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"A Novel Technique" For Extraction of Paramolars – In both Adults and Children

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ABSTRACT
Human teeth may show large variations in their morphological features and forms. Such changes may be found in the crown either in the form ofPara molars, anomalous cusps, or in an increased number of roots, these variations in the tooth number, cusp number and number of roots are all termed as "non metric dental traits" Para molars are potent sites for plaque retention. Recurrent gingival inflammation and localized periodontitis are often observed due to poor oral hygiene maintenance in these areas. This makes extraction of the Para molars inevitable, if possible even before the eruption of the same. This case report discusses the diagnosis and treatment of an unerupted Para molar, which was extracted using a new technique.
Key words : Para molar, elevator, supernumerary.

I. INTRODUCTION

Supernumerary teeth are those in excess in the normal dental nomenclature for deciduous or permanent dentition [1–3]. We see an increased predilection for maxilla over mandible in this context. The most commonly found sites are incisal region followed by molar region [4, 5]. These subsidiary teeth may occur singly in about 76–86%, double in about 12–36%, and multiply in about 1% of the cases [2].

The term "Para molar tubercle" is used for any type of anomalous cusp, supernumerary structure or eminence occurring on the buccal surfaces of both upper and lower premolars and molars. In 1916 prof. L. Bolk of the anatomical institute, from the university of Amsterdam explained for the first time, a rare entity known as the protostylid. Protostylid is a supernumerary or accessory cusp found on the mesiobuccal surface of molars. In 1945, dahlberg introduced a specific paleontologic nomenclature referring to this structure as "parastyle" when present in the upper molars and as "protostylid" when present in the lower molars. Though the aetiology is unknown, various studies have shown it occurs due to over activity of the dental lamina. It is now believed that pax and msx genes are responsible for the abnormal shape of the teeth. Due to their low overall occurrence, there is limited information regarding the frequencies amongst different races[6].

Supernumerary tooth occurring in molar region can be categorised into paramolars and distomolars[3].Paramolar is usually small and dysmorphic supernumerary tooth located buccally or palatally/lingually to one of the molar series. Distomolars are located distal or distolingual to third molars [3]. There are only few countable cases of subsidary tooth in literature as these conditions are rare. Predominantly these occur singly and very rarely is bilateral occurrence seen [5].

This case report discusses a condition which first represented itself clinically as a cyst and later as anauxillary tooth in between the premolars.

II. CASE REPORT

A 16-year-old boy reported to our opd with a chief complaint of dull pain and swelling in the right posterior mandibular region, lingually, since past 15 days (FIG 1). The patient had pain in the same region 1 year before and had taken medication for that. Extraoral examination revealed nothing much. Intraorally a smooth superficial swelling of about 3 × 2.5 cm on the lingual side below the premolars was noticeable(.FIG 2) The swelling was tender and firm on palpation. Egg shell crackling was felt on palpation. A radiograph was adviced which revealed an impacted Para molar.(FIG 3) His parents were informed about the same and the consent for removal of the Para molar was taken.

A special technique was used here to extract the Para molar, after careful elevation of the flap, the thin periosteum and thin bone over the paramolar was removed using the elevator itself. Only a periosteal elevator was used for the extraction of the paramolar in this case.(FIG 4 5 6) With utmost care the periosteal elevator was used to get a catch from where the tooth could be luxated without causing trauma to the adjacent erupted tooth.Once the tooth was luxated it was removed using artery forceps. The extracted tooth was sent for further investigations to rule out the presence and occurrence of a cyst in future.

The patient was reviewed after one week and excellent healing was noticed.(FIG 7)

The only advantage of this technique is that the intended tooth can be extracted without luxating the adjacent intact tooth.

III. DISCUSSSION

Paramolars are rare supernumerary anomalies occurring in molar region with prevalence of 0.09–0.29% [2]. Commonly located between second and third molars on buccal aspect or lingual aspect but rarely seen between first and second molars [6]. Predilection for males is seen [2]..

Human teeth may show large variations in their morphological features and forms. Such changes may be found in the crown either in the form of anomalous cusps, or in an increased number of roots, these variations in the cusp number and number of roots are all termed as "non metric dental traits" [7]

Paramolars are potent sites for plaque retention. Recurrent gingival inflammation and localized periodontitis are often observed due to poor oral hygiene maintenance in these areas [9].

Supernumerary teeth are defined as those which are an addition to the normal series of deciduous or permanent dentition [3]. They can be classified according to chronology as predeciduous, past permanent, or complementary. They can be classified according to morphology as odontoma, supplemental or eumorphic and rudimentary or dysmorphic having abnormal shape and small size, and dysmorphic morphology includes the conical, tuberculate, and molariform types. They can be classified according to topography, as mesiodens, paramolars, distomolars, and parapremolar and they can be classified according to orientation as vertical, inverted, and transverse [3, 5].

Etiology of their development is still unwinded but various factors such as genetic and environmental factors have been proposed. According to dichotomy theory supernumerary teeth such as paramolar arise from third tooth bud arising from dental lamina near permanent tooth bud or possibly by splitting of permanent bud itself. According to theory of phylogenetic reversion, paramolars may be an atavistic appearance of fourth molar of primitive dentition. Hyperactivity theory is the most acceptable one. It states that supernumerary teeth such as paramolars are result of local, independent conditional hyperactivity of dental lamina. According to this lingual extension of additional tooth, bud gives supplemental or eumorphic tooth. Rudimentary form arises from proliferation of epithelial remnants of dental lamina induced by presence of complete dentition [2, 5].

The occurrence of paramolar is a relatively uncommon dental finding. The exact etiology of this anomaly is unknown. Various factors have been proposed as etiologic factors for development of this anomaly[10,11] . According to the theory of phylogenetic reversion or atavism in past centuries, dental arches gradually reduced their dimensions, losing off some teeth, causing greater development of the neurocranium than the splanchnocranium so the supernumerary teeth like 'paramolars' are referred as phylogenetic throwback[10,11]. Another theory suggests that, due to hyperactivity of the primary dental lamina, supernumerary teeth such as paramolars are formed[10,11]. The third theory hypothesized that some malformations of the dental germ, caused by traumatic factors occurring before the eruption of teeth can be the cause of anomalies in excess of teeth such as paramolar[11]. The most accredited theory sustains that teeth in excess of the normal number are of genetic nature and this would also explain the presence of supernumerary teeth in the relatives of subjects affected with this dental anomaly[11,12]. Countable numbers of paramolar anomalies are reported in the permanent dentition[13-21]. Incidence of paramolar in the primary dentition is extremely rare. Only one case of paramolar in primary mandibular molar region has been reported[22]. Predominantly, paramolar occur singly[13-21]. Only two cases of bilateral presentation of paramolar, one in the mandible [17]and the other in the maxilla [23]have been reported. Fusion of the paramolar with their normal counterpart is also a rare finding. There were also reports on an endodontic management of paramolar tooth fused to its normal counterpart [21] and paramolar with bifid crown[20]. In differential diagnosis, other structures which occur in the maxillary molar region like paramolar tubercle and fused supernumerary tooth [24] should be ruled out. Paramolar tubercle is also known as "parastyle" and "paramolar cusp"[25]. This trait is a cingulum derivative expressed on the buccal surface of the mesiobuccal cusp (paracone) of the upper molars. In rare instances, it is expressed on the distobuccal cusp (metacone) of the upper molars and the buccal surfaces of the upper premolars. Dahlberg suggested that paramolar cusp is a term applied to "any stylar or anomalous cusps, supernumerary inclusion or eminence occurring on the buccal surfaces of both upper and lower premolars and molars[26]. Its significance is unknown but it is reported that as paramolar tubercles arise from the buccal cingulum, these structures in human dentition probably represent the remnants of the cingulum of mammals and the lower primates. Supernumerary teeth can cause numerous complications. The presence of paramolar can leads

variety of clinical problems such as crowding, due to insufficient space for the eruption of other teeth; malocclusion due to a diminution of the space in the dental arch when the paramolar erupts; retention or ectopic eruptions of adjacent teeth which are still not erupted; delayed eruption or displacement of adjacent teeth; periodontal disease and caries, if the paramolar presence causes interferences with oral hygiene procedures[23]traumatic bite, due to its buccal position they may cause laceration to the buccal mucosa; pulp necrosis and root resorption of the adjacent teeth, due to the pressure exerted by the paramolar tooth [13]formation of diastema, between the molars; interference with orthodontic treatment; follicular cyst, due to the degeneration of the follicular sacs; neoplasm[10]; pain in the molar area and neuralgia of the trigeminal nerve, when the paramolar compresses the nerve[22-27]. Although these complications do not occur frequently, there is a need for early diagnosis, which will allow for the prevention of such complications. As most paramolar teeth are impacted, in the absence of symptoms or clinical manifestations the best screening is radiographic investigation.

Supernumerary teeth are often associated with syndromes like cleidocranial dysplasia, gardener's syndrome, fabry-anderson syndrome, ellis-van creveld syndrome, cleft lip and palate, and so forth [2.] Microdontia is also often associated with syndromes like gorlin-chaudhry-moss syndrome, william's syndrome, hallermann-streiff syndrome, orofaciodigital syndrome, and so forth [8].however the present case did not show any manifestations of syndromes.

In differential diagnosis of supernumerary structures in molars fused supernumerary and paramolar tubercle has to be considered. Paramolar tubercle is anomalous or stylar cusp or supernumerary inclusion or eminence occurring on buccal surface of both upper and lower premolars and molars [5,28,33,34]

Numerous complications can occur due to supernumerary teeth such as crowding, malocclusion, delayed eruptions, localized periodontitis, spacing, caries, root resorption, dentigerous cyst, and abnormal root development [2, 3]. Both of the cases presented with clinical complication of caries with paramolars and localized periodontitis in adjacent areas.

IV. CONCLUSION

Paramolars are unusual entities which predominantly occur singly and rarely bilaterally and may be associated with complications. Clinician should be aware of dental anomalies involving the numbers, size, and shape and should manage them appropriately to minimize the complications. Knowing novel techniques of exodontia would help clinicians to provide adequate care for the patients, limiting the time of surgery and making patients more comfortable.

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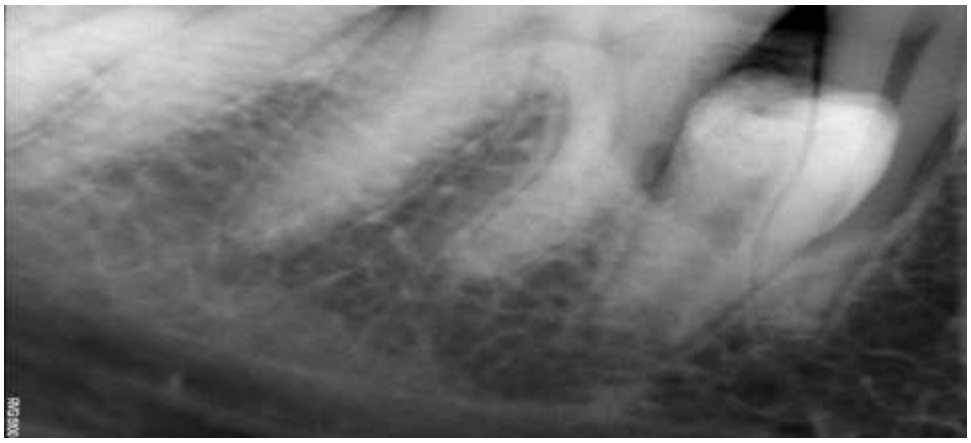
Preoperative view

Radiographic view



Extraction using A novel technique

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Extracted para pre molar

Extraction socket

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Sutures in place

One week post operative view