



## Compound Odontomas: A Report of Three Clinical Cases

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<b>Article History</b>	<b>Abstract</b>
Received: 06 June 2023 Revised: 05 August 2023 Accepted: 11 August 2023	<p><i>Odontomas are the most common benign odontogenic tumors. They appear at any age with a peak in young patients. They are made up of dental tissues: enamel, dentin, cementum and pulp, and can be classified into compounds and complexes depending on whether or not they exhibit morphodifferentiation. They generally occur asymptotically and are diagnosed as a finding in routine radiographs, however, on many occasions they alter the process of tooth eruption and this is the reason why the patient seeks a dentist's consultation. It is important to establish an individualized treatment plan to avoid aesthetic and functional sequelae. In this study, three clinical cases of Composite Odontomas are described, two of them in relation to retained permanent teeth, which underwent surgical treatment. One case also required orthodontic treatment. The diagnoses were corroborated by histopathological studies, concluding that it is necessary to investigate the presence of these tumors before the absence of teeth in the oral cavity.</i></p>
<b>CC License</b> CC-BY-NC-SA 4.0	<b>Keywords:</b> Compound Odontomes, Odontogenic Tumors, Therapy

### 1. Introduction

It was Paul Broca, in 1867, who coined the term Odontoma to refer to any tumor or pseudo-tumor lesion of odontogenic origin. Over the years, other odontogenic neoplasms have been described by different authors. According to the classification of the World Health Organization (WHO), in 2017, odontomas are considered within the group of benign tumors that have both epithelial and mesenchymal tissue. It has also been defined as a hamartomatous appearance consisting of hard tissues such as enamel, dentin, with different proportions of pulp and cement (Cabo, 2021).

They are unique to the jaws and mandible.

Odontomas are the most frequent odontogenic tumors in America and Europe, but not in Asia or Africa, which suggests an origin related to ethnic or racial characteristics (Martínez-Morales et al., 2018). According to Mosqueda and collaborators they can be formed from the dental lamina (both pre-functional and post-functional), the basal cell layer of the gingival epithelium, the dental papilla, the

dental follicle, the periodontal ligament and by odontoblastic hyperactivity. There has also been talk of a relationship with trauma, infections and inflammation and hereditary syndromes (Del Rio et al., 2017).

Odontomas are classified according to their organization and degree of alteration of odontogenic cells into Compound Odontomas and Complex Odontomas. In the compound, morphodifferentiation and histodifferentiation are observed with the appearance of structures reminiscent of amorphous teeth called denticles. In the complex there is only histodifferentiation, with the formation of a disorganized solid mass of hard and soft dental tissues, without appearing to be a tooth (Thistle et al., 2016; Sharma & Prabhadevi, 2011).

Odontomas constitute approximately 22% of all odontogenic tumors, the most common being compounds. They mainly affect at an early age, between the second and third decade of life, although they are also reported very frequently in children. The compounds are mostly described in the anterior maxillary sector, while the complexes do so in the premolar region of the mandible. Some studies have reported both types of odontomas in the maxillary sinus, mandible branch, subcondylar and mental region.

They usually run asymptotically and constitute a radiographic finding, however, in case of symptoms the main complaint that brings the patient to consultation is the retention of a permanent tooth. Also, in case of excessive growth they can cause an increase in volume with the consequent asymmetry (Levi-Duque & Ardila, 2019; Marra et al., 2021). Takashima et al. presented three cases of odontomas associated with unerupted temporary teeth (Takashima et al., 2018).

Radiographically in compound odontomas the lesions are usually unilocular and contain multiple radiopaque structures. The denticles are almost always monoradicular and each of them has its own fibrous sac. The entire lesion is surrounded by a capsule of connective tissue, which is what gives the thin radiolucent band on x-rays. The complexes have the appearance of a solid radiopaque mass that presents some modularity and are surrounded by a thin radiolucent zone. They are unilocular, and are separated from normal bone by a clear line of corticisation (Falkinhoff & Garcia, 2019; Rubio et al., 2020; Fomenko et al., 2020).

Currently, it is generally accepted that odontomas are subject only to surgical treatment, but issues related to surgical treatment methods, the scope of intervention, the secondary deformities that arise, make odontomas continue to be a relevant health problem (Preotease & Preotease, 2018).

## **2. Results and Discussion**

### **Presentation of cases**

#### ***Case 1***

There is a male patient, 32 years old, with a history of good health, who comes to the UAO Uniandes because "he is missing a tooth from below". Extraorally, there are no data of interest. Intraoral clinical examination showed the absence of the dental organ 4.2, no other positive sign. Periapical, occlusal and panoramic radiographs are indicated, observing multiple radiopaque shadows surrounded by a radiolucent halo in the anterior mandibular sector compatible with denticles and 4.2 included in a horizontal position.



Figure 1 Panoramic X-ray

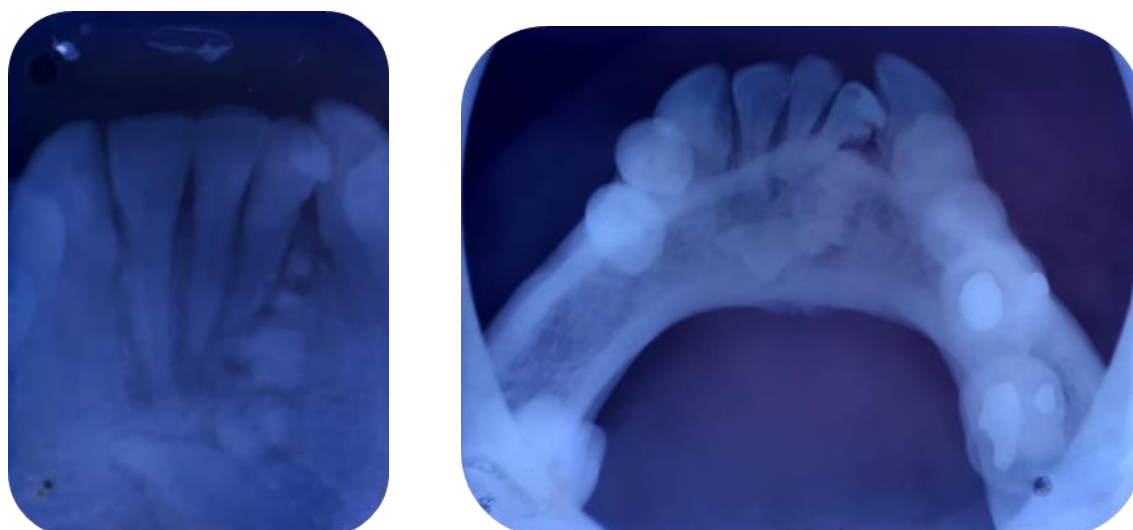


Figure 2 Periapical Rx Figure 3 Occlusal Rx

Surgical treatment of the lesion was performed by means of a complete Newman incision, mucoperiosteal flap lift, ostectomy, 4.2 exodontia and denticle enucleation and placement of platelet-rich fibrin to fill the large bone defect. It was sutured. The histopathological result confirmed the diagnosis of Composite Odontoma of the jaw. The patient continues to be followed in consultation without complications.

### **Case 2**

We present a case of a 9-year-old boy, who is brought to private consultation by his mother, due to a missing permanent tooth. On interrogation, no symptoms or relevant history were found.

Extraorally, the physical examination showed no positive signs. Intraorally it was possible to verify absence of 2.1. Imaging studies were requested, showing radioopaque shadows surrounded by a radiolucent halo, in relation to 2.1 retained, with presumptive diagnosis of compound odontoma.

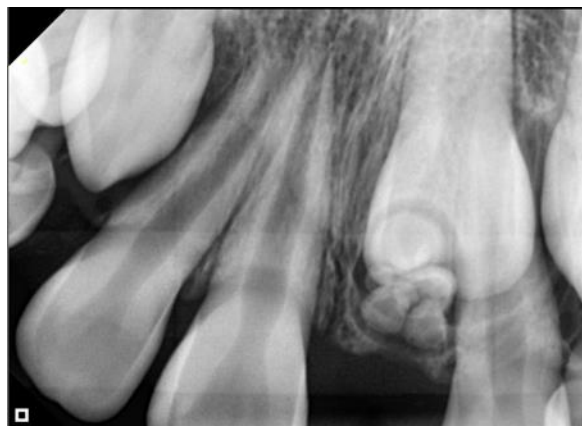


Figure 4. Periapical Rx

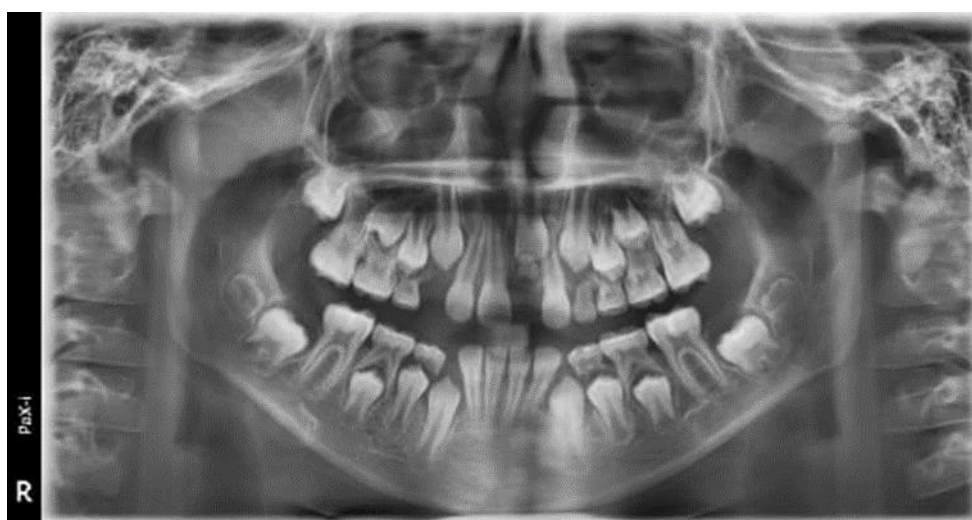


Figure 5 Rx Panoramic

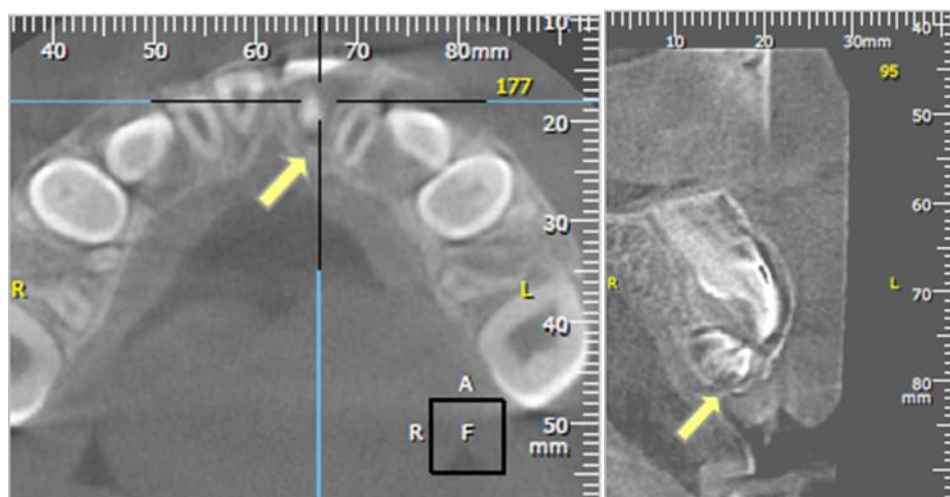


Figure 6 Oral Tomography

Enucleation of the denticles was performed by palatine fenestrated incision, mucoperiosteal flap lift, ostectomy, and button was placed for treatment of orthodontic rash of 2.1. The histopathological study corroborated the diagnosis of maxillary compound odontoma.

### Case 3

Male patient, 42 years old, with a history of good health, who comes to the Orthodontic consultation due to poor alignment of the lower teeth and is referred to our private practice for radiographic finding. Asymptomatic. Negative extraoral and intraoral physical examination.



Figure 7 Panoramic X-ray



Figure 8 Oral tomography

The Rx shows a radiopaque image in the anteroinferior sector, specifically between 4.2 and 4.3 compatible with supernumerary tooth or Composite Odontoma.

The lesion was treated by Partial Newman incision, mucoperiosteal flap was lifted, osteotomy with surgical drills and enucleation. Platelet-rich fibrin was placed in the surgical bed. The histopathological result was Composite Odontoma of the mandible.

### Discussion

Da Silva et al., in a 20-year study in Brazil, concluded that the teeth most impacted by odontomas were the lower canines, followed by upper incisors and upper canines, in that order. Which partially coincides with our cases (da Silva et al., 2019).

Our patients came asymptomatic, two of the three worried about the absence of a permanent tooth, which according to the literature is the generality. However, in a case presented by Balaji and Balaji, in 2021, a patient suffered pain and sensation of inferior hemilip paresthesia from a complex odontoma related to inferior alveolar nerve (Balaji, & Balaji, 2021).

The imaging studies indicated in our patients were sufficient to make a presumptive diagnosis and assess the location of the lesions and their relationships with adjacent teeth and structures, to correctly plan the treatment plan. Due to the characteristics of these odontogenic tumors, the usual images of denticles surrounded by a radiolucent halo could be observed. However, Watanabe et al. once described a patient with atypical radiolucent lesions, whose histopathological study found non-calcified enamel and diagnosed it as a developing odontoma (Watanabe et al., 2020).

The presumptive diagnosis should always be corroborated with histopathological studies (Enríquez et al., 2019).

### 3. Conclusion

Odontomas are odontogenic tumors that occur frequently in the practice of General Dentistry, mainly causing delays in tooth eruption or as a finding in routine x-rays. It is important to diagnose them as early as possible to give them surgical treatment and follow-up to avoid aesthetic and functional sequelae.

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