Case Report

Nonsyndromic delayed eruption of multiple teeth: A rare case report

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Abstract

Dental eruption is a very finely regulated process. A delay in tooth eruption may be due to a disturbance caused by local, systemic, or genetic abnormalities. Delayed eruption of multiple teeth in the absence of any etiology is very rare. Here, we report a case of delayed eruption in a 16-year-old female patient with multiple congenitally missing teeth and bilaterally ankylosed deciduous teeth with no underlying systemic or genetic disease.

Keywords: Ankylosed teeth, congenitally missing teeth, delayed eruption, impacted teeth, nonsyndromic

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INTRODUCTION

A broad range of variation exists in the normal eruption times of deciduous and permanent teeth in human beings. However, when the eruption time is grossly beyond the extremes of normality, it is considered a pathologic state. Possible etiologies for the failure of eruption of teeth may be local, systemic or genetic.[1]

Local causes are varied and range from the physical barriers to local metabolic disturbances, trauma and infection. The systemic conditions include rickets, cretinism and endocrine dysfunction. The genetic disorders such as Cleidocranial dysplasia, Gardner syndrome and osteopetrosis are also possible causes. In general, systemic causes lead to widespread impact on most of the dentition, as opposed to local factors that tend to affect a smaller number of teeth.[2-5]

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Nonsyndromic multiple eruption disorders are rarely reported in the literature. Apparently, it indicates that most cases of multiple unerupted teeth are associated with different systemic and genetic factors. This case report describes multiple unerupted permanent teeth in a healthy patient with no systemic or genetic abnormality.[6-10]

CASE REPORT

A 16-year-old medically fit female patient visited our dental outpatient department with a complaint of irregularly placed teeth for 10 years. Her family history revealed nonconsanguineous marriage of parents. Her parents had similar complaints of crowding of teeth. The patient was moderately built and nourished and did not exhibit any physical or skeletal abnormality and showed no signs of mental retardation.

The patient had generalized crowding and rotation in the upper and lower arches [Figures 1 and 2]. The maxillary

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deciduous molars and mandibular deciduous incisors were found to be retained and were not mobile. Percussion of the retained deciduous molars produced a solid sound.

A digital panoramic radiograph (orthopantomagram [OPG]) was advised and undertaken. The radiograph revealed bilaterally normal condylar and coronoid processes. Jaw bones showed normal trabecular pattern and density. The OPG further revealed impacted 13, 15, 25, 33, 35 and 45 and congenitally missing 12, 18, 22, 28, 31, 32, 38, 41, 42 and 48. Root formation of the permanent premolars and molars was incomplete. A lack of periodontal ligament space surrounding the primary deciduous molars was noted, suggestive of ankylosed teeth [Figure 3].

To rule out any associated hormonal disorders, the patient was referred to a physician under whose supervision, thyroid function tests, parathormone levels, hormone assays, serum calcium and phosphorous levels were carried out. The results of the investigations were within the normal limits.

Based on the history and clinical examination, the case was diagnosed with nonsyndromic delayed eruption. The patient was referred to the department of orthodontics for the treatment of her primary complaint, the malocclusion.

DISCUSSION

The reported case presents a clinical situation of congenitally missing permanent maxillary lateral incisors, mandibular central and lateral incisors, maxillary and mandibular third molars and ankylosed deciduous molars which ultimately led to delayed eruption.

Congenitally missing permanent teeth have a prevalence of 0.5%–0.9%. After the third molars, second premolars and lateral incisors are absent most frequently. Women are more often affected when compared with men with a predominance of 1.5:1.[11] The patient in our reported case was female. Genetics has been suggested as an important etiological factor, and autosomal dominant pattern of inheritance has been considered to be predominant.[12] Furthermore, congenitally missing teeth in permanent dentition are considered to be the most common reason for primary tooth retention.[13] The agenesis of maxillary permanent lateral incisors and mandibular permanent central and lateral incisors in our case led to the retention of deciduous teeth.

Bilateral ankylosed deciduous teeth, which is also seen in our case, are another rare condition.[14] An ankylosed tooth

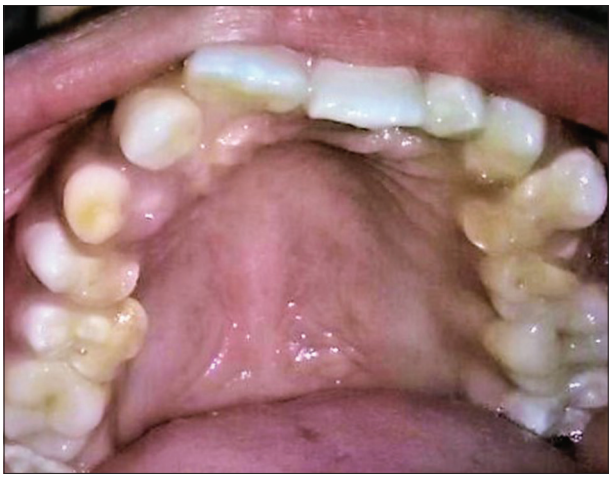

Figure 1: Intraoral view of maxillary arch showing retained deciduous teeth

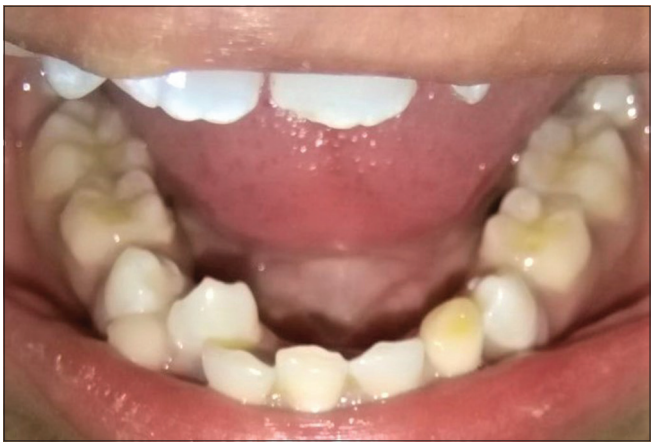

Figure 2: Intraoral view of mandibular arch showing crowding and retained deciduous teeth

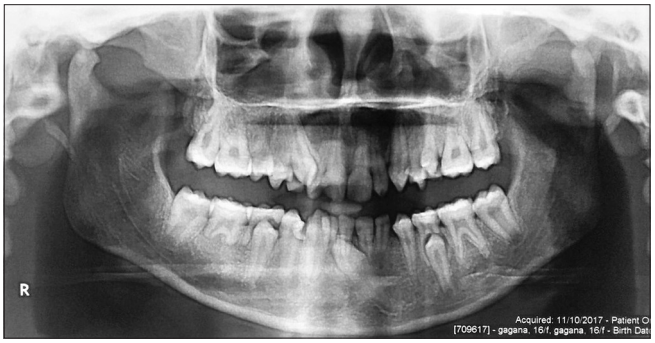

Figure 3: Orthopantomagram revealing multiple congenitally missing permanent teeth, ankylosed deciduous molars and impacted teeth

is defined as an anatomical fusion of the tooth cementum with the alveolar bone as a result of some disturbance in their periodontal ligament.[15,16] There is a high incidence of ankylosed primary teeth in children between the age group of 7 and 11 years.[17-19] Many authors reported that there was a hereditary component of ankylosis, based on the observation of involvement of the second maxillary

deciduous molars in the several members of the same family.[20-23] The patients family members in our case too had similar complaints regarding their dentition. These influences have been discussed by Henderson who has also emphasized that a patient having one or two ankylosed teeth is very likely to have other teeth ankylosed over a period of time.[24]

It is thereby difficult to conclude whether the failure of eruption, in our case, is a cause or a consequence of all these factors. What remains obvious is the absence of any genetic or systemic disease at the time of diagnosis.

CONCLUSION

Dental eruption is a very finely regulated process. This is a case of multiple congenitally missing permanent teeth and multiple ankylosed deciduous teeth resulting in delayed eruption. The failure of eruption may be a cause or consequence of these factors. The lack of any syndromic features rules out genetic disease; however, a poorly defined endocrine disease or subclinical hormonal dysfunction could alter the eruption pattern. In this situation, an oral physician may be the first to diagnose such an anomaly.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initial s will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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