

### COMPOUND ODONTOME WITH UNERUPTED PERMANENT INCISOR

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#### Abstract

Odontomas are mixed odontogenic tumors composed of both epithelial and mesenchymal dental hard tissues. They are usually asymptomatic and are often discovered during routine radiography. A case of odontoma in a 21 year old man is described who presented with delayed eruption of upper central and lateral incisor teeth. The odontome was surgically removed followed by re-implantation of preserved extracted lateral incisor and a porcelain crown.

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**Key Words:** Odontoma, Impacted tooth, Re-implantation.

#### Case presentation

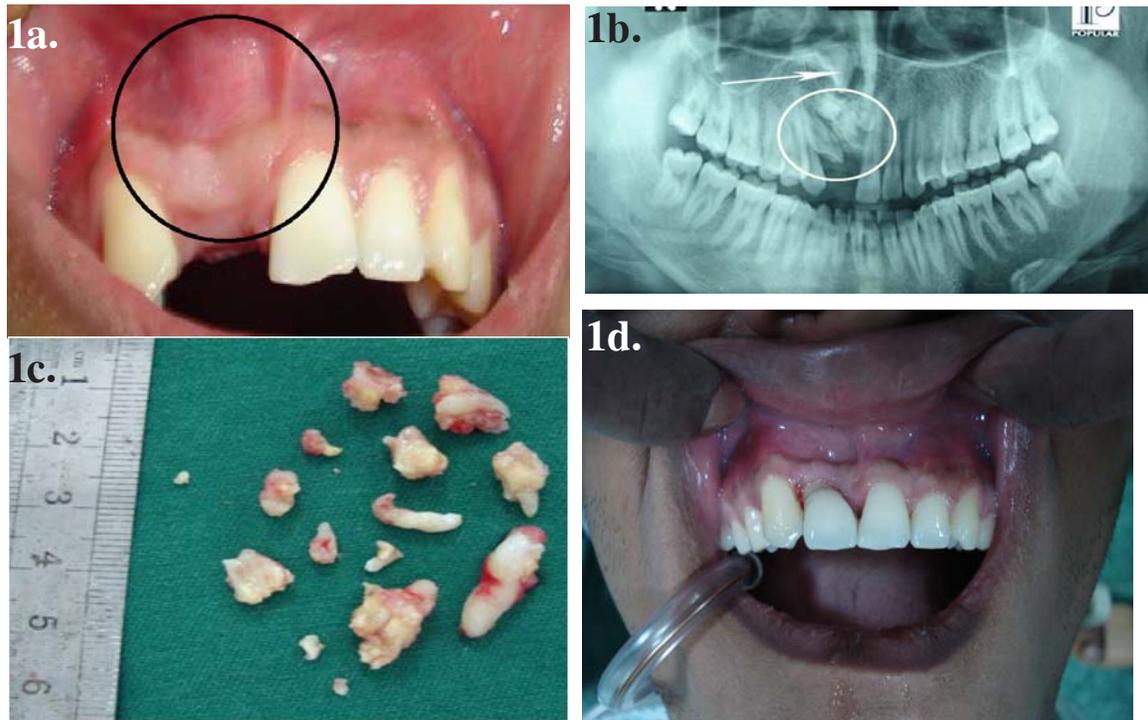
A 21-year-old man reported to the Department of Dentistry, BIRDEM Hospital, Bangladesh, with the complaint of missing upper right central and lateral incisors and hard swelling on apical region of that missing alveolus. He had normal shedding of upper deciduous central and lateral incisors teeth at the age of 6-8 years and since then no permanent dentition of upper right central and lateral incisors occurred. The patient was healthy and well developed with an unremarkable medical history. He had no history of trauma to oro-facial region or dental extraction. There was no family history of unerupted teeth or hypodontia. Extra oral examination revealed no abnormality in the upper lips as well as in the right side of the maxilla. Intra oral examination revealed a well defined gingival hard swelling which was palpated in the apical area of unerupted incisors (Figure -1a). No inflammatory change was noticed on the overlying and marginal gingiva and interdental papilla. The space for the eruption of the maxillary right central incisors was naturally maintained in the dental arch but the space

for lateral incisor was reduced due to medial drifting of maxillary right canine. No midline deviation was diagnosed in comparison to the dental arch and the facial midline. There was no regional lymphadenopathy. An intra oral periapical and panoramic radiograph revealed impacted lateral incisor with multiple radio-opaque structures around the crown of the unerupted incisors region obstructing the eruption of the tooth (Figure -1b). The mass was surrounded by a narrow radiolucent zone. On the basis of clinical examination and radiological evaluation, the case was diagnosed as a compound odontome with impacted lateral incisor. Surgical removal of the odontome, extraction of impacted lateral incisor and its re-implantation was planned.

Prophylactic antibiotics were started 2 days before the surgery. Under local anesthesia, a labial mucoperiosteal flap was raised up to the extension of nasal aperture in upper incisor region. The layer of bone overlying the labial surface was removed and the calcified mass was exposed and 15 pieces of calcified

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**Fig 1:** (a): Missing upper right central and lateral incisors and a hard swelling on upper right anterior part of alveolus. (b): X-ray OPG shows a calcified mass with multiple teeth like structures with impacted right lateral incisor, arrow indicates central incisor. (c): 15 pieces of tiny tooth like structure. (d): Final esthetic appearance after surgical removal of odontome and re-implantation.

tooth like structures were removed without disturbing the underlying tooth (Figure -1c). Curettage with debridement was done without leaving any remnants. Then the impacted lateral incisor was extracted and preserved in normal saline. Retrograde filling was done with zinc free alloy taking care not to damage periodontal ligaments. Root canal treatment followed by re-implantation of preserved extracted lateral incisor was done. To avoid damage to the deeper structure, central incisor was not removed. Immobilization of re-implanted lateral incisor was done with adjacent teeth by 0.7 SS wire. The wire for immobilization, filling and suture materials were removed after 21 days.

After 3 months, the re-implanted lateral incisor was assessed clinically and radiologically. There was no significant mobility. Periapical radiograph showed new bone formation around the root of the re-implanted tooth. For esthetic purpose, a porcelain crown having a shape of central incisor was made on the lateral incisor (Figure-1d). A Maryland bridge was selected to distribute the occlusal load applied on the lateral incisor.

## Discussion

Odontomas are the most common benign odontogenic tumours of epithelial and mesenchymal origin.<sup>1</sup> The World Health Organization (WHO) defines odontomas as two types: (a) complex odontomas, a malformation in which all dental tissues are present, but arranged in a more or less disorderly pattern and (b) compound odontomas, a malformation in which all of the dental tissues are represented in a pattern that is more orderly than that of the complex type.<sup>2,3</sup> Enamel, dentine, cementum and pulp are arranged as they would be in the normal tooth.<sup>4</sup> In compound odontomas numerous tooth like structures known as denticles are found. The structures exhibit an orderly distribution. But complex odontomas have an amorphous and disorganized distribution.<sup>4,5</sup> Compound odontomas are approximately twice as common as complex odontomas.<sup>6,7</sup>

The frequency of occurrence of odontomas varies greatly in different population groups. Odontomas are most common in Caucasian population where it

accounts for over 65% of all odontogenic tumours.<sup>6</sup> In contrast, odontomas are rare in Chinese populations with an occurrence of only 6% to 6.7%.<sup>7,8</sup> It remains to be proved whether geographical variation is racially based.<sup>8</sup> In general, odontomas mostly occur in the permanent dentition and are very rarely associated with the primary teeth.<sup>6</sup> An odontome can occur at any age but most commonly occurs at 2nd decade of life and there is no gender predilection. Of all odontomas combined, 67% occurred in the maxilla and 33% in the mandible. The compound odontoma has predilection towards the anterior maxilla (61%) compared to only 34% of complex odontomas. In general, complex odontoma had a predilection for the posterior jaws (59%). Interestingly, both type of odontomas occur more frequently on the right side of the jaw than on the left (compound 62%, complex 68%).<sup>9,10,11</sup>

The majority of odontomas are commonly asymptomatic. Our case of compound odontome presented with unerupted permanent incisor teeth. The lateral incisor was impacted which was recovered and re-implanted to re-construct the denture. Odontomas should be differentiated from cementoblastoma, osteoma and cemento-ossifying fibroma. None of these is associated with an impacted tooth. Other treatment options of odontomas with impacted teeth are: (a) surgical removal of calcified mass with proper positioning of the impacted tooth in the dental arch with the help of orthodontic traction and (b) extraction of the impacted tooth if it is not in a favorable place or require sectioning of the tooth. In our case, we have extracted and successfully re-implanted the extracted lateral incisor with subsequent crowing. No such case has been reported earlier from Bangladesh where the impacted tooth in a compound odontome was successfully recovered and re-implanted.

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