Multiple impacted non-syndromic deciduous and permanent teeth

ABSTRACT

While impaction of a single tooth is widespread, multiple impacted teeth by itself is a rare condition. Although multiple impacted teeth may be related to many syndromes and metabolic disorders, in some instances, impaction of multiple teeth is not accompanied by a fixed complex of symptoms. This paper describes a 45-year-old woman of Indian origin with multiple impacted deciduous and permanent teeth involving both jaws, who did not have any systemic conditions or syndromes. Based on the clinical presentation, radiographic examination, and advanced laboratory investigations, this report discusses the differential diagnosis and management of such patients.

Key words: Radiography, dental; Syndrome; Tooth, impacted

Introduction

An impacted tooth is defined as any tooth that is prevented from reaching its normal position in the oral cavity by tissue, bone, or another tooth. Impaction of a tooth can result from either local biomechanical impediments or secondarily from childhood maxillofacial and dentoalveolar pathologies, altered anatomical features such as thickened overlying osseous or mucosal tissues, restricted growth of the jaws or a low correlation with tooth maturation, eruption disturbances, and direct or indirect effects of space-occupying lesions. Various systemic diseases and syndromes can cause impaction of multiple deciduous and permanent teeth. However, the occurrence of multiple impacted teeth without any associated systemic conditions or syndromes is a rare phenomenon. Hence, it is essential to perform a thorough clinical examination, obtain adequate radiographs and laboratory investigations, and take a multidisciplinary approach for the management of patients with multiple impacted non-syndromic deciduous and permanent teeth.

Case report

A 45-year-old Indian woman presented at a dental clinic in Gurgaon, India complaining of discomfort in the lower front region of the jaws and inability to wear her complete lower denture. According to her dental history, she was edentulous until the age of 16 years. When she was 16 years old, some teeth erupted, but they shed off by themselves because of excessive mobility. Since then, she has worn complete dentures. Nearly 4 years prior to
her attendance at the dental clinic, one tooth erupted in the lower front region of the jaws but she continued wearing a complete denture. Her medical history was irrelevant.

Extraoral examination revealed a brachycephalic head type, straight facial profile with frontal bossing and naso-maxillary hypoplasia (Fig 1). On intraoral examination, the soft tissues were unremarkable, and no oral mucosal lesions were detected. Hard tissue examination revealed that only 41 was present in the oral cavity (Fig 2).

Panoramic (Fig 3) and occlusal radiographs (Fig 4) revealed 12 impacted teeth (11, 13, 14, 15, 16, 17, 18, 24, 25, 26, 27, 28; all permanent) in the maxilla and 14 impacted teeth (12 permanent [33, 34, 36, 37, 38, 42, 43, 44, 45, 46, 47, 48] and 2 deciduous [75, 85]) in the mandible. In total, the patient had 26 impacted teeth. The impacted deciduous teeth showed external root resorption. The periodontal spaces and lamina dura of most of the teeth were not visible. Thinning and resorption of the lower border of the mandible was evident, and root apices of many of the impacted

Figure 1  Profile of the patient showing a straight facial profile with frontal bossing and naso-maxillary hypoplasia

Figure 2  Intraoral photographs showing (a) erupted 41 covered with calculus (arrow) and (b) completely edentulous maxillary arch

Figure 3  Panoramic radiograph demonstrating 24 impacted permanent teeth and two deciduous teeth (black arrows) with root apices of many impacted permanent mandibular teeth perforating the lower border of mandible (white arrows)
permanent mandibular teeth had perforated the lower border of the mandible (Fig 3).

Radiological evaluation of the clavicles, vertebral skeleton, and chest proved to be normal. Results of routine hematology tests and serum biochemistry investigations were in the normal range. Histopathological evaluation of the gingiva did not show any pathologic findings.

The treatment plan for the patient involved an interdisciplinary approach between the oral radiologist, oral surgeon, orthodontist, and prosthodontist. Extraction of 75 and 85 was advised. Surgical exposure of the impacted permanent teeth followed by guided eruption through orthodontic therapy was planned. However, the patient failed to visit for further treatment.

Discussion

Multiple non-syndromic impacted permanent and deciduous teeth by itself is a rare condition. In the literature, only a few reports are related to multiple impacted teeth with no known etiology, and the exact incidence rate has not been confirmed. When encountering multiple impacted teeth other than third molars or canines, clinicians should be prompted to look for other features of the syndromes and metabolic disorders that may be present. Multiple impacted teeth are often found in association with syndromes such as cleidocranial dysplasia, Gardner’s syndrome, Down’s syndrome, Aarskog’s syndrome, Zimmerman-Laband’s syndrome, Noonan’s syndrome, and Yunis-Varon’s syndrome \(^{1,5}\). This condition has also been reported in mucopolysaccharidosis, hemifacial atrophy, hypopituitarism, hypothyroidism, cherubism, gingival fibromatosis, and cleft palate \(^{4}\). As the medical history of this patient was non-contributory, hematology tests and serum biochemistry investigations were within the normal range, radiological investigations did not support the pathognomonic features, and histopathological evaluation of the gingiva was normal, the above-mentioned conditions were excluded.

However, in some patients, impaction of multiple teeth is not accompanied by a fixed complex of symptoms. Local biomechanical impediments, childhood maxillofacial and dentoalveolar pathologies such as trauma and surgery, altered anatomical features such as thickened overlying osseous or mucosal tissues, restricted growth of jaws or low correlation with tooth maturation, eruption disturbances such as rotation of tooth buds, and direct or indirect effects of space-occupying lesions such as cysts and tumors, may be contributory to multiple impactions \(^{7}\). In this patient, it is likely that lack of space due to restricted growth of the jaw bones and rotation of tooth buds resulted in multiple impactions in the permanent teeth. However, impaction of the deciduous teeth may be attributed solely to the lack of eruptive force.

In previous reports, many idiopathic cases of multiple impacted teeth were supernumerary or a combination of supernumerary and permanent teeth \(^{8,9}\). In this patient, the impacted teeth were considered to be permanent and deciduous. The patient had 12 impacted teeth (all
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permanent) in the maxilla and 14 impacted teeth (12 permanent and 2 deciduous) in the mandible. It has been reported that multiple impaction or submergence of deciduous teeth is very rare. In this patient, two impacted deciduous molars (75 and 85) were present.

The management of such patients involves interdisciplinary cooperation between the oral radiologist, oral surgeon, orthodontist, and prosthodontist. The approach to treatment relies on the exact number and localization of the impacted teeth, extraction of primary teeth, assisted eruption of the permanent teeth by surgical exposure, and orthodontic traction. Any impacted teeth that do not erupt after surgical or orthodontic treatment need to be extracted and replaced. If the risks of surgery outweigh the benefits of extraction, the teeth may be left in situ and regular clinical and radiographic monitoring should be done at follow-up visits.

References


Answers to CPD Programme

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Removal of retained gutta-percha points after complete replacement resorption of maxillary incisors assisted by cone-beam computed tomography

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