inferior meatus for drainage. Oro-antral fistula was closed by muco-periosteal flap. Sixteen days after the operation, the patient was discharged from the hospital and no report of any complaint have been received for the period of six months.

Pathological Examination

Histopathologically it was found to be a typical odontogenic cyst. It consisted of a

fibrous connective tissue wall with a layer of stratified squamous epithelium lining the lumen. Infiltration of inflammatory cells in the connective tissues could be seen. On the outer wall of the cyst, a few normal tissues of the bone of the sinus wall was seen. The formation of crown was complete but the root was not fully developed. The root was fused and curved at rt. angle. The size of the crown was 9cm. buccolingually and 0.8cm. mesiodistally. The size of the cyst was about 4cm. in diameter and 0.3cm. in thickness. The case was diagnosed as a dentigerous cyst covering the crown of the third molar in the maxillary sinus.

Discussion and Conclusion

It is not yet known why a normal tooth was found into the antrum away from the alveolar process of the maxilla. Of the three cases, in the first two cases, the sinuses were infected only after the extractions of remained roots, and in the last one, the sinus was already infected before extraction, probably through the gingival margin or endogenous origin. The most common regions in the antrum which must be differentiated are malignant tumor, central giant cell reparative granuloma, radicular cyst, dentigerous cyst, ameloblastoma and the surgical ciliated cyst of maxilla. All of these may be differentiated by histological examination.

By roentgenographical and histopathological examinations the radicular cyst can be diagnosed correctly. It arises from around the root and not from the crown. Radicular cyst, however do expand into a sinus but the crown of the involved tooth is never near the region. The major cause of the radicular cyst is the death of the dental pulp; and it is associated with a nonvital tooth.

Malignant tumour of the jaw may be associated with maxillary sinus. It may be differentiated roentgenographically and clinically by their distinctive features such as ulceration of overlying mucous membrane, and indirect involvement of teeth, generalised bone and tooth destruction, and invasion with no distinct bony margin. Malignant lesions are more likely to cause tooth resorption than to move into the antrum. Microscopic examination clinches the diagnosis.

The giant cell reparative granuloma seldom occurs in the antrum. Roentgenographic appearance may be multilocular and expanding. It is not associated with the crown of the unerrupted teeth.

It is very difficult to differentiate between ameloblastoma and dentigerous cyst. But the multilocular roentgenographic appearance, destruction of the roots of the unerrupted teeth and intensive destruction of adjacent bone would suggest ameloblastoma. Positive identification of the ameloblastoma must be done after careful study of the lesion by competent oral pathologist.

Ciliated cyst of maxilla:—Careful questioning of the patient usually reveals history of some type of surgical procedure involving the maxilla and the maxillary sinus, frequently 10 to 20 years previously. Roentgenographic examination shows a well defined

radioluscent area closely related to the maxillary sinus, often appearing to encroach upon the sinus, but anatomically separate from it, as may be demonstrated by injection of sinus with a radio-opaque material.

As there is a tendency of changing from follicular cyst into the ameloblastoma, an early detection and removal should be emphasised. If the normal eruption of upper molar is delayed, extraoral roentgenographic examination of the skull should be done for its possible abnormal development.

References

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