

## Composite Compound Odontoma

### Report of a Case

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(Received May 15, 1968)*

A composite compound odontoma is considered as a tumorous anomaly containing both ectodermal and mesodermal structures with numerous denticles in it.

Recently we experienced a case of composite compound odontoma in a 3-year-old girl.

#### REPORT OF A CASE

A 3-year-old girl was admitted to the Yamaguchi University Hospital because of a hard painless swelling in the periapical region of the upper right canine area. Her past medical and family histories revealed no significant information. The physical examination revealed a well-developed, well-nourished girl without any apparent physical deformities except for the swelling of gum. Radiographic examination revealed a solitary cystic area containing calcified material in the canine area (Fig. 1).

The girl was taken to surgery under general anesthesia. An intraoral approach was made in the canine area. Alveolar bone covering the tumor was thin and had parchment crepitation. Entire tumor was embedded in the bone. Postoperative course was good and she was discharged on the 15 th hospital day.

#### Macroscopic Findings :

The tumor was hard and as large as middle-finger's head. It contained numerous denticles (Fig. 2). Some of them had specific tooth form and the others were oddly shaped or amorphous calcified masses. A fibrous capsule was present and some denticles were bound together with it (Fig. 3).

#### Microscopic Findings :

The tumor was composed of fibrous tissue which contained various kinds of dental tissues. Many dental pulps were attached to the fibrous tissues (Fig. 4), and they were covered with epithelium resembling ameloblast. In a few areas stellate reticulum-like tissues with ameloblast were present (Fig. 5). Occasionally

complete primitive tooth germs were found (Fig. 6), which were composed of enamel, dentine, odontoblast and dental pulp in reasonably normal relationship (Fig. 7). Ameloblastic tissues were found here and there (Fig. 8), but they did not show any neoplastic proliferation and seemed to have the normal morphodifferentiating and inducing capacity.

Pathological diagnosis was composite compound odontoma.

## DISCUSSION

Many authors have attempted to classify odontogenic tumors. The most common one was made by Thoma and Goldman,<sup>1)</sup> in which the odontogenic tumors were divided into three types.

In 1958, Pindborg and Clausen<sup>2)</sup> proposed a new classification of odontogenic tumor in which the tumors were divided into two types. In that paper odontoma was classified as epithelial tumors with inductive changes in connective tissue, and the odontoma was subdivided into three types; ameloblastic, complex and compound odontoma. In the compound odontoma a large number of teeth are included. Here all of the forces of odontogeneses are in operation, lacking only a control on the quantity of their products.<sup>3)</sup>

In the compound odontoma ameloblastic tissue is usually absent. But in this case ameloblastic tissues were found here and there. This finding seems to suggest ameloblastic odontoma. According to Frissell,<sup>4)</sup> the ameloblastic odontoma is characterized by the simultaneous occurrence of a typical or atypical ameloblastoma and a compound or complex odontoma in the same tumor masses. But in this case ameloblast showed not a neoplastic proliferation but a normal morphodifferentiation of the developing tooth. Author thinks that as the patient, in this case, is only three years old, the odontogenesis is still so active that the tumor may contain the immature structure like ameloblastic tissue besides dentin, enamel and denticles.

## SUMMARY

A case of a composite compound odontoma in a 3-year-old girl was reported. The tumor contained numerous denticles and microscopically it was composed of fibrous tissue, ameloblast, odontoblast, dental pulp, dentine and enamel.

## REFERENCES

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- 4) C.T. Frissell and W.G. Schaffer: *Oral Surg.*, **6**: 1129-1133, 1953.

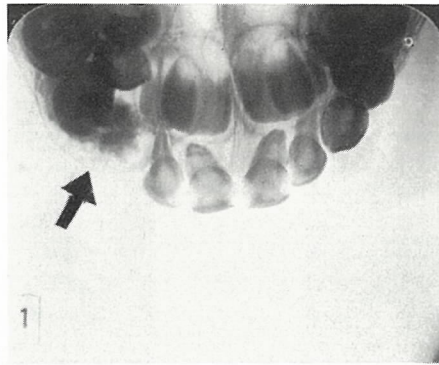


Fig. 1. Roentgenogram illustrating a solitary cystic area (above arrow) containing calcified material.

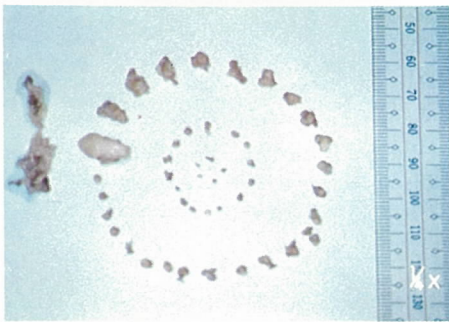


Fig. 2. Denticles found in the tumor and its capsule (at bottom).

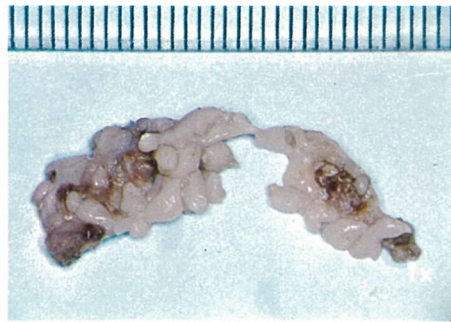


Fig. 3. Capsule with denticles attached to it. (Closed up)

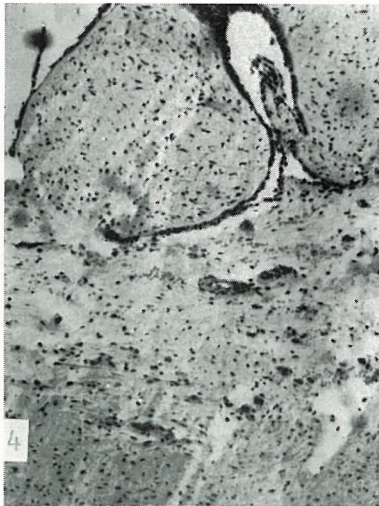


Fig. 4. Dental pulp attached to the fibrous tissue (H.E.  $\times 100$ ).

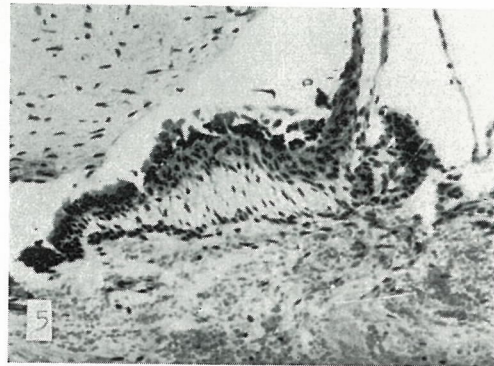


Fig. 5. Stellate reticulum-like tissue with ameloblast (H.E.  $\times 100$ ).



Fig. 6. Primitive tooth germ (H.E.  $\times 100$ ).

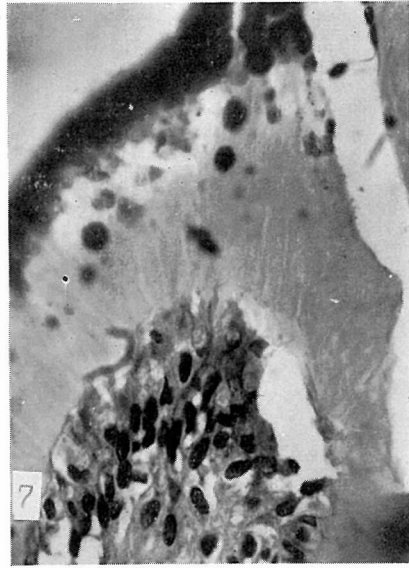


Fig. 7. Enamel, dentine, odontoblast and dental pulp arranged in normal relationship (H.E.  $\times 400$ ).

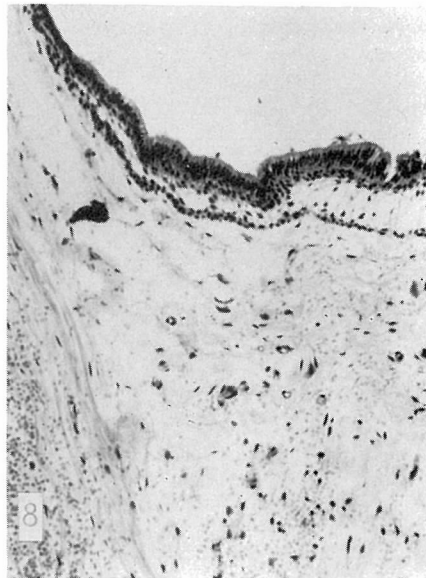


Fig. 8. Ameloblastic layer showing normal morphodifferentiation (H.E.  $\times 100$ ).