e-ISSN:2320-7949
p-ISSN:2322-0090

Research and Reviews: Journal of Dental Sciences

Clinical Management of Rudimentary Supernumerary Tooth and Peg-Shaped Lateral Incisor: A Case Report.

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Short Communication

Received: 17/08/2013
Revised: 27/08/2013
Accepted: 04/09/2013

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Keywords: Peg shaped Lateral, Direct Composite, Laminates, Supernumerary tooth.

ABSTRACT

Supernumerary teeth can be classified supplemental and rudimentary. Many complications can be associated with supernumeraries, like impaction, delayed eruption or ectopic eruption of adjacent teeth, crowding and unaesthetic in nature. Early intervention to remove it is usually required to obtain reasonable alignment and occlusal relationship. This article will present the clinical management with a conservative approach of a (i) rudimentary supernumerary tooth, (ii) peg shaped lateral incisor and (iii) hypoplasticteeth.

INTRODUCTION

The presence of morphological variations in anatomical structures is not an exception for the dentition, may it be primary or permanent teeth. Supernumerary teeth may be defined as any teeth or tooth substance in excess of the usual configuration of twenty deciduous, and thirty-two permanent teeth [1].

Supernumerary teeth can be classified according to their form and location. Primosch in 1981 [2] classified supernumeraries into two types according to their shape: supplemental and rudimentary. Supplemental refers to supernumerary teeth of normal shape and size and may also be termed incisiform. Rudimentary defines teeth of abnormal shape and smaller size, including conical, tuberculate and molariform[2,3,4]. A peg lateral is defined as ‘‘an undersized, tapered,maxillary lateral incisor’’ that may be associated with other dental anomalies, such as canine transposition and overretained deciduous teeth [1].

MATERIAL AND METHODS

Case Presentation

A 13 years old girl reported to the Department of Pedodontics and Preventive Dentistry, KMSDCH with the chief complaint of irregularly placed upper front teeth. There were no significant Family, Medical and Dental history present.

Intra oral examination revealed peg-shaped upper right permanent lateral incisors (12). In-between the upper right central incisor (11) and upper right lateral incisor (12) rudimentary supernumerary tooth was noticed. The upper right and left central incisors (11, 21) had hypoplastic enamel lesion on the labial surfaces (Fig 1).

Investigations

Radiographic examination revealed peg shaped lateral incisor with normal root length and small rudimentary supernumerary tooth in-between 12 & 11 (Fig 2).

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Treatment

First, orthodontic brackets were bonded on the labial surface of 11 and 12 (Fig 3). After that extraction of supernumerary tooth was carried out under local anesthesia (Fig 4). Patient was reviewed on the next visit and elastic chain was incorporated on the bonded brackets (Fig 5). Patient was recalled for follow up after a week. On examination 1-2 mm tooth movement is appreciable which was acceptable for aesthetic restoration. E-chain was removed and orthodontic brackets were debonded.

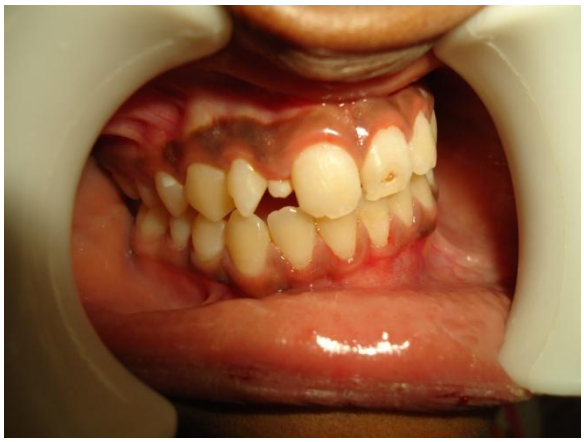

Fig 1. Preoperative photograph showing peg-shaped small rudimentary supernumerary tooth in-between 12 & 11 and hypoplastic labial surface of the 11, 21.

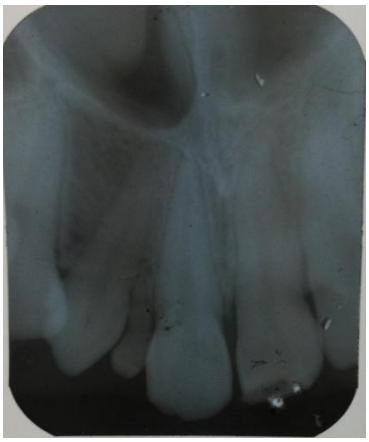

Fig 2. Preoperative IOPA showing peg shaped12, lateral incisor with normal root length and small rudimentary supernumerary tooth in-between 12 & 11

Fig 3. Bonded orthodontic brackets on 12 and 11

Fig 4. Extracted rudimentary supernumerary tooth

Fig 5. Elastic chain was incorporated on the brackets

Fig 6. Postoperative intraoral photograph

e-ISSN:2320-7949
p-ISSN:2322-0090

Fig 7.Postoperative extraoral photograph

The centrals and peg-shaped lateral incisors were restored with veneers and direct resin composite respectively.

First, the desired surfaces of the peg lateral were etched with 35% phosphoric acid gel (3M Scotchbond; 3M ESPE, St. Paul, Minn) for 30 seconds. Care was taken to completely rinse the etchant gel and proper etching of the tooth surface was ensured. Tooth was primed with a self-etching adhesive (Clearfil SE Bond, Primer; Kuraray Co Ltd, Tokyo, Japan) for 20 seconds. Bonding agent (Clearfil SE Bond; Kuraray Co Ltd) was applied on the tooth surface and polymerized for 10 seconds with a polymerizing unit (Eliper ™ LED Curing Light; 3M ESPE). The direct restoration was carried out using a composite resin (Filtek™ Z250 Universal Restorative; 3M ESPE), which was placed using an incremental technique. Particular attention was given to the contouring of the apical finish line of the restorations. The resin composite restorations were polymerized for at least 2 minutes with the polymerization unit (Eliper ™ LED Curing Light; 3M ESPE).

For hypoplastic 11 and 21 enamel of labial surfaces were prepared for direct composite veneer. For this multi-planar reduction of labial surface for both teeth were done. Application of etchant, primer and bonding agent were done as described earlier. Composite resin was placed and polymerized for at least 2 minutes with the polymerization unit. Finishing and polishing of composite resin of 12 11 and 21 was done (Super-Snap® and CompoMaster®; Shofu Dental Corporation, USA). Final finished and polished direct composite veneer on 12 11 and 21 (Fig 6, 7)

DISCUSSION

The presence of an extra tooth has great potential to disrupt normal occlusal development, and early intervention to remove it is usually required to obtain reasonable alignment and occlusal relationship[5]. The case described above represent a small supernumerary teeth. Timing of interceptive treatment should be as soon as possible following clinical detection of an abnormal eruption pattern. Hogstrum and Andersson (1987) suggested that removal of the supernumerary as soon as it has been diagnosed. This could create dental phobia problems for a young child and has been said to cause devitalization or deformation of adjacent teeth[6].

Walls et al used resin composite laminate veneers for anterior teeth of 68 patients. They concluded that this technique produced an acceptable improvement in the esthetics and function of patients over a 2-year period. Results of this clinical study showed that the gingival status of patients' teeth improved significantly between the initial assessment visit and placement of the veneers. The veneer restorations showed a deleterious effect on the gingival health of the patients who were unable to maintain good oral hygiene[7].Miguez PA et al suggested that acid etching prior to application of the self-etching primer produces higher bond strength to enamel than self-etching priming only[8]. Therefore, prior to application of the self-etching primer, acid etching was carried out using 35% phosphoric acid.

In the present case conservative option of retaining the peg-shaped lateral incisor and restoring the natural tooth form with bonded composite was chosen. Resin composite restorations exhibit excellent physical properties, marginal integrity, and aesthetics [9]. Other advantages of this type of treatment are the lower cost compared to an indirect technique, and the reversible nature of this procedure, which allows for other treatment approaches in the future. A significant advantage of resin composite restorations over other restorative materials is that repair may be possible intraorally without the risk of modifying aesthetics or mechanical performance.

e-ISSN:2320-7949
p-ISSN:2322-0090

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