

# Compound Odontoma: A Case Report

Irin Susan Varghese<sup>1</sup>, Kukkalli Kamalaksharappa Shashibhushan<sup>2</sup>, Prashant Babaji<sup>3</sup>, Muttugadur Chandrappa Pradeep<sup>4</sup>, Zeenath Ambareen<sup>5</sup>, Shobha Rajappa<sup>6</sup>

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## ABSTRACT

**Aim:** Surgical excision of an odontome to facilitate the spontaneous eruption of the impacted incisor.

**Background:** Odontomas are the most common odontogenic hamartomas worldwide. They are included under benign calcified odontogenic tumors. Basically, they are divided into two types, complex and compound odontomas.

**Case description:** A 11-year-old female child reported for a routine dental checkup when a missing left permanent maxillary lateral incisor was noticed. Further investigations revealed compound odontoma.

**Conclusion:** Early detection of these tumors is essential to avoid lengthy corrective treatments at a later stage.

**Clinical significance:** Odontomas are generally asymptomatic. Because they are asymptomatic and do not cause any changes in the bone, they are often diagnosed during a routine dental examination. Complex odontomas are commonly found in the posterior jaw, while compound odontomas are found in the anterior jaw.

**Keywords:** Complex odontoma, Compound odontoma, Odontoma, Supernumerary tooth.

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## BACKGROUND

Odontomas make up 22% of odontogenic tumors which are hamartomas of aborted tooth development.<sup>1</sup> Odontogenic tumors are of epithelial and mesenchymal origin, and they are the most common benign tumors.<sup>2</sup> Paul Broca in 1867, introduced the term odontoma. The term odontoma was defined by Broca as tumors arising from the increased growth or conversion of complete tooth tissue.<sup>3</sup> Odontomas form about 22% of the entire odontogenic tumors of the jaw.<sup>1</sup> Odontogenic tumors of the jaw are about 10% of all compound odontomas.<sup>4,5</sup> Among these, 9–37% are cases of compound odontomas, whereas complex odontoma varies between 5 and 30%.<sup>6</sup> Compound composite type (61%) serves a majority of the odontomas in the anterior part of the jaw, while the posterior part is of complex composite type (34%).<sup>7</sup> Fascinatingly, either type of odontoma occurs often on the right side of the jaw as compared to the left (compound 62%, complex 68%).<sup>7</sup> Premolar regions and molar of the mandible are the most usual site of complex odontoma, while in contrast, compound composite odontoma occurs most often in incisors of the maxillary region. Odontomas are often coupled with hereditary anomalies like Gardner syndrome, Hermann syndrome, trauma during the primary dentition, as well as infectious and inflammatory processes, hyperactivity of odontoblast, and genetic component changes which are responsible for controlling tooth development.

## CASE DESCRIPTION

A healthy 11-year-old patient had reported with the chief complaint of an unerupted tooth in the upper front tooth region. Intraoral examination revealed mixed dentition. It was found that her upper left maxillary central incisor was erupting (Fig. 1). Radiovisiography (RVG) revealed radiopaque tooth-like structures, which were present between the middle root third of the left lateral incisor and the coronal portion of the left central incisor (Fig. 2). This led to the diagnosis of compound odontoma.

<sup>1–6</sup>Department of Pedodontics and Preventive Dentistry, Sharavathi Dental College and Hospital, Shivamogga, Karnataka, India

**Corresponding Author:** Irin Susan Varghese, Department of Pedodontics and Preventive Dentistry, Sharavathi Dental College and Hospital, Shivamogga, Karnataka, India, Phone: +91 8301976358, e-mail: irinsusanv@gmail.com

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Preoperative investigations included routine blood test, which was found to be within the normal range. Perioral structures were prepared using betadine. Local anesthesia was administered. A mucoperiosteal flap was elevated (Fig. 3), and a straight slow handpiece with a round tungsten carbide bur was used to create a window in the bone under normal saline irrigation. Denticle was exposed and removed (Fig. 4) along with the follicle. Enucleated site was thoroughly irrigated, the flap was repositioned and sutured with 3-0 Vicryl. After 1 week of follow-up, it was seen that the permanent left central incisor started erupting (Fig. 5).

## DISCUSSION

The dental tissues in compound odontomas are represented in a more structured pattern than in a complex odontoma, and the lesion consists of many tooth-like structures. They have an incidence of 9–27% with a female predilection. Gravey et al. classified compound odontome into the denticulo type and particulate type. Two or more tissue separated denticles are present in the denticulo type, which also consists of crown and root, while the two



Fig. 1: Erupting tooth in relation to left central incisor

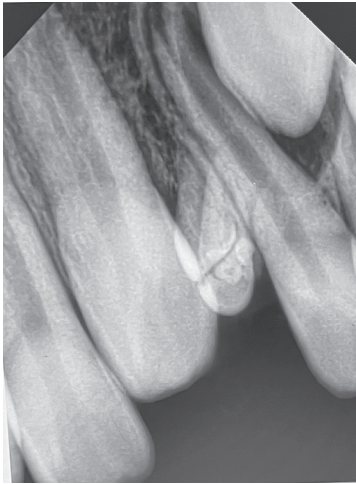


Fig. 2: RVG showing the presence of odontoma



Fig. 3: Surgical exposure of odontoma

or more distinct masses or particles that bear no similarity to the tooth are the particulate type. They consist of hard dental tissues. Particles and denticles are together in denticuloparticle type. They are frequently present in the incisor-canine region of the jaw. They are malformed tooth-like structures or denticles, which are well-organized of different structures enclosed by thin radiolucent zone.<sup>8</sup> Histopathologically, they can be seen as structures like a tooth with central pulp tissue core that are enclosed in sheaths of dentin and partly enclosed by enamel surrounded by a follicle-like fibrous capsule surrounding a normal tooth. Though odontoma has slow growth potential but it still has to be removed as it consists



Fig. 4: Extracted odontoma



Fig. 5: Postoperative image after 1 week of follow-up

of various dental preparations which may lead to cystic changes, which get in the way of permanent tooth eruption and results in bone destruction.<sup>9</sup> Since the lesion has a very low incidence of recurrences, surgical excision of the lesion is the treatment of choice. The removal of a lesion is an uncomplicated surgical procedure as it is an encapsulated tumor, but its complete removal requires special care to prevent a recurrence. This is critical, especially in immature complex odontomas. They can be enucleated easily; however, surgical excision of the tooth rarely damages the adjacent tooth, which is usually divided by a septum of bone. Rarely due to the extension of the odontomes, the neighboring tooth gets disturbed during the excision of the lesion.<sup>10</sup> Removal of obstructions like odontome results in a spontaneous eruption of the impacted tooth. Another approach which is being carried out is unerupted tooth exposure during surgery and placing bonded attachment along with ligatures/e-chains for orthodontic traction so that it will speedup eruption process. This could result in the weakening of the gingival margins, insufficient gingival tissue attachment, and a disparity in gingival level as compared to the neighboring teeth and the exposed tooth.<sup>11</sup>

## CLINICAL SIGNIFICANCE

If odontomas are diagnosed early, it helps in less complex treatment protocols, which gives less financial burden for the patient. Every other patient who comes with an unerupted tooth has to go for a radiographic evaluation which will be helpful in identifying pathologies like odontoma, which is usually asymptomatic. Along with the radiographic evaluation, histopathological examination helps in confirming the diagnosis.

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