COMPLEX ODONTOMES — TWO CASE REPORTS

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INTRODUCTION

The term "odontome" by definition refers to any tumor of odontogenic origin, but through usage, it has come to mean a growth in which both the epithelial and the mesenchymal cells exhibit complete differentiation, with the result that functional ameloblasts and odontoblasts form enamel and dentine.

There have been many classifications of odontomes, by Shafer,[1] Thoma and Goldman,[2] and Gorlin[3] but the most recent classification by W.H.O[4] includes the following.

Complex odontome–A malformation in which all the dental tissues are represented, individual tissues being mainly well formed but occurring in a more or less disorderly pattern.

Compound odontome–A malformation in which all the dental tissues are represented in a more orderly pattern than in the complex odontome so that the lesion consists of many tooth like structure.

Tumors containing mature enamel and dentine, together with a neoplastic soft tissue component, are properly classified as ameloblastic fibro odontomers or odonto-ameloblastomas. These should be distinguished from complex and compound odontomes.

Two cases of complex odontome, one involving the maxilla and the other involving the mandible are presented and an effort is made to review the literature.

CASE REPORT–I

A 19 year young boy was seen in oral and maxillofacial surgical unit of Khyber College of Dentistry complaining of persistent pain in upper left molar region and over the cheek. He also complained of persistent headache. Intra oral examination revealed complete dentition with an early periodontal disease. The oral mucosa over the left maxillary sinus was normal in appearance, with no enlargement of the left maxilla, however there was tenderness over the sinus, both intra orally and extra orally. The upper left third molar was missing and the patient did not recall having had it removed. The patient stated that he had sinus trouble with a stuffy feeling of left maxillary sinus for many years. There was no history of discharge from the nose. OPG and PNS views were taken. The PNS view revealed the presence of 2 cm round discrete radiopacity in the left maxillary sinus (Fig. 1-A). A provisional diagnosis of osteoma/odontome was made and removal of the mass was recommended.

After routine investigation, the patient was admitted in the hospital, where general anesthesia was administered by an oro–endotracheal tube. The left maxillary sinus was explored through a cadwell luc approach. Entry into the sinus was gained with a 3 mm small chisel, at a point superior to

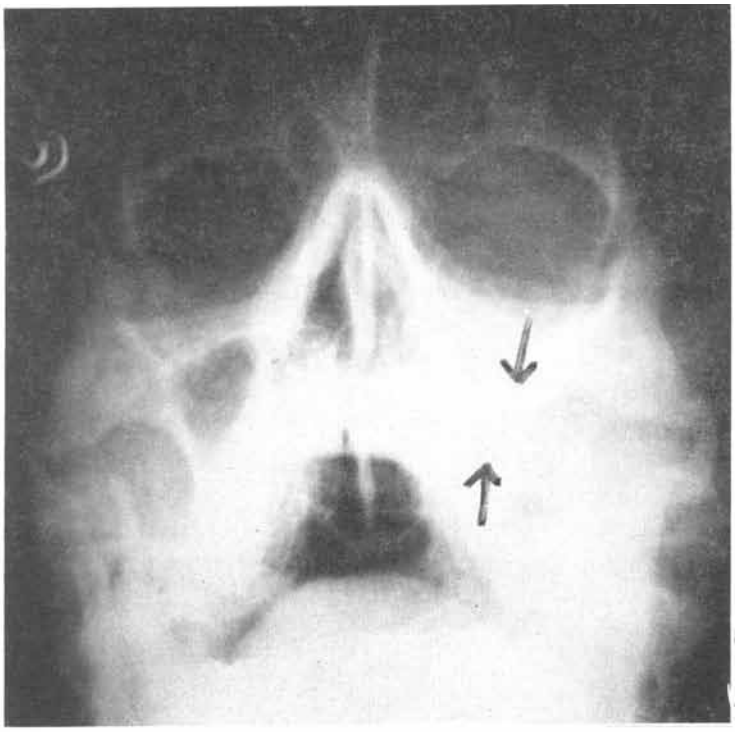

Fig. 1 A) PNS view showing opaqaue maxillary sinus.

Fig. 1 B) Photograph showing size of the Complex Odontome.

the apex of the first premolar. The opening was enlarged with roungeur forceps. The lesion was readily visible and appeared as a smooth, ovoid mass about 1.5 cm in mediolateral width. It was positioned just above the floor of the sinus and situated in the posterolateral aspect of the cavity. Several discrete polypoid masses of soft tissue were present at its base. With the help of periosteal elevator, the mass was easily detached from the sinus with its soft tissue covering intact. Close examination after the membrane was removed from the specimen revealed a smooth, yellow white 1.5 x 1 cm hard mass that seemed to be bone (Fig. 1-B). The polypoid soft tissue was completely curetted from the antral floor and was send for biopsy along with tumor. The sinus was irrigated and the mucoperiosteal flap was closed primarily. Routine antibiotic and nasal spray were prescribed along with analgesic for one week. Ten day letter the sutures were removed. The patient was followed in out patient clinic for three weeks and had uneventful recovery.

The biopsy report of hard tissue was complex odontome. The soft tissue specimens were reported as antral polyps with chronic inflammation. The microscopic examination of the tumor showed it to be composed largely of dentine, with areas of cementum. There were a few small areas of pulp tissue and several areas of enamel formation.

CASE REPORT–II

A 16 years young girl was seen in oral and maxillofacial surgical unit complaining of swelling over the ramus of the right mandible with sever pain and limited mouth opening. She noticed slight swelling around the lower right molar region two days back. Initially the swelling was not tender but with in 24 hours the swelling increased until the entire ascending ramus was involved. Mouth opening was limited and the patient had sever pain and temperature of 103° F. Extra oral examination revealed a diffused swelling involving the tissues over the ascending ramus of right mandible from the angle of the zygomatic arch and extending from the anterior border of the sternomastoid muscle to the second molar area but no fluctuation was notice. Intra orally there was moderate trismus. The full complement of teeth being present excluding lower right second and third molars. There was no apparent expansion of inner and outer cortex of the mandible in retromolar and ascending ramus areas.

OPG disclosed a dense radiopaque mass occupying the third molar region with extension into the right ascending ramus. The mass did not appear to be encapsulated with the crown of the impacted second molar in intimate relation to the mass (Fig. 2-A). A provisional diagnosis of odontome of the mandible was made.

Following routine investigation and induction of oro–endotracheal anesthesia, a standard incision for impacted third molar was made which was extended 1 cm towards the ramus for better accessibility. Mucoperiosteum was reflected with periosteal elevator. Electric drill was used to remove the thin cortex over the entire extent of the tumor. The tumor measuring 5x4 cm was elevated from its base with the help of elevator (Fig. 2-B). The impacted second molar was also removed. The area was irrigated and the wound was closed with 3/0 silk suture. The specimen was send for biopsy.

The postoperative course was uneventful There was moderate swelling of the tissue over the operative site but this gradually decreased over the third day. On tenth day the black silk sutures were removed and the patient was discharged. The specimen send for biopsy was reported to be a complex odontome.

DISCUSSION

A review of odontomes by Sprawson in 1937[5] credits Paul Broca with the first use

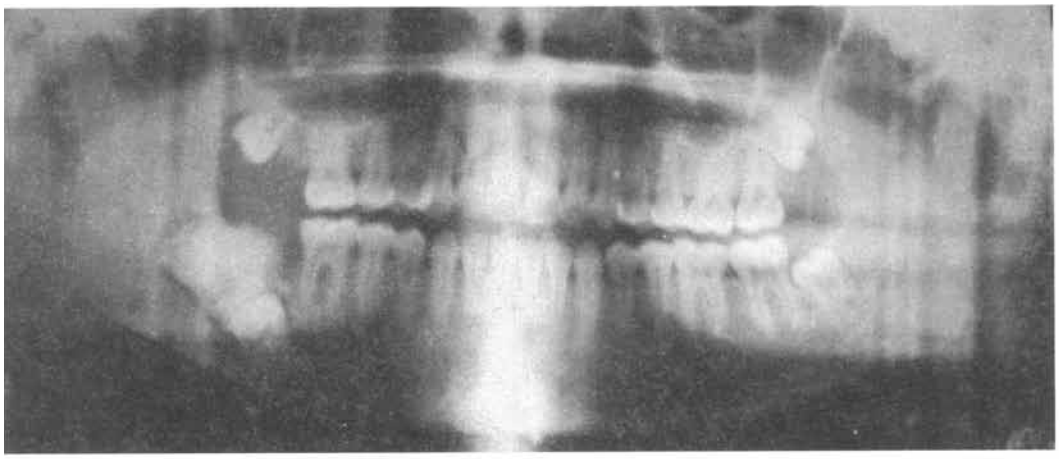

Fig. 2 A) OPG shows complex odontome in Ramus region along with impacted second Molar.

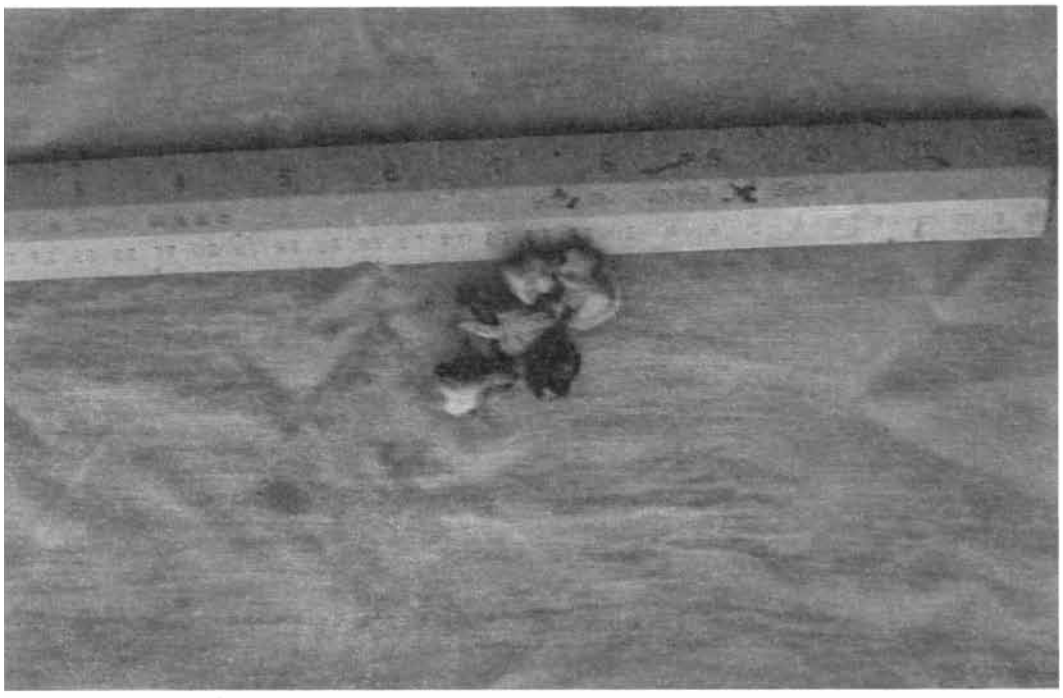

Fig. 2 B) Photograph showing size of the Complex Odontome.

of the term odontome in 1867. Broca defined the terms as, "tumors formed by the overgrowth of transitory or complete dental tissues".

Odontomes are odontogenic tumors with both epithelial and mesenchymal components characterized by dental tissue formation. However most authorities will concede that these lesions are more properly considered to be malformations rather than true neoplasms.[4] Although odontomes are probably the most common of the odontogenic tumors, the literature contains remarkably few references to these lesions. Statistical information relative to the age of patient, incidence, location and other clinical features is practically non existent.

The etiology of odontomes is still unknown. The theories include local trauma and infection. The conclusion that an odontome can arise at any stage of tooth development has been proved correct by Metnitz.[6] In 1971 Hitchin[7] suggested that odontomes are either inherited or due to a mutant gene or interference, perhaps post-natal, with genetic control of tooth development. Gorlin and Pindborg[3] consider that the origin may be dental lamina, possibly supernumerary lamina or even a lamina in the follicle of an unerupted tooth.

Although these benign odontogenic tumors grow slowly and ordinarily asymptomatic, certain signs and symptoms occur frequently enough to suggest their presence. Most common clinical presentation is that of impacted teeth or retention of deciduous teeth. The second most common complaint is swelling, intra oral or extra oral or both followed by displacement of erupted teeth and secondarily, fever, pain and suppuration.

Odontomes are most often diagnosed on the basis of radiographic appearance. They are seen as radiopaque masses, some times surrounded by lytic appearing areas which may represent a capsule or actual cyst formation. They may present as solid masses or as multiple toothlets.

Odontomes are non aggressive and usually remain small and asymptomatic[3] Ordinarily odontomes are closely associated with or found with in the dental arches. Occasionally, however, they may be present in unexpected locations e.g. the maxillary sinus, at the inferior border of the mandible[8] in the ramus[9] and sub condylar region.[10] In search of the literature three cases of complex odontomese involving the maxillary sinus were found.[11,12,13] In the first two cases the tumor also involved a large portion of the maxillary aleolar process and had involved the sinus by extension. In the third case the tumor was entirely within the maxillary sinus. Both cases presented in this paper were not diagnosed on routine radiographs. Infect both patients reported after the pain started. This is expected in this part of the world where patients do not visit dentist for routine dental check up but will consult dentist only when the pain starts.

The location of the odontome in the maxillary sinus and its gross configuration in our case is similar to the of Random.[13] The other reported cases of odontomes in the maxillary sinus were also complex odontomes but they were larger and very irregular in morphology.[11,12] One was attached to the crown of a normally developed upper molar.[11] Both seemed to have grown into the sinus from the maxillary alveolus. In our case the odontome was contained entirely with in the antrum.

The second case of complex odontome occupied part of the ascending ramus of the mandible and was attached to the crown of the unerupted mandibular second molar. Large odontme may be present for years without causing symptoms. They may be discovered on routine examination or following secondary infection. Both the cases reported in this article, were discovered following secondary infection.

There is danger of pathological fracture occurring during removal of large odontome. Precaution should be taken to avoid such complication and to recognize and treat, if it occurs.

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