Multiple deciduous and succedaneous teeth in 25 year adult-A rare case!!!

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ABSTRACT:

Retained primary teeth is a well known process but multiple retained primary,permanent and supernumerary teeth that too in an asymptomatic,non syndromic patient is a rare possibility that has rarely been reported in literature. The present case report discusses the clinical and radiographic details along with treatment options in a 25 year old patient having a total number of 50 teeth i.e 16 retained primary teeth,32 permanent teeth and two supernumerary teeth without being associated with any known syndrome complex or metabolic disorder.

Key words: Retained primary teeth, asymptomatic, non-syndromic,Multiple impacted teeth, Supernumerary teeth.

Introduction

A continuous process of teeth eruption and shedding replaces the exfoliated deciduous teeth with succedaneous teeth i.e permanent incisors, canine and premolar . Impaired tooth eruption, where this process is disturbed may manifest either as delayed or complete absence of eruption, resulting in impacted, embedded permanent teeth or retained deciduous teeth.[1]

Differential gene expressions by dental follicle needed for osteoclastogenesis, osteogenesis and pressure from underlying succedaneous teeth are responsible for timely shedding and eruption process of succedaneous teeth[3] and several local,systemic causes including syndromes (Cleidocranial dysplasia, Gardner's syndrome) and metabolic or hormonal diseases have been attributed in literature for impacted and embedded teeth.[3-5]

An English language literature search revealed that, it is very uncommon for a patient to have multiple retained deciduous teeth along with multiple impacted permanent teeth specifically in absence of any other known local factor, systemic disease or syndrome complex.

The present case, reports a patient, with sixteen retained deciduous teeth along with multiple permanent teeth out of which some were erupted,some impacted and embedded succedaneous teeth,and some supernumerary teeth.What was most astonishing is the fact that there was no known local or systemic disease as the patient was asymptomatic.

Case report

A 25 year old adult reported with a chief complaint of irregularly placed teeth that were small in size and wanted to get them corrected chiefly for esthetic reasons. A family history revealed that no other member in his family was having any similar problem. Past medical history given by patient was non significant and patient appeared to be well nourished with moderate height and built.

On intra oral examination, it was found that patient had sixteen retained primary teeth, with all permanent first and second molars erupted (Table 1 and 2). A few other permanent teeth (14, 15, 21, 31, 33) were also observed. Tooth number 15 and 33 were observed erupted ectopically (Fig. 1). Tooth number 31 was observed with mamelons on its incisal edges (Fig. 2). All the teeth present in oral cavity had mild attrition with slight discoloration most likely owing to dental fluorosis. Gingival health of the patient was unremarkable and had a normal palatal arch.

Patient was advised for OPG, skull and chest x-ray, and full mouth IOPA radiographs. Skull and chest x-ray did not reveal any significant finding. OPG showed multiple impacted and embedded permanent teeth with two supernumerary teeth, located one on each side of mandible (Fig. 3). No evidence of cysts, odontoma, or other abnormalities were noted on the radiograph. IOPA radiographs further revealed a few impacted teeth with malformed crown and root formation (Fig. 4). Also, teeth number 38 and 48 were observed to have mesio-angular impaction.

To rule out any other associated syndrome complex or metabolic and hormonal disorder, patient was referred to a physician, under whose supervision, multiple tests including thyroid function test, growth hormone assays, serum calcium and phosphorus levels were carried out, but all of them were in normal limits.

After the clinical and radiographic evaluations, a treatment plan was made under which it was advised that all the third molars need to be extracted and orthodontic extrusion of succedaneous teeth will be attempted. However the patient was reluctant for any kind of surgical treatment and did not report back for further alternative treatments.

Discussion and Conclusion

While impaction of tooth is widespread, multiple impacted succedaneous teeth along with multiple retained primary teeth by itself is a rare condition. A disturbed eruption process creates a clinical situation that is challenging to diagnose and treat. The clinical spectrum of tooth eruption disorders includes both syndromic and non-syndromic problems ranging from delayed eruption to a complete failure of eruption.[3-6]

Tooth eruption is a localized event in which specific genes in the dental follicle that surrounds the unerupted tooth are either upregulated or downregulated at critical times to bring about the osteoclastogenesis and osteogenesis needed for eruption.

Several local factor like, mechanical obstruction from soft tissue overgrowth, supernumerary teeth, gingival fibromatoses, crowding, rotation of tooth buds, retained primary teeth and pathologic lesions are amongst most common reason for teeth impaction.[3-7] The clinical and radiographic examinations of our case revealed relatively normal jaws and oral soft tissues.

In the present case, all the permanent first and second molars had erupted in patient while many succedaneous teeth were impacted, suggesting the retainment of deciduous teeth as the primary culprit. Now the question arises whether it is non-shedding primary teeth that led to impaction of succedaneous teeth or is it failure of eruption of succedaneous teeth or lack of eruptive forces that led to retainment of primary teeth, is open to debate. IOPA radiograph revealed some impacted teeth to have malformed crown and root formation, most likely related to inadequate space and arrested eruption.

Also, our patient had two supernumerary teeth located one on each side of mandibular arch. A very few case have been reported in literature for similar conditions. One of the case report suggests, lack of eruptive force and rotation of tooth buds to be the main causative factor for multiple impactions in non syndromic patients.[7] Conditions which cause lacking of eruptive force in such cases could be due to either general, endocrinal, neurogenic or mucosal and bone disorder.[5]

However numerous reports are described in literature suggesting various syndromes and metabolic conditions to be associated with multiple impacted permanent or supernumerary teeth. These syndromes include mainly Cleidocranial Dysostosis and Gardner's syndrome, Down syndrome, Aarskog syndrome, Zimmerman-Laband syndrome and Noonan's syndrome along with hormonal disturbances like hypothyroidism, hypopituitarism and hypoparathyroidism.[4,5,7]

Cleidocranial dysplasia is characterized by abnormalities of skull, teeth, jaws and shoulder girdle. None of the features of skull and shoulder girdle like, open fontanels, wormian bones in skull, partial to total agenesis of clavicle were reported in skull and chest X ray of this patient. Multiple osteomas of skull and jaw bones along with multiple epidermoid sebaceous cysts of skin, desmoids tumors, the major characteristics of gardner's syndrome were also not associated with this case.[8] None of the clinical features were suggestive for rest of the syndromes, so were excluded.

Amongst hormonal disturbances, both hypothyroidism and hypopituitarism are characterized by delayed eruption rate of permanent teeth along with retainment of primary teeth beyond normal shedding time.[4] However on general examination of the patient he did not reveal any significant medical findings, which was further substantiated by normal TSH, T3, T4 and growth hormone (GH) levels of the patient. Hypo parathyroidism was also ruled out subsequently by laboratory tests for serum calcium levels and parathyroid hormone values.

Treatment options for the management of impacted teeth are separated into four categories: observation, intervention, relocation and extraction. Each strategy has to be judged according to individual case, taking into consideration the position of the impacted teeth and the relationship to each on X-ray images, oral examination and plaster model.[8,9] In this case, after taking into consideration various factors, it was decided to go for extraction of all the third molars, followed by surgical exposure and orthodontic traction of impacted teeth. However patient was not willing for any kind of surgical treatment and was lost to follow up.

The present case reports add to rare reported literature on multiple retained primary teeth along with impacted permanent teeth. Early diagnosis with advanced imaging and appropriate management can minimize the potential complications caused by such impacted teeth. Dental practitioners should be aware of their clinical signs and the treatment options. Further research is needed at cellular and genetic level to exactly localize the reasons for such failure of eruption.

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Figure 1: Intra oral picture of maxillary dentition with multiple retained primary teeth and ectopically erupting tooth number 15

Figure 2: Intra oral picture of the mandibular dentition with multiple retained primary teeth and ectopically erupting tooth number 33 along with mamelons on tooth number 31

Figure 3: Panoramic radiograph of the patient showing multiple retained deciduous teeth along with multiple impacted succedaneous teeth. Note the supernumerary teeth on both side of mandibular arch (marked with arrows).

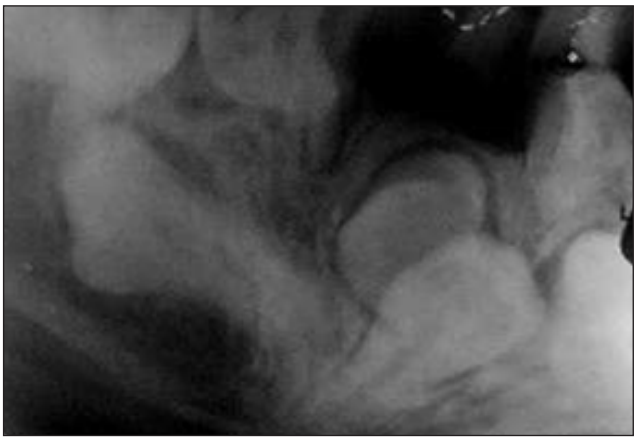

Figure 4. Intra oral peri-apical (IOPA) radiograph of mandibular left side of the patient showing impacted succedaneous and supernumerary teeth with malformed crown and root .

TABLE 1:

TEETH PRESENT IN THE ORAL CAVITY	
17, 16, 55, 15, 14, 53, 52, 51	21, 62, 63, 64, 65, 26, 27
47, 46, 85, 84, 83, 82, 81	31, 33, 73, 74, 75, 36, 37

TABLE 2:

IMPACTED PERMANENT TEETH IN THE JAWS OF THE PATIENT	
18, 13, 12, 11	22, 23, 24, 25, 28
48, 45, 44, 43, 42, 41	32, 34, 35, 38