INTRODUCTION

The term “odontoma,” by definition alone, refers to any tumor of odontogenic origin. [1] They are considered as developmental anomalies rather than a true neoplasm. Paul Broca was the first person who coined the name odontoma in 1867. [2] Broca defined the term as tumors formed by the overgrowth of transitory or complete dental tissue. [3]

Odontomas are benign tumors of odontogenic origin consisting of both mesenchymal and epithelial dental elements. [3] The etiology of odontoma has been attributed to various pathological conditions such as local trauma, inflammation and/or infectious processes and hereditary anomalies (Gardner’s syndrome and Hermann’s syndrome). Persistence of a portion of dental lamina may be an important factor in the etiology of a compound odontoma. [4]

Most odontomas are asymptomatic; occasionally, however, signs and symptoms relating to their presence do occur. Histologically, they are composed of different dental tissues including enamel, dentine, cementum and in some cases, pulp tissue. [3]

According to the World Health Organization classification, odontomas are classified under benign tumors of odontogenic epithelium with odontogenic ectomesenchyme with or without hard tissue formation into complex odontomas and compound odontomas. A malformation in which all dental tissues are formed, but occurring in the less orderly pattern is complex odontoma. A malformation in which all dental tissues are arranged in a more orderly pattern than complex odontoma is compound odontoma. [1]

CASE REPORT

A 16-year-old male who was apparently healthy reported to us with the chief complaint of missing lower left front teeth. Medical history was noncontributory, and there was no hereditary disease in antecedents. Extraoral examination was unremarkable. Clinical intraoral examination revealed normal complement of teeth in upper arch and missing 31, 32 in the lower arch [Figure 1]. There was no inflammation, pain, erythema or ulceration of the overlying mucosa. On palpation, there was no swelling or tenderness found.

The radiographic examination revealed an ill-defined mixed radio-opaque and radiolucent lesion in the region of 31, 32 of approximately 1 cm × 1.5 cm in size surrounded by...
a thin radiolucent band [Figure 2]. Considering the clinical and radiographic presentation, a radiographic diagnosis of compound odontoma was determined.

**Surgical procedure**

Surgical removal of the odontoma under the local anesthesia was planned. A full thickness mucoperiosteal flap was raised extending from 33 to 43 region. Few tooth-like structures were seen immediately after raising the flap [Figure 3a]. The bone overlying the labial surface of the lesion was removed using #10 surgical bur and the calcified mass was exposed and removed. The flap was sutured with 3-0 silk [Figure 3b].

The excised tooth-like calcified masses [Figure 4] were sent for pathological evaluation. Ground sections of the tooth-like structures revealed pulpal space surrounded by dentin. The radicular dentin-like portion was surrounded by cementum [Figure 5a], whereas coronal dentin-like component was capped by enamel which on closer examination revealed fish-scale pattern [Figure 5b and c]. Hematoxylin and eosin stained decalcified sections of the tooth-like structures revealed pulpal space surrounded by dentin [Figure 6a], whereas the radicular dentin was surrounded by cementum [Figure 6b]. Soft tissue received along with the tooth-like structures revealed fibrocellular connective tissue lined by 2–3 layers of nonkeratinized epithelium [Figure 7a]. At areas, dystrophic calcifications and odontogenic islands were evident [Figure 7b]. At few areas, dentin-like structures with irregularly arranged dentinal tubules associated with globular masses of cementum were noticed [Figure 7c]. These features were suggestive of compound composite odontoma.

**DISCUSSION**

Odontomas are comparatively common odontogenic lesions and are generally asymptomatic.\(^1\) Compound odontomas are slow growing, expanding and (in most cases) painless lesions.\(^5\) These lesions are most commonly diagnosed before the age of 30 years with a peak in the second decade of life.\(^5\) Odontomas occur most frequently in maxilla than the mandible.\(^6\) These lesions are usually unilocular and contain multiple radio-opaque, miniature tooth-like structure.

Compound odontoma is usually located in the anterior region of the maxilla, over the crown of erupting tooth or between the roots of erupted teeth.\(^7\) Complex odontoma in return is more commonly found in the posterior mandibular region over impacted teeth.\(^8\)

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**Figure 1:** Intraoral examination showing missing 31 and 32

**Figure 2:** Orthopantomogram showing irregular ill-defined calcified masses in the lower anterior region

**Figure 3:** (a) Intraoperative view showing the placement of incision and reflection of full thickness flap which revealed few tooth-like structures immediately below the flap. (b) Intraoperative view after removal of tooth-like mass

**Figure 4:** Excised specimen revealing tooth-like structures
Odontomas are treated by conservative surgical removal, and there is little probability of recurrence. Ameloblastic fibro-odontomas and odontoameloblastomas show a great resemblance to common odontomas, especially on the radiographic examination. Therefore, it has been suggested that all specimens should be sent to oral pathologists for microscopic examination. Besides, proper patient care should include careful clinical and radiographical follow-up. Radiographic aspects of odontomas are characteristic. The complex odontoma appears as an irregular mass of calcified material surrounded by a thin radiolucent area with smooth periphery and the compound type shows calcified structures resembling teeth in the center of a well-defined radiolucent lesion. A periodontal and pericoronal space characteristic of unerupted teeth is seen around each tooth. A developing odontoma may be discovered by routine radiography, but sometimes may cause difficulty in identification due to lack of calcification.

Clinical differential diagnosis includes cementifying or ossifying fibroma, adenomatoid odontogenic tumor and calcifying epithelial odontogenic tumor. An odontoma is associated with unerupted teeth, is more radiopaque than ossifying fibroma and is discovered at much younger age. Adenomatoid odontogenic tumor is rarely seen as radiopaque lesion as the odontome and is commonly found in the maxillary lateral incisor and canine region. Calcifying...
epithelial odontogenic tumor is rare, is less radioopaque and develops in the midline. The other clinical differentials include periapical cemental dysplasia which is usually smaller than odontome and is limited to mandibular anterior region and fibrous dysplasia which usually has a mottled or a ground glass radiographic appearance with poorly defined borders.

The diagnosis of these lesions is commonly established on the occasion of routine radiographic examination and confirmed on histopathological examination. Literature suggested that odontoma once enucleated usually does not recur but in young children close monitoring is necessary. Early removal of the cause leading to delay in eruption is important for the appropriate development of dental arch. In addition, a careful follow-up and review of the case both clinically and radiographically to assess the eruption of the unerupted or impacted teeth is essential.

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**Conflicts of interest**

There are no conflicts of interest.

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