

# Multiple Dental Anomalies in Primary and Permanent Dentition: A Case Report

## Case Report

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Received: Jan 14, 2014

Accepted: Feb 18, 2014

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## Abstract

Dental anomalies are rare findings that may affect development of occlusion and early intervention may be required. Here, a case of multiple anomalies in primary and permanent dentitions is reported.

The patient referred to the dental center with the chief complaint of multiple tooth decay. In the oral examination, the rare case of triplication between the right geminated mandibular A and right mandibular B was observed. A talon cusp on the maxillary deciduous lateral incisor was also noticed. In the panoramic radiograph view, two permanent supernumerary teeth were found at the region of primary tooth anomalies in both jaws. The article describes the management of the dentition during the dental transitory years of 5 to 7. Precise examination may reveal anomalies that require intervention. In some cases, presence of one anomaly in primary dentition, can suggest the possibility of further anomalies in both primary and permanent dentition. In this case, careful initial examination and dental panoramic radiographs led to early diagnosis and appropriate treatment plans in mixed dentition years.

**Key words:** •Talon Cusp •Triplication  
•Supernumerary Tooth •Dental Anomaly

## Introduction

Talon cusps and conjoining defects are dental anomalies that may result in significant aesthetic and clinical problems. The reported frequency of talon cusp and conjoining defects are 1 to 4 and 0.5 percent, respectively.<sup>(1)</sup>

Conjoining defects include gemination, fusion, and rare instances of triplication. Some authors believe that germination and fusion are rather equivalent phenomena.<sup>(2)</sup> Triplication is the joining between three teeth. Conjoining anomalies are more prevalent in primary dentition, often in the anterior region.<sup>(3)</sup>

Although aesthetic and functional problems related to double primary teeth are transient, proper monitoring of dental development is necessary to prevent future malocclusion. Physiologic root resorption of fused primary teeth may be retarded, leading to delayed or ectopic eruption or missing of the permanent successors.<sup>(4,5)</sup>

Talon cusps manifest as an accessory cusp-like structure projecting from the cingulum or cement-enamel junction in either primary or permanent dentition. The associated clinical problems include food stagnation, caries, periapical lesions, tongue irritation, occlusal interference, dental sensitivity, and tooth displacement.<sup>(4)</sup> Even though talon cusps may occur in isolation, they may be associated with other anomalies including supernumerary teeth.<sup>(4,7)</sup>

Studies and case reports show possibility of permanent tooth anomalies following primary tooth anomalies including duplication. Some of these anomalies include hypodontia, supernumerary teeth, and repeated double tooth formation.<sup>(6)</sup> This article presents a case of talon cusp on a maxillary lateral primary incisor, and a triplication between mandibular primary central and lateral incisors, which was accompanied by

two permanent supernumerary incisors in both affected regions.

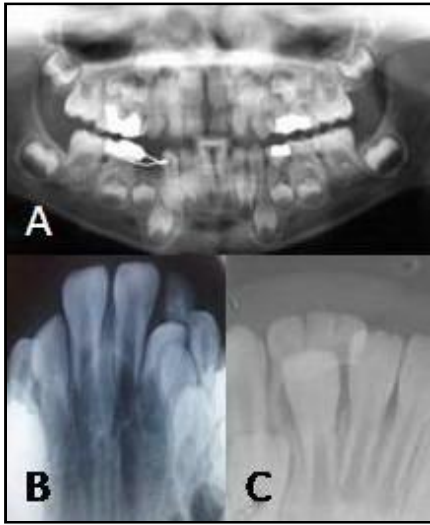
## Case Report

A 5-year-old girl referred to Dental College of Babol University of Medical Sciences at March 2013, with the chief complaint of multiple dental caries. History taking and clinical oral examination were done and revealed no significant medical history and no similar condition in parents or siblings. But, she had previous dental treatment experiences. At the clinical examination, two dental anomalies were found: 1- A talon cusp on the primary maxillary left lateral incisor 2- Triplication between the right geminated mandibular A and right mandibular B (Figure 1).



**Figure 1.** Talon cusp and triplication in primary teeth

As the presence of two dental anomalies suggests probable existence of further anomalies, a panoramic was prescribed to verify permanent tooth buds. As expected, other anomalies were found: 1-A permanent supernumerary tooth in anterior maxillary left region 2-A permanent supernumerary tooth in anterior mandibular right region. All of the permanent teeth were present. Complementary periapical and occlusal radiographs were prescribed to show the exact situation of supernumerary teeth (Figure 2).



**Figure 2: Panoramic and periapical view of supernumerary teeth**

The Parents were informed of the situation and the patient underwent a 3-month recall program to observe the eruption path and supernumerary teeth. Meanwhile, other dental treatments were done. After 6 months, the primary right mandibular central and lateral incisors and left central incisor were still in place and the right mandibular permanent central incisor erupted (Figure 3).



**Figure 3: Intraoral view of a mandibular supernumerary tooth after eruption**

The involved conjoined primary teeth were extracted (Figure 4).



**Figure 4: Extracted fused teeth**

The patient was followed up for a year, during this time dental treatments such as first permanent molar fissure sealants, first primary molar extraction and space maintenance were done.

A functional removable orthodontic appliance with Z spring and posterior bite plan was also prescribed to correct the anterior cross bite. A year later, the right mandibular supernumerary incisor erupted (Figure 5) and was extracted by forceps.



**Figure 5: Intraoral view after eruption of mandibular permanent incisors with band & loops in place**

The child is still under follow-up program to extract the supernumerary maxillary incisor by surgery at the time adjacent permanent roots are in the proper stage. She is also under control for the mandibular anterior region crowding.

## Discussion

Genetic and environmental factors can both play a major role in dental developmental anomalies.<sup>(2)</sup> Anomalies such as duplication or triplication in the primary dentition, suggest primary abnormalities which may be accompanied by other dental anomalies in other regions or in the permanent dentition.<sup>(8)</sup> This case can be a good example for combined developmental dental anomalies.

Triplication may be the result of fusion between three teeth, or fusion of a second tooth to a geminated tooth. In the present case, because of severe root resorption, the type of anomaly can only be determined according to size, shape, and the number of tooth crowns. In this case the first possible anomaly was gemination of central incisor, along with fusion to lateral incisor. We had also the second possibility of fusion between central and lateral incisor and a supernumerary tooth. Gemination occurs when two teeth develop from one tooth bud, thus the two halves of the joined crown are usually the mirror image. The number of teeth in the affected dental arch is normal. Supernumerary incisors are usually cone-shaped and aberrant.<sup>(3)</sup>

In the present case, we have two identical crowns which are separately smaller than a single central incisor, and a tooth with the normal size and shape of a primary lateral incisor. Thus in this case, the first predicted type of triplication is more probable. Natural exfoliation and regular check-ups are the treatment of choice in the transitional dentition. But if problems like malalignment or interference with the eruption of permanent successors are observed, removal of the primary teeth may be indicated. This also applies for cases of conjoining in primary teeth. In the present report, although a double row view was made in the anterior mandibular region, the tripli-

cated teeth could be given more time for normal exfoliation. But the teeth were extracted at parents' will.

As the anomalies of permanent dentition are associated with anomalies in primary dentition, it is strongly suggested that a panoramic radiograph should be prescribed in the mixed dentition for children with primary tooth anomalies. In some cases<sup>(5)</sup>, early diagnosis and treatment can prevent aesthetic and functional problems and eruption disturbances.

Talon cusps should be diagnosed and properly managed to prevent complications such as occlusal interference, compromised aesthetics, caries and periapical pathologies, and periodontal problems. The prevention of an accidental cusp fracture and attrition has also been emphasized.<sup>(9)</sup> Talon cusps on primary teeth can be reduced. If pits on the cingulum are present, they can be sealed. When there is no occlusal interference and the risk of caries is not high, as in the present case, intervention is not necessary.<sup>(10)</sup>

Supernumerary teeth should be extracted at a proper time. If impaction occurs, surgery is indicated. Supernumerary teeth can cause problems like disturbances in eruption, root resorption of adjacent teeth, and periodontal problems. Extraction can be done as soon as the tooth is erupted. The proper time for surgery is when the adjacent roots are completed to an extent that they are not damaged during surgery.

## Conclusion

1. When multiple anomalies are observed in primary dentition, a panoramic radiograph should be prescribed to discover possible anomalies in permanent dentition and eruption paths, to schedule careful periodic recalls and make necessary interventions at the proper time.

2. The first clinical examinations of children are of utmost importance. Even not very subtle anomalies may be missed in the case of inaccurate examination, so undergraduate students must be encouraged to have a more precise look in their examinations. First, clinical examinations are

strongly advised to be done under supervision of trained dentists.

3. Undergraduate students must be encouraged to have a more precise look in their examinations.

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