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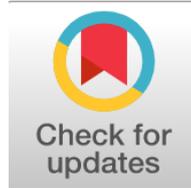
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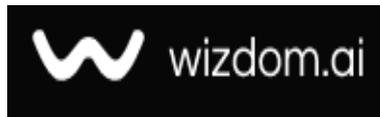
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Bilateral Compound Odontoma in Posterior Maxilla in Dr Wahidin sudirohusodo. Public and Teaching Hospital, Mojokerto, Indonesia : A Case Report

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Abstract

Odontoma at 24,9%, is the second most common odontogenic tumors of the jaws after ameloblastoma, and it occurs more in children than adults. It is often asymptomatic and accidentally found on the patients with tooth loss or malposition. There are two types of odontoma based on its form, namely compound odontoma and complex odontoma. Odontoma is treated by conventional surgery. In general, recurrences do not occur in these cases. In this report, odontoma was found bilaterally in posterior maxilla which is a rare case because mostly compound odontoma is reported to occur in the anterior maxilla. Case Report: A 35-year-old man with no oral complaints came for a consultation before undergoing orthodontic treatment. OPG examination was performed and there were lesions that led to the diagnosis of compound odontoma. Furthermore, odontoma excision was performed and impacted teeth were removed from the patient Conclusion: Although most of odontoma cases are asymptomatic, early diagnosis and treatments are required to minimize the occurrence of complications and improve the prognosis of treatment.

Highlights:

- Odontoma is the second most common odontogenic tumor after ameloblastoma.
- Case involves rare bilateral posterior maxilla compound odontoma.
- Early diagnosis prevents complications and improves prognosis.

Keywords: Odontoma, Hamartroma, Odontogenic tumor, Benign tumor

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Introduction

In 1867, Paul Boca came up with the term —odontoma which means a tumor formed by the overgrowth or transitory of complete dental tissue which eventually turning into tumor-like malformations (hamartomas) containing tooth-forming tissue. Odontoma is formed by the growth of completely differentiated epithelial and mesenchymal cells that give rise to ameloblasts and odontoblasts. It is not considered as neoplasm because the epithelial and mesenchymal cells of an odontoma may appear normal [1-4]. WHO classified the type of odontoma based on the degree of differentiation of odontogenic cells. When differentiation disturbance occurs and an amorphous mass separated by connective tissue from the surrounding bone is formed, it is called complex odontoma. When odontomas consist of tooth-like structures arranged in typical patterns, it is called compound odontoma [2-7]. However, there is also can be found a case of mixed odontoma, which is one lesion of odontoma consists of two types of it [4,5]. Both types of odontoma are considered benign [5].

In general, patients with odontoma are asymptomatic and are accidentally diagnosed during routine checks or during a delayed eruption of permanent teeth or, more rarely, of milk teeth, except in a case of big-sized odontoma lesion, it can cause inflammation or swollen jaw [2,3,5]. In addition, there are reports of cases of erupting odontomas causing patients to feel aesthetically disturbed. On radiographs, these lesions appear as multiple radiopaque masses, which may be denticles or amorphous, and surrounded by a band of radiolucencies around them. Odontoma tends to be located between the roots of erupted teeth, between the deciduous and permanent dentition, or obstructing the eruption of permanent teeth [2,4]. On histological examination, the odontoma of several dental elements is dominated by enamel and dentin, followed by cementum and sometimes pulp tissue [3,6].

Odontoma at 24,9%, is the second most common odontogenic tumors of the jaws after ameloblastoma, and it occurs more in children than adults[4,7]. There is no difference in the probability of occurrence between the sexes of men and women, but there is a report of predilection of complex odontoma in women[3-5]. The case of compound odontoma cases is reported most often in the anterior maxilla region while complex odontomas is most often found in the posterior mandibular region, especially around the second and third molars[3-5,9].

The etiology of odontoma is yet unknown, but some studies conduct that odontoma can occur locally because of local trauma, periodontal Malassez remains, inflammatory processes, and chronic infections during odontogenesis, or hereditary syndromes such as Gardner's syndrome and Hermann's syndrome[2,3,5,6,9]. In addition, there is a possibility that the dental lamina disintegrates into clumps of cells and becomes an important factor in the formation of odontoma[10]. The removal of odontoma can be done with conventional surgery[10].

Method

This is a qualitative case report research. The research subjects is patients with Bilateral Odontoma

Data collection technique is observation and the instrument is chlinical and radiology examination,.

Tehnique of this research is Qualitative data analysis technique

Case

A 35-year-old man came to the dental clinic at Dr. Wahidin Sudirohusodo Hospital, Mojokerto City, Indonesia before undergoing an orthodontic treatment. His general state was good, had no systemic disease and had no complaints in the oral cavity. On intraoral examination, it was found that several teeth had rotated and no third molars were visible in the upper and lower jaw, there was no swelling or redness of the gums. After the clinical examination, the patient was directed to take an orthopantomogram (OPG) photo and returned 1 week later. In figure 1, multiple radiopaque mass of a typical shape surrounded by a narrow radiolucent area seen in third molar dekstra n sinistra

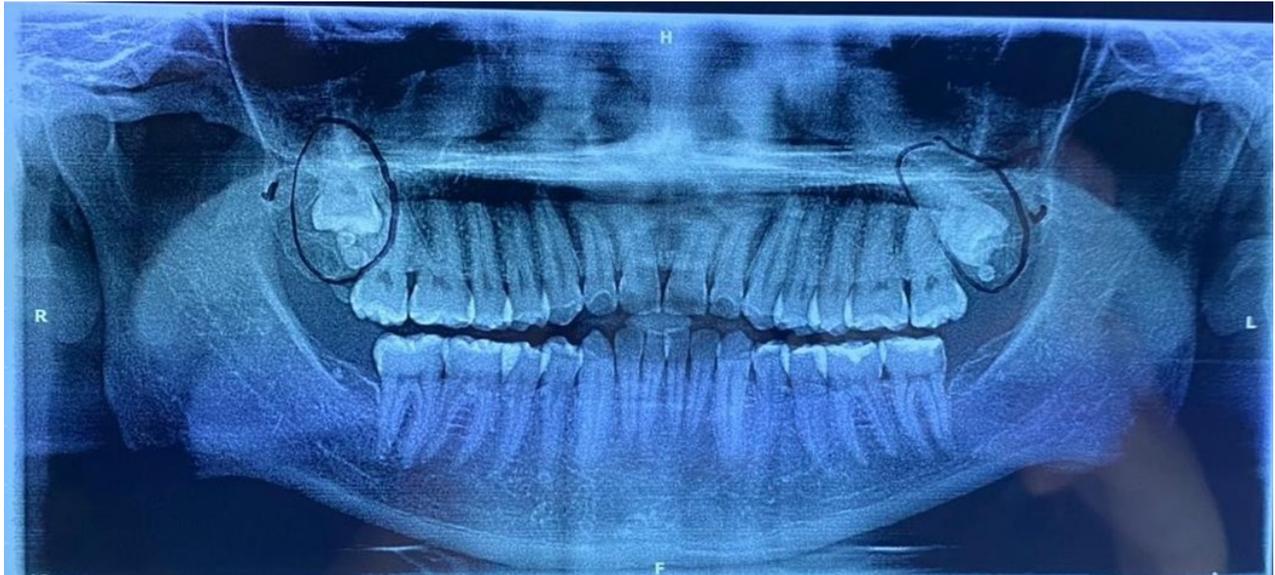


Figure 1. OPG before surgery

A surgery was done under general anesthesia. Excision of the lesion was carried out, the impacted tooth was removed and then sutured. Further histological examination was performed to confirm the diagnosis. Figure 2, mass of odontoma after surgery seen like multiple small tooth which is characteristic of compound odontoma



Figure 2. Odontoma after surgery was performed

Discussion

Odontoma is classified as benign tumor that develop slowly and painless. However, there is a difference in characteristic of each type which the compound odontoma grows more aggressively whereas complex odontoma has the characteristic of more expansive[3,6,11]. As found in this case report, odontoma is often found accidentally during the second decade of life on the patients with tooth loss or malposition even though the patient's age in this case is 35 years old[2,3,6]. Although it is asymptomatic, it does not rule out the possibility that this incident is related to complicated tooth impaction and might cause swelling or pain[2]. Odontoma is also reported related with root resorption on the surrounding teeth[7]. In this case, odontoma was found bilaterally which is a rare case because mostly compound odontoma is reported to occur in the anterior maxilla[3-5,9].

A case report of expansive odontoma conducts that the initially small swelling grows larger gradually without any history of pain or discomfort. On palpation, a mass of firm consistency was obtained, there is no tenderness or expansion of the cortical plate[12]. A case of bilateral expansion of odontoma is also reported to cause a difficulty in opening the mouth as a result of large swelling blocking access to the mouth to open[1]. Another case that can occur although it is rare is odontoma that is erupting to oral cavity, often followed by pain and infection of surrounding mucosa[2]. Odontoma eruption differs from teeth eruption due to the absence of periodontal ligament. The increased size causes the odontoma to separate from the bone and is pushed to occlusal[10,13,14]. The eruption force of impacted teeth is also considered to be the cause of odontoma is pushed into the oral cavity. Apart from being active, an erupting odontoma can also occur passively, for example in edentulous patients who experience decreased alveolar bone and cause the odontoma to be exposed[10].

In radiographs, odontoma is seen as a radiopaque mass of a typical shape surrounded by a narrow radiolucent area[3,6]. The radiopacity is affected by the mineral density and the stage of odontoma, which in the initial stage it appears entirely radiolucent because there is no mineralization process yet. Partial calcification occurs in the second stage and in the final stage, complete calcification occurs a mature odontoma is formed[2,10]. Some differential diagnosis on radiographs of odontoma are ossifying fibroma, cementoblastoma, and ameloblastic fibro-odontoma[3]. The diagnosis of odontoma is sufficient by using OPG, but in some cases CBCT can be used to differentiate odontoma from other tumors such as cementoid tumors. In addition, CBCT also helps visualize lesions and facilitates planning of operations[13]. Histologically all dental hard tissues such as enamel, dentine and cementum, and sometimes also pulp tissue, can be seen[5].

The treatment of odontoma is done with conventional surgery, by removing odontoma tissue and the surrounding connective tissue, and in some cases also followed by extracting the impacted teeth[2,4,12]. Capsule consists of connective tissue that coat the odontoma facilitates the removal process[3]. One case of odontoma lesion consists of 4-37 denticles, and there is a report of odontoma with a total of 232 denticles[9]. The case of recurring odontoma is rarely found, but in cases of children it is advisable to carry out further monitoring, as well as special care may be taken for complex odontoma as it may show relapse[3,11]. There is also a case report of the use of intraoral endoscopy to facilitate visualization of odontoma removal on the lingual side of the mandible[7].

Early diagnosis and treatment is recommended because it allows for a more conservative surgical plan, to avoid degeneration of the lesion and to retain the vitality and the placement of adjacent tooth which results a better prognosis[2,5]. Retrieval of odontoma tissue allows impacted teeth to have a pathway for eruption, especially in teeth with incompletely closed roots, so that they have the possibility of spontaneous eruption[2,15]. Several cases of odontoma are followed by orthodontic traction to facilitate eruption of the impacted tooth, or implementing preventive and interceptive orthodontics, if necessary, prevents future malocclusion[11,15]. The use of bonegraft is also can be done to help bone regeneration following the odontoma removal[4]. In this case, the impacted tooth was considered not functional in masticatory and no bone graft was performed.

Conclusion

Although this case is asymptomatic, early diagnosis and treatment are required to minimize the occurrence of complications and improve the prognosis of treatment.

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