

# The odontomes: Report of five cases

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## ABSTRACT

Odontoma seems to result from budding of extra-odontogenic epithelial cells from the dental lamina. This cluster of cells forms a large mass of tissues that may be deposited in an abnormal arrangement, but consists of normal enamel, dentin, cementum and pulp. World Health Organization (WHO) classification defines a lesion as a malformation in which all the dental tissues are represented in a more orderly pattern than in the complex odontoma so that the lesion consists of many tooth-like structures. This article presents a report of five cases of odontomes.

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## INTRODUCTION

The term odontoma refers to any tumor of odontogenic origin. An odontome is a growth in which both epithelial and mesenchymal cells exhibit complete differentiation with the result that functional ameloblasts and odontoblasts form enamel and dentin.<sup>[1]</sup>

These enamel and dentin are usually laid down in an abnormal pattern because the organization of the odontogenic cells fails to reach a normal state of morphodifferentiation.

Odontoma represents a hamartomatous malformation rather than a neoplasm. It is the most common odontogenic tumor, representing 67% of all odontogenic tumors.<sup>[2]</sup>

## CASE REPORTS

### Case 1

A 17-year-old girl reported to the Department of

Oral and Maxillofacial Surgery with the complaint of swelling on the left lower jaw for 3 years. There was huge swelling with diffuse border involving lower border of mandible and extending up to the tragus of ear. The consistency was firm and the overlying skin was normal. Intraoral examination revealed the swelling extending from first molar to ramus of the mandible was cystic in consistency. The patient was advised to Go for a radiograph (orthopantomogram [OPG]), which showed a very large radiolucent swelling on the left mandible, involving condyle and the coronoid regions. There was an impacted molar along with a large radiopaque mass at the lower border of mandible. Fine needle aspiration cytology (FNAC) revealed it to be a dentigerous cyst [Figure 1]. Marsuplization was done and the specimen was sent for biopsy which showed the cyst wall was lined by stratified squamous epithelial and subepithelial zone showed fibrocollagenous tissue consistent with the clinical diagnosis of cystic lesion.

Iodoform dressing was given for 1 year after which the radiograph taken showed that the bone was formed at the lower border as well as in the coronoid and condyle regions [Figure 2]. The removal of odontome as well as impacted tooth under general anesthesia (GA) was planned for. Extraoral incision was given and odontome and cystic lining was removed. Postoperative healing was uneventful. Iodoform dressing was given and continued until the bone completely healed.

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**Case 2**

A 60-year-old woman reported to the Department of Oral and Maxillofacial Surgery with complaint of recurrent pain, swelling and pus discharge in relation to left lower jaw. On intraoral examination, the patient who was edentulous had a tender swelling in relation to left premolar region without any pus discharge was present. An intraoral periapical radiograph and OPG was advised, which showed an impacted premolar along with some radiopaque mass [Figure 3]. The extraction of impacted premolar was planned for. Transalveolar extraction was done and the specimen was sent for biopsy which revealed it to be a case of complex odontome along with left premolar. Postoperative healing was normal.

**Case 3**

A 50-year-old lady reported to the Department of Oral and Maxillofacial Surgery with the complaint of pain and pus discharge from the left lower jaw. Intraoral examination showed intraoral sinus in relation to the edentulous region of left lower molar region. Radiograph showed impacted first molar along with radiopacity. Transalveolar extraction was done. Postoperative healing was uneventful.

**Case 4**

A 50-year-old male reported to the Department of Oral and Maxillofacial Surgery with the complaint of pain in relation to left lower posterior teeth. There was severe attrition. An OPG was advised which revealed impacted left lower third molar along with multiple radiopacities in the ramus of the mandible. They resembled the shape of the teeth. The patient was not willing for the surgical removal of odontoma since they were asymptomatic. We advised him for regular check-up. The root stumps of first molar were removed as they were infected.

**Case 5**

A 26-year-old lady reported to the Department of Oral and Maxillofacial Surgery with the complaint of pain and swelling in relation to left lower jaw for 6 months. There was swelling in the right lower jaw. An OPG was advised, which showed huge odontoma along with impacted first, second and third molars. It was removed by giving submandibular incision. Postoperative healing was uneventful.

## DISCUSSION

The odontoma seems to result from budding of extra-odontogenic epithelial cells from the dental lamina. These clusters of cells form a large mass of tissues that may be deposited in an abnormal arrangement, but consists of normal enamel, dentin, cementum and pulp.

The odontoma passes through the same stage as that

of the developing tooth. At first, there is resorption, so the lesion is radiolucent. Then, in the intermediate stage, the odontogenic tissue is radiolucent and radiopaque because of partial calcification. The most radiopaque stage is when calcification of dental tissues is complete.

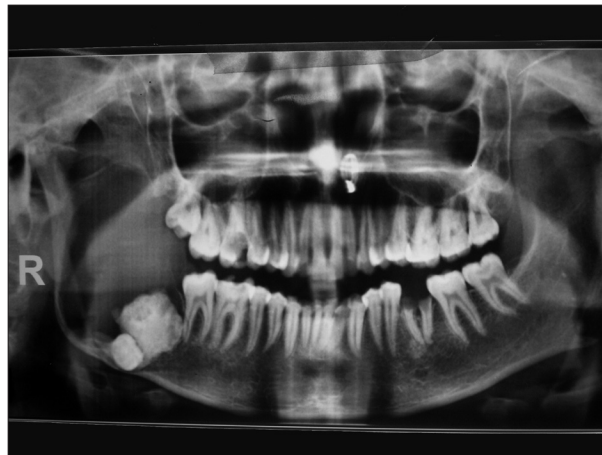


Figure 1: Case 1 Pre operative OPG

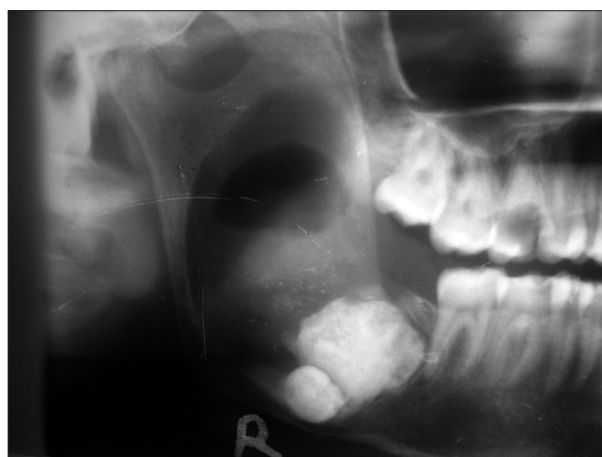


Figure 2: Case 1 One year after marsuplization

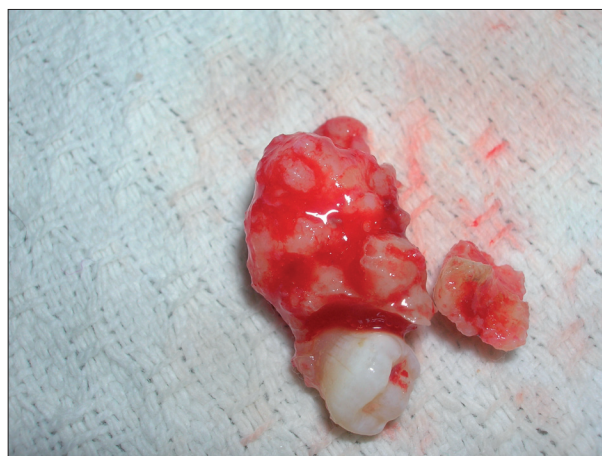


Figure 3: Case 2 Odontoma removed from edentulous mandible

The most common type is compound odontome which comprises of odontogenic tissues laid down in a normal relationship. The resulting structure bears considerable morphologic resemblance to teeth.

Complex odontomes are formed when tooth components are not well organised and tooth-like structures are not formed.

Some tumors are combination of these two types and are called compound complex odontomes (contain not only multiple teeth-like structures but also calcified mass of dentin tissues in a haphazard arrangement).<sup>[2]</sup>

Some 62% of the compound variety of odontome occurs in maxilla, having predilection for the incisor canine region but with no gender bias.

The complex odontomes are more common in the mandible and approximately 68% of complex odontomes occur in female patients.<sup>[2]</sup>

In 1946, Thoma and Goldman gave a classification which is as follows.

- *Geminated composite odontomes*: Two or more, more or less well-developed teeth fused together.
- *Compound composite odontomes*: Made up of more or less rudimentary teeth.
- *Complex composite odontomes*: Calcified structure bearing no great resemblance to the normal anatomical arrangement of dental tissues.
- *Dilated odontomes*: The crown or root part of tooth shows marked enlargement.
- *Cystic odontomes*: An odontome that is normally encapsulated by fibrous connective tissue in a cyst or in the wall of a cyst.

According to World Health Organization (WHO) classification, odontomes can be divided into three groups.

- *Complex odontome*: When the calcified dental tissues are simply arranged in an irregular mass bearing no morphologic similarity to rudimentary teeth.
- *Compound odontome*: Composed of all odontogenic tissues in an orderly pattern, which result in many teeth-like structures, but without morphologic resemblance to normal teeth.
- *Ameloblastic fibro-odontome*: Consists of varying amounts of calcified dental tissue and dental papilla-like tissue, the later component resembling an ameloblastic fibroma. The ameloblastic fibro-odontome is considered as an immature precursor of complex odontoma.

A new type known as hybrid odontome is also reported by some authors.

Odontomes are also classified as intraosseous and

extraosseous odontomes. The intraosseous odontomes occur inside the bone and may erupt into the oral cavity (erupted odontome). The extraosseous or peripheral odontomes are odontomes occurring in the soft tissue covering the tooth-bearing portions of the jaws and having a tendency to exfoliate.<sup>[3,4]</sup>

WHO classification defines a lesion as 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 structures.

The exact etiology of odontome is unknown. However, it has been suggested that the trauma and infection may lead to the development of such lesions. It has been suggested by Hitchin that odontomes are inherited or are due to mutagen or interference, possibly postnatal, with genetic control of tooth development.<sup>[3,4]</sup>

The etiology of the odontomes is unknown but the genetic factors and environmental causes such as trauma and infection have been proposed.<sup>[5]</sup>

Although the odontomes may be found in any tooth-bearing region of the jaw, majority of the complex odontomes are found in the posterior mandible, followed by anterior maxilla and are usually discovered before the second decade of life.

A classification given by H.M.Worth in 1937 is as follows.<sup>[6]</sup>

- *Epithelial odontomes arising from dental epithelium*: Dental cyst, dentigerous cyst, multilocular cyst (adamantinoma)
- *Composite odontomes arising from the dental epithelium and dental mesoblastic tissues*: Complex, compound, geminated and dilated

The odontomas may be found in any tooth bearing region of jaw. Majority of the complex odontomas are found in the posterior mandible, followed by anterior maxilla and is usually discovered before the second decade of life. The dentigerous cyst also known as the follicular cyst arise from the follicle of a tooth germ or unerupted tooth or rarely an odontome enclosing the same with in it. It develops by the cystic degeneration of the epithelial component of the enamel organ and the resultant fluid accumulation between the reduced enamel and enamel of the tooth.

Due to their potential for attaining large size and destroying the jaw bones, these cysts are capable of causing resorption of root of the adjacent teeth with the neoplastic changes such as ameloblastoma or carcinoma with in isolated segment of the cyst wall. This justifies complete enucleation of the dentigerous cyst and its histopathological examination.

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