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CASE REPORT

Erupted Compound Odontoma Associated with Missing Tooth: A Rare Case Report

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ABSTRACT

Odontomas are one of the most frequently found odontogenic tumors that consist of dental tissues. Odontomas have been classified into two types: compound and complex odontomas. They are usually discovered on routine radiographic examination. In rare cases, the odontoma erupt into the oral cavity, called an erupted odontoma. The first case was published in 1980, and since then, there have been not more than 50 cases being reported in the literature. Most of the reported cases are erupted complex odontoma. This case report represents a rare case of an erupted compound odontoma in a young patient who came with the complaint of esthetics in the lower left posterior teeth.

Key words: compound odontoma, missing tooth, odontogenic tumor, orthodontics

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INTRODUCTION

Odontomas are mixed, odontogenic tumors. Odontomas have been classified into two types: compound and complex odontomas. The etiology of odontoma has not been fully understood. Potential causes list inflammation or chronic injury experienced during odontogenesis. Other probable factors include genetic issues such as odontoblastic hyperreactivity, Gardner syndrome, or Hermann syndrome. Although odontomas are odontogenic tumors, the mechanism of their formation is different from that of tooth formation, as there is no periodontal ligament around the root.¹

A compound odontoma is composed of small, orderly patterned, tooth-like structures and tissues, such as enamel, dentin, cementum, and pulp, whereas a complex odontoma forms an irregular mass in a sophisticated pattern.²⁻⁴ Some specialists consider compound odontoma to be included in the category of supernumerary teeth.⁵ It is usually asymptomatic and incidentally found on a routine dental radiographic examination. This lesion is usually asymptomatic and has slow and painless growth.⁶ Bone expansion is observed in a substantial number of cases.⁷

Also, other common signs are prolonged retention of deciduous teeth, impacted permanent teeth, and sometimes malpositioned adjacent teeth. It is also discovered in relation to a missing tooth.⁸ Infrequently, odontomas present erupting in the mouth, generally spontaneously, but sometimes being linked to a history of traumatic injury in its area.⁹⁻¹¹ This is the report of a rare case of a patient with erupted compound odontoma, which is being presented with clinical, radiographic, and microscopic evaluation, and treatment.

CASE REPORT

An 18-year-old female visited our oral medicine clinic with the chief complaint of an undesirable appearance of her lower left teeth. Intraoral examination revealed a white-colored tooth-like structure erupting into the oral cavity. It was located in the left second mandibular premolar region. The left second mandibular premolar was unseen in the oral cavity without a history of extraction. The surrounding mucosa was normal, and there were no signs of pain, infection, erythema, or ulceration (Figure 1).



Figure 1. Intraoral image of erupted compound odontoma area of the mandibular left second premolar.



Figure 2. A periapical radiograph showing multiple, small, tooth-like, radiopaque structures in the area of the left second mandibular premolar with no permanent tooth bud.

A periapical radiograph showed multiple, small, tooth-like, radiopaque structures in this area, with no tooth bud formation of the left second mandibular premolar (Figure 2). Cone-beam computed tomography (CBCT) was recommended to obtain a more precise diagnosis. The CBCT examination revealed a highly mineralized tumor composed of multiple growths with radiopacity similar to tooth structures (Figure 3).

Clinical and radiographic examinations allowed the diagnose of an erupted compound odontoma in the mandible. The treatment consisted of a simple extraction, followed by histopathological study. The microscopic finding of this odontoma revealed multiple small tooth-like structures composed of cementum, enamel matrix, and dental pulp, which was diagnosed as a compound odontoma (Figures 4, 5). During follow-up, the progression was good. The postoperative radiograph revealed complete removal of all denticles and normal healing (Figure 6). The edentulous area of 35 was planned for orthodontic treatment.

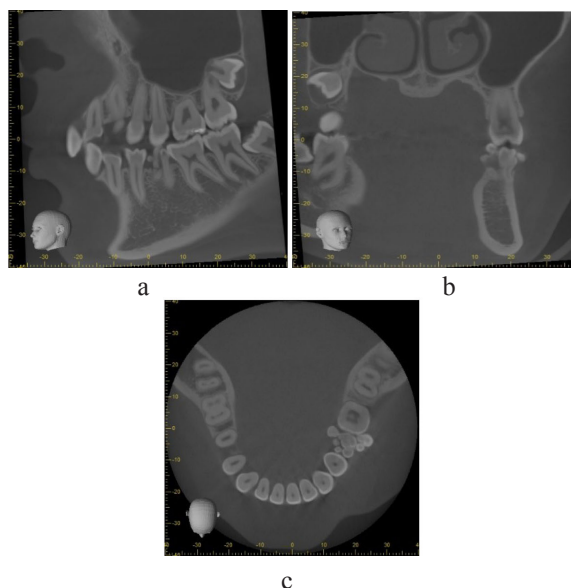


Figure 3. Sagittal (a), coronal (b), and axial (c) CBCT images showing a compound odontoma area of 35



Figure 4. Excised multiple small tooth-like structures.

DISCUSSION

Odontomas are the most commonly found odontogenic tumors and are usually discovered incidentally on radiographs. It is now more widely accepted that these represent hamartomas rather than tumors.³ Odontomas are usually found in the second decade of life. Compound odontomas mostly found in the anterior region and related to ad impacted or missing tooth. However, in this case report, the lesion was erupted and related to the missing tooth in the posterior region, which was a rare occurrence.

Erupted odontomas are rare types of odontomas and may be intraosseous or extraosseous, thus extending the list of types of odontomas. The exact cause of

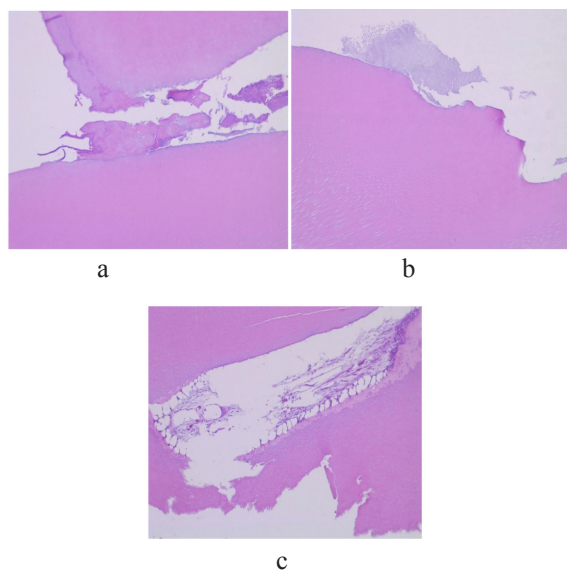


Figure 5. The microscopic finding revealed multiple small tooth-like structures composed of cementum (a), enamel matrix (b), and dental pulp (c), which was diagnosed as a compound odontoma (H & E, X400).



Figure 6. Follow-up panoramic radiograph revealed complete removal of all denticles and normal healing.

odontomas is controversial, but it has been suggested that genetics, infections, inflammation, trauma, or even hyperactivity of odontoblasts may play a role in their development. It is likely that resorption of the edentulous part of the alveolar process plays a role, or reactive growth of the capsule may lead to this situation.¹² Odontomas are generally intraosseous lesions, though in exceptional cases, the odontoma may spontaneously erupt into the oral cavity.^{11,12}

The first case of an erupted odontoma was described in 1980 by Rumel et al.¹³ Several studies have examined a large series of erupted odontomas. Of these reported cases, most are the complex type.^{14,15} Odontomas usually are asymptomatic. Clinical implications may include prolonged retention of the primary tooth, an unerupted permanent tooth, pain, cortical bone expansion, and tooth displacement. Pain and swelling are the common symptoms in erupted odontoma, followed by a malocclusion.¹⁶ In the present case,

however, the patient complained about the esthetic and cleaning without pain or swelling. It should be noted that although odontomas are usually asymptomatic, their eruption into the mouth can give rise to pain, inflammation, and infection. Ferrer et al.¹⁷ reported the case of a 22-year-old woman with several infection episodes associated with an erupted odontoma in the upper maxilla, with malaise, fever, pain, inflammation, and suppuration. Following broad-spectrum antibiotic treatment of the infection (amoxicillin and clavulanic acid, clindamycin), surgical resection of the odontoma was performed.

Radiographically, erupted compound odontomas present as radiopaque tooth-like structures, which represent normal dental tissues, such as enamel, dentin, and pulp, located outside the alveolar bone. In this case, surgical removal was performed. Histopathologic findings were in accordance with the radiographic diagnosis. The clinical presentation of the mini-tooth and radiopaque mass on the radiograph is suggestive of multiple small tooth-like structures and is pathognomonic for a compound odontoma. The differential diagnosis may not be necessary.

Erupted odontomas are generally seen in older people. However, for this report, it was found in an adolescent. At younger ages, eruption might occur because of bone remodeling that might have resulted from the presence of dental follicles.

CONCLUSION

Odontomas rarely erupt into the mouth and tend to be associated with impacted teeth. They are benign; however, their eruption into the oral cavity can cause pain, inflammation, infection, and affect the esthetic concerns of the patient. The treatment of choice is the surgical removal of the odontoma, followed by the histopathological study to confirm the diagnosis. In the present report, the treatment plan after the removal of the odontomas is an orthodontic treatment to resolve the patient's esthetic problems.

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CONFLICT OF INTEREST

The authors declare no competing interests with regards to the authorship and/or publication of this article.

ETHICS APPROVAL

This case report was approved by our institute review board (IRB No. 0963/62). Consent was obtained to publish pictures of the individual involved in the case report of this article. Identity of the individual could not be detected in the figures.

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