CASE REPORT

Complex Odontoma in Both the Jaws: A Rare Case Report

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ABSTRACT

Odontomas are the most common odontogenic tumors. They are usually asymptomatic and are often discovered during routine radiography. Complex odontomas appear as irregular calcified masses that bear no similarity to teeth. We report a rare case of complex odontoma in maxilla and mandible in an adult patient with clinical, radiological, histological features and treated surgically, with its review of the literature.

Keywords: Complex, Computed tomography, Maxilla/Mandible, Odontoma, Radiopaque.

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INTRODUCTION

Paul Broca was the first person to use the term ‘odontoma’ in 1867. He defined the term odontoma as ‘tumors formed by the overgrowth of transitory or complete dental tissues’. Odontomas are slow-growing asymptomatic neoplasms represent 22% of the odontogenic tumors found in jaws. They develop from epithelial and mesenchymal components of the dental apparatus, producing enamel and dentin. They can occur anywhere in the mandible or maxilla without apparent predilection for age or sex, although they usually are found in conjunction with primary teeth. Odontomas frequently can inhibit the eruption of adjacent teeth. Radiologically odontomas are classified as complex, compound and cystic. Complex odontomas are less common than the compound variety in the ratio 1:2. Complex odontomas in turn are found in the posterior mandibular sector, overimpacted teeth, and can reach several centimeters in size. These lesions manifest as a radiopaque solid mass with occasional nodular elements, and surrounded by a fine radiolucent rim. The lesions are unilocular and are separated from the normal bone by a well-defined corticalization line. No individual tooth-like structures are seen. A complex odontoma presents as an amorphous conglomeration of dental tissues consisting of enamel, dentin, cementum, pulp and enamel organ. The treatment of choice is surgical removal of the lesion, followed by histopathological study to confirm the diagnosis. We present an interesting and a rare case of complex odontoma in maxilla and mandible of an adult patient.
Intraoral periapical radiograph revealed a well-defined radiopaque mass in between the roots of 25 to 27, (Fig. 2A) and an ill-defined radiopaque mass in between 45 and 46. (Fig. 2B) Cross-sectional mandibular occlusal radiograph showed bicortical expansion (Fig. 3), panoramic radiograph (Fig. 4) showed the radiopaque mass surrounded by thin radiolucent rim extending from 25 to 26, with pushing the floor of the maxillary sinus, and also radiopaque mass surrounded by thin radiolucent rim extending from 45 to 46, with inclination and tilting of adjacent teeth without causing any destruction of mandibular canal, and absence of left mandible from symphysis to subcondylar region. Axial view (Fig. 5A) of computed tomography (CT) of the jaws showed expansile hyperdense mass in the maxillary left premolar region. The coronal view (Fig. 5B) of CT showed an expansile calcified mass in the mandibular premolar region, and in the maxillary left region showed the lesion was not involving the maxillary sinus. Considering the clinical and radiologic presentations, a diagnosis of complex odontoma was determined. Differential diagnosis of ameloblastic fibro-odontoma and other fibro-osseous lesions were considered.

The patient underwent surgery with general anesthesia. A mucoperiosteal flap was opened; the tumor was enucleated along with the extraction of involved teeth 24, 25, 26 and 45, 46. The areas were curetted well and lining was removed. The cavity was applied with carnoy’s solution and packed with gauge, the flap was sutured in place. The specimen (Fig. 6) was sent to histopathological examination (Fig. 7) which revealed mostly irregular dentin, cementum, enamel and spaces containing loose fibrous connective tissue, which confirmed the diagnosis of complex odontoma.

**DISCUSSION**

Odontoma is the most common type of odontogenic tumor, although some authors prefer to refer to it as hamartoma, not a true tumor.\(^5\) Complex odontomas tend to occur in the posterior region of the jaw and compound odontomas are more common in the anterior maxilla.\(^6,9\) The main unique feature of our case is that the complex odontoma is in both...
maxilla and mandible in the premolar region. They may be
discovered at any age, although less than 10% are found in
patients over 40 years of age, our patient was 41 years.
Although they are commonly asymptomatic, clinical
indicators of odontoma may include retention of deciduous
teeth, noneruption of permanent teeth, pain, expansion of
the cortical bone and tooth displacement. In the present case,
there was bicortical expansion and displacement of teeth.
Other symptoms include anesthesia in the lower lip and
swelling in the affected area.

According to WHO classification, odontomas can be
divided into three groups are as follows:  

1. **Complex odontoma**: When the calcified dental tissues
   are simply arranged in an irregular mass bearing no
   morphologic similarity to rudimentary teeth.

2. **Compound odontoma**: Composed of all odontogenic
   tissue in an orderly pattern that results in many teeth
   like structures, but without morphological resemblance
   of normal teeth.

3. **Ameloblastic fibro-odontoma**: Consists of varying
   amount of calcified dental tissues and dental papilla like
   tissues, that later component resembling an ameloblastic
   fibroma. The ameloblastic fibro-odontoma is considered
   as an immature precursor of complex odontoma.

Clinically, odontomas are either complex or compound,
and are classified as follows:  

- **Intraosseous**: These odontomas occur inside the bone
  and may erupt (erupted odontoma) into the oral cavity.

- **Extraosseous or peripheral**: Odontomas occurring in the
  soft tissue covering the tooth-bearing portions of the jaws.
The odontoma presents as a well-defined radiopacity
situated in bone, but with a density that is greater than bone
and equal to or greater than that of a tooth. It contains foci
of variable density. A radiolucent halo, typically surrounded
by a thin sclerotic line, surrounds the radiopacity. The
radiolucent zone is the connective tissue capsule of a normal
tooth follicle. The thin sclerotic line resembles the corticated
border seen in a normal tooth crypt. The developmental
stages can be identified based on radiologic features and
the degree of calcification of the lesion at the time of
diagnosis.  

The first stage is characterized by radiolucency
due to the absence of dental tissue calcification, the second
or intermediate stage shows partial calcification and the third
or classically radiopaque stage exhibits predominant tissue
calcification with the surrounding radiolucent halo. In
our case, we present a complex odontoma, which should be
differentiated from cementoblastoma, osteoid osteoma and
fibro-osseous lesions, such as cemento-ossifying fibroma.

Additional radiographic evaluation with CT was
necessary to determine the extension and features of the
lesion because the two-dimensional limitations of periapical
and panoramic images did not allow complete visualization
of the maxillofacial complex. In this regard, CT images are
necessary not only for evaluation of the lesion itself, but
also for localization of associated pathoses and proper
treatment planning. In our case, CT images allowed better
depiction of the hyperdense mass nearing the floor of the
maxillary sinus. These features, based on CT images, were
critical for the therapeutic approach, allowing perfect
planning for the surgical procedure and elucidation of
diagnosis. In cases when obstruction of sinus drainage is
evident, one should be completely aware of serious

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**Fig. 5A**: Axial view of computed tomography

**Fig. 5B**: Coronal view of computed tomography
CONCLUSION

As for our knowledge there is no such reported case of complex odontoma occurring in both the jaws in an adult patient. Since our patient is from a remote place, there were no previous records of the hemimandibulectomy of the left side, we assume that it could have been any cyst or a tumor. CT is the gold standard, especially for ruling out any suspicion of associated paranasal sinus, orbital involvement, and revealing the spread and intracranial extension of cysts and tumors of the oral cavity.

REFERENCES


Fig. 6: Surgical specimen

Fig. 7: Histological photograph

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