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Complex Odontoma of Maxilla: A Case Report

L. Kayal*, S. Jayachandran**, Khushboo Singh**

Abstract

Odontomes are most common type of odontogenic tumours & generally they are asymptomatic & discovered during routine radiography. This paper describes a case of complex odontoma associated with impacted permanent maxillary premolar with clinical, radiographic & microscopic findings. Surgical excision of the lesion was performed and follow up was done for 1 year. This paper also highlighted the significance of CT attenuation values as an adjunct to diagnosis.

Key Words: Complex odontoma; Impacted maxillary premolar; Computed tomography.

Introduction

Odontoma is the most common odontogenic tumour & comprises approximately 22% of odontogenic tumours of jaws [1]. These tumours are formed of enamel & dentin, but they can also have variable amount of cementum & pulp [2]. They are considered as hamartomatous malformations of both ectodermal and mesodermal cell origin [3]. According to WHO classification (2005), two types are: complex and compound odontoma. Compound odontomes are usually located in anterior maxilla and complex odontomes in posterior mandible. Hitchin suggested that odontomes are either inherited or an interference with genetic control of tooth development [4]. Trauma, infection or growth pressure may disturb biological mechanism that controls tooth development and may be regarded as source of odontoma [4]. It may be diagnosed at any age but usually detected

during first two decades of life [5,6]. Majority of cases are asymptomatic and seldom causes swelling, pain, suppuration, bony expansion, and displacement of teeth [7,8]. It is a benign lesion, but often causes disturbance in eruption of associated tooth [9,10,11]. The canines, followed by upper central incisors and third molars are most frequent impacted teeth [12]. Radiographically, complex odontoma appears as irregular mass of calcified material surrounded by a thin radiolucent area with smooth periphery, and compound type shows calcified structures resembling teeth in the center of a well defined radiolucent lesion. Odontomes are treated by conservative surgical removal with little probability of recurrence [5,13].

Case Report

A 13 year old male child was referred to the department for swelling on palate in upper left back teeth region for the past 6 months which gradually increased to the present size. Medical history was insignificant. No history of trauma was present. Dental history included history of extraction. Extraoral examination revealed hard swelling present in left maxillary region having ill defined margins with normal overlying skin and non tender on palpation. Intraoral examination revealed permanent dentition except for the presence of retained left primary maxillary

Author's Affiliation: *Reader, Dept of Oral Medicine and Radiology, Tamil Nadu Govt. College oand Hospital, Chennai, ** Prof & Head, Dept of Oral Medicine and Radiology, Tamil Nadu Govt. College oand Hospital, Chennai, ***Postgraduate Student, Dept of Oral Medicine and Radiology, Tamil Nadu Govt. College oand Hospital, Chennai.

Reprints Requests: Dr. L. Kayal, MDS, Dept of Oral Medicine and Radiology, Tamil Nadu Govt. College oand Hospital, Chennai.

E-mail: drlkayal.kumar@rediffmail.com

(Received on 18.07.2012, accepted on 04.08.2012)

second molar. Examination also revealed well defined hard swelling present on left hard palate not crossing the midline and extending to alveolar region buccally with obliteration of buccal vestibule producing alveolar bulge, overlying mucosa was normal, swelling was non tender on palpation, and was also associated with grade I mobility of teeth 24, 65, 26 and 27 [Figure 1, 2]. Aspiration was not attempted because of intact bone cortex in the entire region, no fluctuant area was present. On vitality testing, 24, 65, 26, and 27 were found to be vital. Based on clinical features, provisional diagnosis was given as benign odontogenic tumor and differential diagnosis was given as fibro-osseous lesion particularly fibrous dysplasia. Maxillary occlusal radiograph showed ill defined radiopaque lesion in left maxillary posterior region [Figure 3]. Panoramic radiograph revealed radiopaque mass in left maxillary posterior region with radiolucent rim and also impacted 25 [Figure 4]. Other areas were normal in panoramic radiographic. CT scan including axial and coronal view revealed hyperdense lesion closely placed to left maxillary premolar and molar region [Figure 5,6] and coronal view also showed the

presence of impacted 25. Hounsfield unit (HU) for the lesion ranged from 1344 to 1486. So seeing the HU value it was confirmed that the lesion is tooth like material because enamel and dentin have specific values which are >1500 H.U. and 1000-1500 H.U. respectively. CT attenuation levels have been reported to range from 34 to 513 Hounsfield (HU) depending on the fibrous tissue and bone content for fibrous dysplasia [14]. So based on CT features and HU value of the lesion, radiographic diagnosis was given as odontoma with impacted 25. Biochemical investigations were also done and serum calcium, serum phosphorus, alkaline phosphatase were within normal limits. The lesion was surgically removed under local anesthesia completely along with teeth 24, 65, 26, 27 as they were mobile and also impacted 25 as it was attached to the lesion [Figure 7]. The surgical specimen was submitted for histopathological evaluation. Post operative healing was satisfactory. Histopathological examination confirmed the diagnosis of odontoma. Clinical examination and panoramic radiograph after 1 year of follow up showed satisfactory healing and no evidence of the recurrence [Figure 8, 9].

Figure 1: Intraoral view showing alveolar bulge buccally



Figure 2: Intraoral view showing swelling on left palate not crossing midline



Figure 3: Maxillary occlusal radiograph showing ill defined radio-opaque lesion in left maxillary posterior region



Figure 4: Panoramic radiograph showing ill defined radio-opaque lesion with radiolucent rim and impacted 25



Figure 5: Axial section of CT scan showing hyperdense lesion in left maxillary premolar-Molar region

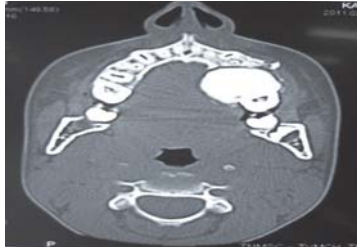


Figure 6: Coronal section of CT scan at the premolar area showing hyperdense lesion in left maxillary region with impacted 25



Figure 7: Photograph of the surgically excised specimen



Figure 8: Clinical photograph after 1 year of follow up



Figure 9: Panoramic radiograph after 1 year of follow up



Discussion

Odontomes are generally asymptomatic and are rarely diagnosed before second of life. Clinicians often encounter the problem of tooth impaction, which is defined as a situation where a tooth fails to erupt into a normal functional position by the expected time. Tooth impaction is encountered more commonly in permanent dentition and rarely in primary dentition [15]. Various etiologies have been proposed for tooth impaction which include odontomes, odontogenic tumours, ankylosis, trauma, dentigerous cyst. Among these factors, odontoma is the most common etiological factor. These lesions are commonly

small, seldom occur larger than a tooth. In this case report, lesion was larger than tooth. The treatment for odontoma is surgical removal, if they are excised early without disturbing underlying tooth, the eruption of the impacted teeth can be expected spontaneously or after orthodontic traction [7,16]. However, underlying impacted teeth are sometimes extracted in association with removal of odontomes [17]. In this case, lesion was surgically removed along with impacted 25 because it was attached to underlying mass. However every effort should be made to preserve impacted teeth. In general, if the root of impacted tooth is still developing, the tooth may erupt normally but once the root apex has closed, the tooth lose its potential to erupt [18]. Hisatomi *et al.* reported that the impacted tooth tend to erupt regardless of degree of root formation after removal of odontoma interfering with tooth eruption, although some teeth showed infraversion and/or crowding [19]. In conclusion, any pediatric patient who presents with delayed tooth eruption or tooth displacement with or without history of trauma, radiographic examination should be performed.

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