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## RESEARCH ARTICLE

### UNUSUAL PRESENTATION OF IMPACTED MAXILLARY CENTRAL INCISOR ASSOCIATED WITH IMPACTED ODONTOME AND SUPERNUMERARY TOOTH IN A 11 YEAR OLD MALE PATIENT: SUCCESSFUL SURGICAL MANAGEMENT

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#### ABSTRACT

Multiple impacted permanent teeth are rare and often associated with systemic diseases or some rare syndromes. This article reports a case of an 11-year-old boy with an impacted maxillary central incisor, an impacted odontome, and a supernumerary tooth. Radiographic interpretation revealed multiple impacted teeth. Medical and family history with clinical examination was not suggestive of any syndromes. Idiopathic multiple impacted teeth are suggested to be the possible diagnosis.

#### Key words:

Impaction, Odontome, Supernumerary Tooth

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## INTRODUCTION

In normal dental development, permanent teeth will erupt to their functional occlusion and replace their successor teeth. Impacted teeth are those that cease to erupt before emergence. Lack of space caused by crowding or early loss of deciduous teeth, prolonged retention of deciduous teeth, aberrant position of the tooth bud, excessive fibrous tissue, ankylosis, and cystic formation are common causes of impacted teeth. Supernumerary teeth are one type of anomaly that occurs as a result of interference during the initiation stage of tooth development.<sup>1</sup> Odontomes are developmental anomalies resulting from the growth of completely differentiated epithelial and mesenchymal cells that give rise to functional ameloblasts and odontoblasts. These cells in turn form variable amounts of enamel, dentine and pulpal tissue of the odontoma.<sup>2</sup> Odontomes have traditionally been classified as benign odontogenic tumours and are further subdivided morphologically into complex or compound odontomas.<sup>2</sup> Compound odontome has calcified dental tissues arranged in an orderly pattern resembling miniature tooth structures, whereas complex odontome has an amorphous and disorderly pattern.

Compound odontomes are most commonly found in the incisor-canine region of the maxilla, whereas complex odontomes are most commonly found in the premolar and molar regions of both jaws. Odontome can occasionally cause tooth eruption problems such as impaction, delayed eruption, or primary tooth retention.<sup>2</sup> Multiple impacted teeth is a rare finding and often associated with systemic diseases or syndromes such as Cleidocranial dysplasia, Gardner's syndrome, Zimmerman-laband syndrome and Noonan's syndrome.<sup>3</sup> The most frequent location for impacted supernumerary teeth are premolar area of mandible.<sup>4</sup> Impaction of multiple permanent teeth with no obvious etiology is a rare condition. This report presents a case of a non-syndromic male patient with multiple impacted teeth in the maxillary anterior region.

#### CASE REPORT

A 11-year-old male patient reported to OMFS OPD, with the chief complaint of retained deciduous teeth in the upper front teeth region since few months. During the physical examination, the patient was of normal build and didn't reveal any signs of syndromes, mental retardation or skeletal abnormalities. His medical history was clear. There was no history of trauma to his oro-facial region. There was no family history of unerupted teeth or hypodontia.



Figure 1. Pre operative intra oral image showing retained 61 and missing 21



Figure 2. Pre operative intra oral image showing Dome-shaped swelling over the hard palate



Figure 3. Pre operative CBCT images – 3 D reconstruction



Figure 4. Labial crevicular incision was placed from 12 to 24 region. Full thickness mucoperiosteal flap raised and exposed the impacted 21 and odontome

On intraoral examination shows retained deciduous tooth 61, Missing tooth 21 (Figure 1). Dome-shaped well-demarcated swelling measuring approximately about 1 cm × 1 cm was seen on the left side posterior part of the hard palate slightly toward the midline (Figure 2). The swelling extended anteriorly to mesial surface of 25 & posteriorly to mesial surface of 26. Medially towards the midpalatine raphe. Laterally upto 1 cm towards 25,26 region. The colour of the mucosa covering the swelling was similar to the normal palatal mucosa and with no secondary changes. Borders were distinct and smooth. On palpation, all inspeactory findings were confirmed. The swelling was nontender, hard in consistency blanching on palpation present. A cone beam computed tomography scan showed a hyperdense structure with density as same as that of enamel and dentine suggestive of compound odontome located apical and posterior to the retained 61. Obliquely impacted 21 was noted with the root towards the labial cortex which is 3.1cm from the occlusal plane of 22 and crown was lying apical and posterior to odontome. Obliquely impacted supernumerary teeth was present over the mid palatal region with root approximating the palatal aspect of impacted 11 and crown pointing posteriorly at the level of apical third of 16 and 26 (Figure 3). Surgical removal of impacted permanent tooth, odontome and supernumerary tooth was done under general anaesthesia with nasotracheal intubation. Labial crevicular incision was placed from 12 to 24 region. Full thickness mucoperiosteal flap was raised and exposed the impacted 21 and odontome (Figure 4). Buccal corticotomy done. Surgical removal of odontome and 21 was done (Figure 5 and 6). With the surgical removal of 21, supernumerary tooth was exposed. Surgical debulking of supernumerary tooth was done and the tooth was removed buccally (Figure 7 and 8).



Figure 5. Surgical removal of odontome done



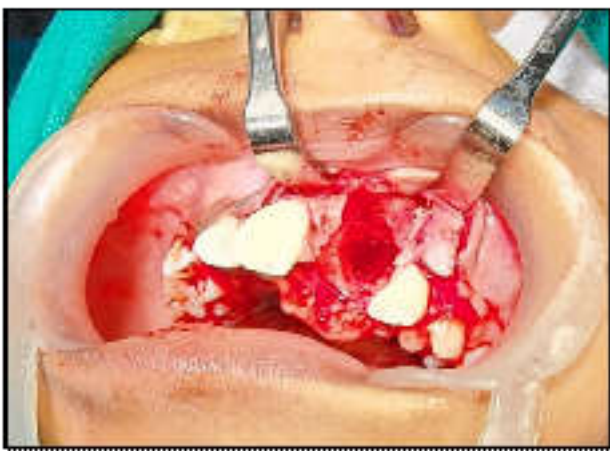
Figure 6. Surgical removal of 21 done

## DISCUSSION

Multiple impacted teeth are a rare condition and typically found in certain syndromes. Impacted teeth are those whose path of eruption is blocked by a physical barrier.



**Figure 7. Odontectomy of supernumerary tooth done followed by debulking of the crown**



**Figure 8. Surgical site after removal of all impacted tooth**

Lack of space due to crowding or early loss of deciduous teeth, prolonged retention of deciduous teeth, abnormal position of tooth bud, excessive fibrous tissue, ankylosis and cystic formation are the common etiology of impacted teeth.<sup>5,6</sup> Clinical and radiographic examination is the best approach to identify supernumerary teeth. Generally, if there are no symptoms, these can be identified during routine radiographic examination by coincidence. Since CBCT is a new technology that has transformed maxillofacial imaging, it was utilised as one of the diagnostic methods. It offers advantages of high contrast 3D images and image reconstruction for improved treatment planning.<sup>4</sup> Impaction of maxillary canine and mandibular third molar is a common finding, however in present cases there were impaction of maxillary central incisor odontome and a supernumerary tooth. In this circumstance, systemic disorder or some rare syndromes such as cleidocranial dysplasia,<sup>7</sup> Gardner's syndrome,<sup>7,8</sup> Zimmerman-laband syndrome<sup>7</sup> and Noonan's syndrome<sup>7,8,9</sup> should be detected. In our cases, no features of any disorder or syndrome were diagnosed and syndromes were ruled out. The presence of supernumerary tooth can cause a number of issues, including pathological alterations, root resorption, delayed tooth eruption, and failure to erupt.

A multidisciplinary approach would be the appropriate choice since therapy involves issues with oral health, function, and aesthetics. Multiple impacted teeth may be treated using orthodontic extrusion. However, surgical removal was advised due to the impacted teeth's pathological potential and undesirable position. With the assistance of a prosthodontist, pedodontist, and implantologist, it is necessary to plan space maintenance until the eruption of all permanent teeth and the patient's rehabilitation with fixed dentures. The aim of the therapy would be to achieve stable outcomes and improved aesthetics, dental health, and function.

## CONCLUSION

The simultaneous occurrence of multiple supernumerary and impaction of permanent teeth without association with complex syndromes is infrequent and is normally asymptomatic, usually diagnosed as a casual finding during routine panoramic X-ray studies. Occasionally, the presence of over retained primary teeth may indicate a more complex condition in the pathway of permanent teeth, such as supernumerary teeth that have blocked the eruption way, under which early radiographic examination is necessary. Management of such a condition requires a multidisciplinary approach involving surgical, orthodontic and prosthodontic intervention.

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