

## Crescent-shaped supernumerary tooth - a rare case report

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### ABSTRACT

Supernumerary tooth is a developmental anomaly and has been argued to arise from multiple etiologies. In general, hyperdontia is of two types according to shape: Supplemental (teeth of normal shape and size) and rudimentary (teeth of abnormal shape and size which include conical, tuberculate, and molariform types). We hereby present a case of a 7-year-old male child who reported with a crescent-shaped white mass in the anterior part of palate since 6 months with associated pain and swelling for past 1 week. The mass was excised under local anesthesia. On clinical, radiographic, and histological examination a crescent-shaped white mass measuring 1.3 mm×0.5 mm×0.5 mm showing the normal thickness of enamel, dentin, and cementum enclosing a pulp space was seen. Hence, a diagnosis of crescent-shaped supernumerary tooth was given.

**Key words:** *Crescent-shaped, Palate, Supernumerary tooth, Unusual anatomy*

Supernumerary teeth are defined as an excess number of teeth when compared to the normal dental formula [1]. Incidence in primary dentition is 0.3–0.8% and 1.5–3.5% in permanent dentition [2]. Supernumerary teeth are of two types, supplemental which is of normal shape and size and rudimentary which is of an abnormal shape and smaller size. Rudimentary include conical form and tuberculate which are barrel-shaped, molariform that resemble premolars and odontome which represents a disorganized mass of dental structure [1,2]. Supernumerary primary teeth exhibit less variety most being either midline mesiodens or supplemental lateral incisors [1]. We hereby present a crescent-shaped supernumerary tooth, the incidence of which has not been mentioned in literature.

### CASE REPORT

A 7-year-old male patient presented with a complaint of pain in the upper front tooth region since 1 week. The patient gave a history of a white mass in the upper front tooth region since 6 months which are associated with pain and occasional bleeding on mastication since 1 week. The white mass had not increased in size over 6 months. All his vital signs were within normal limits. Extraoral examination was apparently normal. Intraoral examination revealed the presence of a well-defined crescent-shaped white mass in the anterior part of the hard palate in relation to 51, 61, and 62 region measuring 1.5 cm×0.5 cm approximately extending anteroposteriorly 1 cm below the incisal edge of 61 till mesial surface of 53 and mediolaterally from the distal surface of 51 to the mesial surface of 62. The surface

appeared smooth. A diffuse swelling measuring 1 cm×1 cm was seen on the distal aspect of the white mass extending anteroposteriorly 2 cm below the incisal edge of 61 till the posterior surface of white mass and mediolaterally from the distal surface of the white mass till 1 cm laterally. The surface appeared smooth. On palpation, the white mass was hard in consistency, non-tender, and non-indurated, and the swelling was soft in consistency, tender, non-reducible, non-compressible, non-indurated, and bleeds on palpation (Fig. 1). Based on history and clinical examination, a provisional diagnosis of exfoliating supernumerary teeth in anterior maxilla in relation to 51, 61, and 62 regions was given. Differential diagnosis considered was neonatal teeth, an eruption cyst in relation to 21 and a foreign body in anterior maxilla [3-5]. Radiographic examination using an intraoral periapical radiograph revealed a crescent-shaped well-defined radiopacity with a central radiolucency in relation to 51 and 61 regions measuring 1.5 cm×0.5 cm extending from mesioincisal edge of tooth bud of 11 to the distal aspect of 61 at the level of cemento-enamel junction (Fig. 2). A digital panoramic radiograph was taken which ruled out the presence of any other pathological findings (Fig. 3). The mass was excised under local anesthesia, and the surgical specimen was obtained (Fig. 4a). On radiographic examination of the surgical specimen, crescent-shaped well-defined radiopacity measuring approximately 1.5 cm×0.5 cm with central radiolucency was seen (Fig. 4b). On microscopic examination of the ground section of the specimen, normal thickness of enamel and dentin enclosing a pulp space, similar to tooth morphology was seen. The cementum thickness was slightly thick in few areas (Fig. 5). Based on the history, clinical examination and investigation a final



**Figure 1:** The maxillary arch showing a crescent-shaped white mass in the anterior part of hard palate with a diffuse swelling in the distal aspect of the lower half of the white mass



**Figure 3:** A digital panoramic image was taken to rule out the presence of any other supernumerary tooth in the dental arch. Panoramic image showing the absence of any other supernumerary tooth

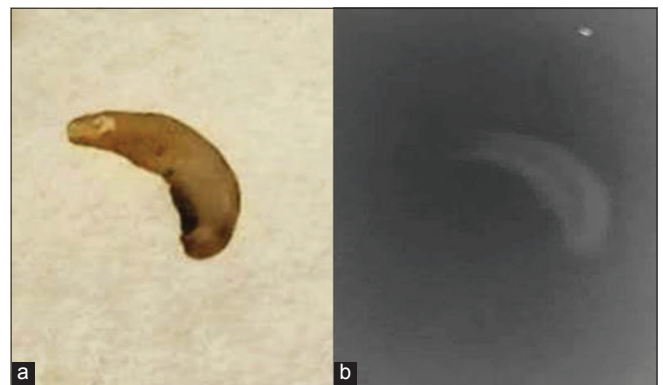


**Figure 2:** An intraoral periapical radiograph showing a crescent-shaped well-defined radiopacity with a central radiolucency in relation to 51 and 61 regions measuring 1.5 cm×0.5 cm

diagnosis of exfoliating supernumerary teeth in anterior maxilla in relation to 51, 61, and 62 regions were given [3,6].

## DISCUSSION

Several theories have been suggested regarding the etiology of supernumerary tooth such as the “phylogenetic theory” (Smith, 1969), the “dichotomy theory” (Liu, 1995), hyperactive dental

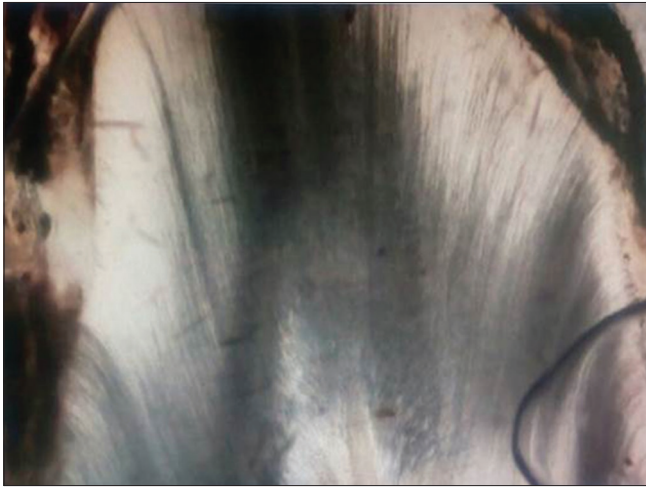


**Figure 4:** (a) The surgical specimen appearing as a crescent-shaped yellowish brown structure measuring approximately 1.5 cm×0.5 cm. (b) Radiographic examination of the surgical specimen showing a crescent-shaped well-defined radiopacity measuring approximately 1.5 cm×0.5 cm with central radiolucency

lamina (Primosch, 1981; Brook, 1984), and a combination of genetic and environmental factors-unified etiologic explanation (Brook, 1984) [7].

Supernumerary teeth are of two types based on their shape supplementary and the rudimentary form. Supplemental form refers to teeth of normal shape and size, and the rudimentary form is of abnormal shape and smaller size. Rudimentary form includes conical form, tuberculate, molariform, and odontome. Conical-shaped supernumerary teeth are the most common and occur as single, midline (mesiodens), or bilateral (mesioden) structures. The tuberculate type has a barrel-shaped appearance where the width is equal to its length with crown anatomy consisting of multiple tubercles and incomplete root formation. The molariform type has a crown that closely resembles the morphology of a premolar has complete root formation and usually occurs in pairs in central incisor area. The odontome represents a disorganized mass of dental structure [1,2].

Supernumerary teeth are of various types based on location which includes the mesiodens, paramolars, distomolars,



**Figure 5:** Microscopic examination of the ground section of the specimen showing normal thickness of enamel and dentin enclosing a pulp space, similar to tooth morphology. The cementum thickness is slightly thick in few areas

parapremolar, parastyle, and protostylid. Mesiodens refers to additional tooth between maxillary central incisors (pre-maxillary regions), paramolar refers to additional tooth located buccally/lingually or palatally in between 1<sup>st</sup> and 2<sup>nd</sup> or 2<sup>nd</sup> and 3<sup>rd</sup> maxillary molar, distomolar refers to additional tooth located distal or distolingual to 3<sup>rd</sup> molars, parapremolar refers to additional tooth in premolar region, parastyle refers to additional cusp present on buccal surface of a permanent maxillary molar, and protostylid refers to additional cusp present on buccal surface of a permanent maxillary molar [2].

More than 90% of all supernumeraries occur in the maxilla with a strong predilection for the premaxilla [2] of which 25% are erupted, while rests are unerupted [8]. Clinical and radiographical analysis is essential before a definitive diagnosis and treatment plan can be formulated. Supernumerary teeth can be localized using various intraoral radiographic techniques such as the Clark's rule, S.L.O.B. rule, and right angle technique [1].

According to a cross-sectional data, only 7–20% of the cases surveyed presented as an innocent finding indicating that a vast majority create clinical complications [1]. Common problems include nasal eruption of the tooth, cystic degeneration, loss of vitality, diastema formation, displacement, impaction, crowding, and compromise on implant site. The treatment is dependent on the type and position of the supernumerary tooth as well as its effect on adjacent teeth. Without question, a supernumerary tooth is indicated for removal if any of the above-listed complications are found [1]. In our case, the tooth was surgically removed since the patient was symptomatic.

However, much debate is concerned with the merit of prophylactic removal. The clinical conditions determine

whether surgical intervention is required. If the supernumerary tooth develops simultaneously with the primary dentition, a conservative approach of observation is advised because the developmental spacing can accommodate an extra tooth which will probably erupt and exfoliate whereas a supernumerary tooth which will not erupt must be surgically removed. A compromised approach to the timing of surgical intervention based on tooth type and stage of eruption has been recommended by Di Biase. The conical form should be observed for early eruption unless creating any complications whereas immediate removal is advised for the tuberculate and inverted conical forms, which frequently remain unerupted and create complications. The timing of intervention is not that critical in case of the supernumerary teeth that are located beyond the apex or remain unerupted [1].

## CONCLUSION

Supernumerary teeth are relatively common and present in a variety of forms. The present case is a presentation of a symptomatic erupted crescent-shaped supernumerary tooth (an unusual morphology) in the anterior portion of the hard palate. The tooth was surgically removed which provided relief to the patient's symptoms and caused no further complications. The clinician should thus have a thorough knowledge of signs suggesting the presence of supernumerary teeth, various investigations required and the appropriate treatment protocol to manage such cases.

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