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Surgical Removal of a Complex Odontoma with Follow-Up: A Case Report

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ABSTRACT

Odontomas are the most common benign odontogenic tumors (35%-76%). Originating from an alteration of differentiated mesenchymal and epithelial odontogenic cells; they have the capacity of forming enamel, dentin and cement. They are classified into compound and complex, in a 2:1 relationship, the difference between both being dental tissue organization. Etiology is still unknown but relation to infections, hereditary anomalies, odontoblastic hyperactivity and trauma has been explored. Since these tumors are asymptomatic, 75% of all cases are diagnosed before the second decade of life, due to a delay in eruption of permanent teeth. Treatment of choice for these tumors is enucleation, attempting to preserve the tooth; relapse is very uncommon. Diagnosis of odontomas is usually accidental on radiographic examination. The purpose of this article is to present and discuss the case of a 70-years-old female patient who complained of replacing her missing teeth. A Radio-opaque calcified mass was revealed on a radiograph and was surgically removed. Here, we report the case of a painless, complex odontoma located in the right anterior mandible.

KEYWORDS

Odontoma; Complex odontoma; Benign tumor; Case report

INTRODUCTION

Odontomas are the most common odontogenic tumor of benign origin and often present in the posterior mandible [1]. Due to the absence of symptoms, these are diagnosed usually on the routine radiograph. Rarely, it shows symptoms like an expansion of the cortical plate, displacement of the adjacent tooth. Odontoma are classified taking into account organization and degree of alteration of odontogenic cells, there are two classifications: compound (CpO) and complex (CO) odontoma. Compound odontogenic tumor (CpO) exhibits morphological and histological differentiation, while complex odontogenic tumor (CO) only presents histological differentiation. In CpO multiple amorphous dental structures are formed (denticles), while in CO a solid mass of dental soft and hard tissues is formed, these tissues are haphazardly arranged and do not resemble the morphology of a tooth [2]. Although the etiology of complex odontomas is not clearly known, several theories have been proposed, which include trauma, infection, family history, and genetic mutation. Such odontomas may be discovered at any age, but the age with the greatest prevalence is the second decade of life [3]. These tumors

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have a slight male predilection and are commonly seen in the posterior mandible [4]. Complex odontomas are mostly asymptomatic in nature and are usually found in routine radiographic examinations [3].

CASE PRESENTATION

A 70-years-old female patient presented to our clinic wishing to replace her missing teeth. Medical history was non-contributory. Intraoral examination revealed a swelling on the alveolar ridge between the 43 and 32 with well-defined limits (Figure 1). Patient added that as the mass increased in size it displaced her teeth which later felt off. On palpation the mass was non-tender and hard in consistency with lingual cortical bone expansion. Also, tooth 31, 41, and 42 were missing. Radiographic examination using orthopantomogram revealed an extensive mixed radiolucent and radiopaque lesion, with well-defined corticated limits, measuring approximately 2 cm in the major diameter. The radiopaque area was amorphous, partially circumscribed by a thick, somewhat regular radiolucent halo (Figure 2). Based on this, as provisional diagnosis we thought of a complex odontoma and as differential diagnosis of an ameloblastic fibro-odontoma was raised.

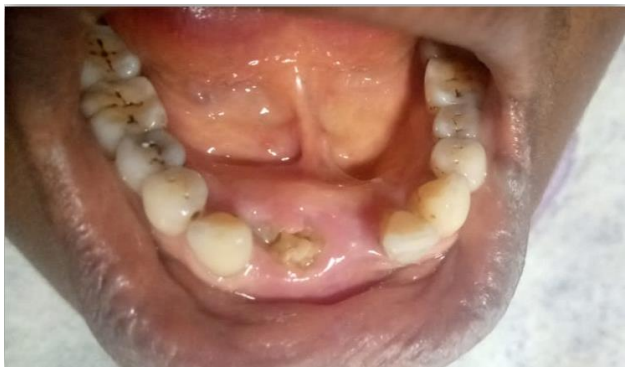

Figure 1: Intraoral clinical presentation of odontoma.

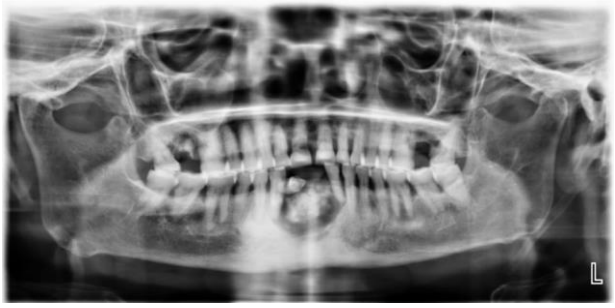

Figure 2: Orthopantomogram radiograph showing radiopaque mass of odontoma.

The lesion was surgically removed under local anesthesia, without any premedication. An Enucleation of the lesion was made with an intraoral access and the odontoma was elevated using a periosteal elevator in order to preserve the periosteum and mandibular basal cortical bone, which was quite thinned. The capsule of the lesion was curated. The excised specimen was rough and stony hard in terms of consistency (Figure 3). Unlike the conventional suturing of mucoperiosteal tissues after surgery in such cases from literature, the insufficient nature of mucoperiosteal flap tissues in our case prompted us to allow the cavity open. The surgical cavity was packed with gauze and the patient was seen every two days as an out-patient for dressing change. The interval for dressing change was alternated until surgical site was completely healed. Postoperative medication consisted of amoxicillin and analgesics for 7 days. Intraoral postoperative appearance of the surgical area 6months after surgery is uneventful (Figure 4).

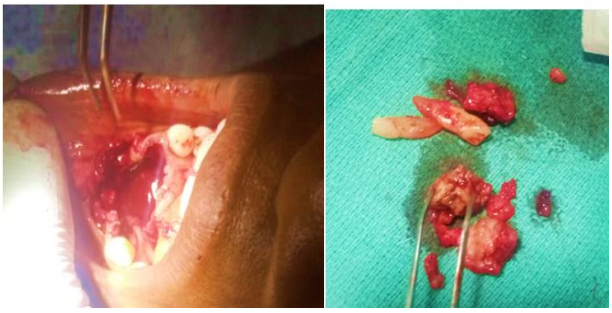

Figure 3: Surgical site after removal of odontoma and odontoma removed.

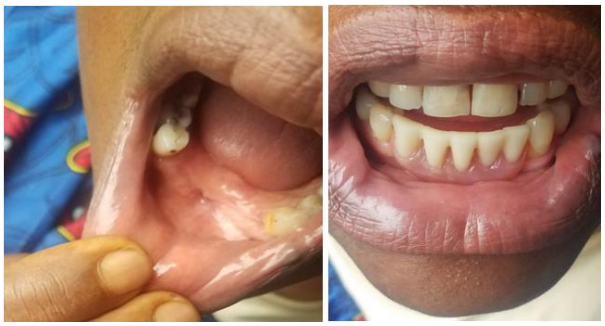

Figure 4: Healed surgical site after 6-months of follow-up and PRD in placed.

DISCUSSION

Odontomas are benign tumors which contain various component tissues of the teeth, and they are the most common odontogenic tumors which constitute 22% of all the odontogenic tumors of the jaws. There are two types of odontomas: complex odontomas and compound odontomas - the latter being twice as frequent as the former. Compound odontomas show a predilection in the anterior section of the upper maxilla, while complex odontomas are typically found in mandibular first and second molar region. Interestingly in this case, the complex odontoma was located at the anterior mandibular region. They may be discovered at any age, although less than 10% of them are found in patients over 40 years of age [5]. Various differential diagnoses of odontoma are ossifying fibroma, cementoblastoma, and ameloblastic fibro-odontoma. The etiology of complex odontomas is not clearly understood. However, several researchers have reported various etiological factors, including local trauma, infection, family history, and genetic mutation. They have also suggested that complex odontomas are inherited from a mutant gene or interference, possibly postnatal, with the genetic control of tooth development [6].

Complex odontomas are usually asymptomatic and are associated with changes such as malformation, impaction, delayed eruption, malposition, cyst formation, displacement, resorption of the adjacent teeth, and expansion of the cortical plate. Symptoms that may be present include numbness in the lower lip, frontal headaches, swelling in the affected areas, and facial asymmetry [7]. Pain is a rare symptom. In the present case, the patient presented with swelling and an expansion of the buccal cortical plate, which resulted in facial asymmetry.

Complex odontomas rarely erupt in the oral cavity; their eruption is different from tooth eruption: As the periodontal ligament is missing in the case of a complex odontoma, without the contractility of fibroblasts, an odontoma cannot erupt. Its increasing size may lead to sequestration of the overlying bone and hence, its eruption. Another reason could be the remodeling of jaw bones; for this, a dental follicle is required as it provides conductance and chemo-attraction for the osteoclast required for the eruption. Erupted complex odontomas are most often seen in the older population, but eruption at a younger age could be caused by bone remodeling that occurs due to the presence of dental follicles [3].

In this case, the patient was asymptomatic, there was slight cortical expansion lingually, the lesion enhanced the resorption of the mandibular 43 and 33 all of these were compatible with the literature. Symptoms that may be present include numbness in the lower lip, frontal headaches, swelling in the affected areas and facial asymmetry. The radiological appearance of complex odontomas depends on their development stage and degree of mineralization.

The first stage is characterized by radiolucency due to a lack of calcification. Partial calcification is observed in the intermediate stage, while in the third stage, the lesion usually appears radiopaque with amorphous masses of the dental hard tissue surrounded by a thin radiolucent zone corresponding to the connective capsule histologically [3]. Since our case was radiopaque with amorphous masses of the dental hard tissue and the radiolucent zone surrounding the lesion, the present lesion was considered to be completely mature and in the third stage. The absence of

cortication at the superior aspect of the mass in the radiograph shows the eruption of the mass in the oral cavity.

A differential diagnosis of complex odontoma must be established with lesion such as cementoblostoma, osteoidosteoma and cemento-ossifying fibroma. A cementoblostoma presents as a well-defined radiopaque mass attached to the tooth root and surrounded by a radiolucent rim. Osteoid osteomas are characterized by a small ovoid or round radiolucent area surrounded by a rim of sclerotic bone; the central radiolucency exhibits some calcification. Cemento-ossifying fibroma presents as a well-defined radiolucency with increasing flecks of calcification as it matures; it is not surrounded by a radiolucent rim and it is diffused with normal bone. Also, none of these is associated with an impacted tooth [8]. Complex odontomas rarely erupt into the mouth and tend to be associated with impacted teeth. Despite their benign nature, their eruption into the oral cavity can give rise to pain, inflammation, infection and ulceration but large odontomas can cause cortical expansion, facial asymmetry and traumatic ulcers. Therefore, it is important to diagnose these lesions as soon as possible and treat them appropriately as to avoid complications [9].

CONCLUSION

A rare case of complex odontomas has been reported. The most important and interesting feature in this case was that the odontoma erupted at the lower anterior region of the jaw which is a rare happening for complex odontomas. A surgical intervention was done and the odontoma was extracted and a partial removable denture was placed. Thus, it is important to do the proper diagnosis and timely management of the odontoma to reduce complications like tooth resorption, and bone abnormalities.

AUTHORS' CONTRIBUTIONS

Faustus Ajamah: Patient care, planning, design and writing of the case report.

Nkengateh Jorceline Tankeng: Planning and editing of the case report.

CONSENT

A written consent was taken from the patient in her vernacular language.

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COMPETING INTERESTS

The authors declare no competing interests.

REFERENCES

1. Bordini J, Contar CM, Sarot JR, et al. (2008) Multiple compound odontomas in the jaw: Case report and analysis of the literature. Journal of Oral and Maxillofacial Surgery 66(12): 2617-2620.
2. Tekkesin MS, Pehlivan S, Olgac V, et al. (2012) Clinical and histopathological investigation of odontomas: Review of the literature and presentation of 160 cases. Journal of Oral and Maxillofacial Surgery 70(6): 1358-1361.
3. Vengal M, Arora H, Ghosh S, et al. (2007) Large erupting complex odontoma: A case report. Journal of the Canadian Dental Association 73(2): 169-173.
4. Serra Serra G, Berini Aytés L, Gay-Escoda C (2009) Erupted odontomas: A report of three cases and review of the literature. Med Oral Patol Oral Cirugia Bucal 14(6): E299-E303.
5. Lakshmi Kavitha N, Venkateswarlu M, Geetha P (2011) Radiological evaluation of a large complex odontoma by computed tomography. Journal of Clinical and Diagnostic Research 5: 1307-1330.

6. Mupparapu M, Singer SR, Rinaggio J (2004) Complex odontoma of unusual size involving the maxillary sinus: Report of a case and review of CT and histopathologic features. Quintessence International 35(8): 641-645.
7. De Visscher JG, Güven O, Elias AG (1982) Complex odontoma in the maxillary sinus: Report of 2 cases. International Journal of Oral Surgery 11(4): 276-280.
8. Chrcanovic BR, Jaeger F, Freire-Maia B (2010) Two-stage surgical removal of large complex odontoma. Oral and Maxillofacial Surgery 14: 247-252.
9. Bagewadi SB, Kukreja R, Suma GN, et al. (2015) Unusually large erupted complex odontoma: A rare case report. Imaging Science in Dentistry 45(1): 49-54.