

## Early eruption of all permanent teeth, including the upper canines, in a nine-year-old child who was born prematurely; Case report

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## Early eruption of all permanent teeth, including the upper canines, in a nine-year-old child who was born prematurely; Case report

### Cover Page Footnote

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## CASE REPORT

# Early Eruption of all Permanent Teeth, Including the Upper Canines, in a Nine-year-old Child Who was Born Prematurely; Case Report

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### Abstract

The world health organization (WHO) give a definition for the premature baby as the birth occur before 37 weeks of gestation or if the birth weight is below 2500 g. Our case subjected for both criteria of the preterm definition [1,2].

The case was born before 31st week with 1300 g birth weight with stormy beginning of life in the first three months in the hospital according to the history taken from general practitioner (GP) for that reason their parents take care about his general health and specifically oral health and development. Throughout his life he developed healthy with no medical problem.

Since the primary dentition erupt his parents periodically check his teeth twice time a year. He did not show any dental abnormality or disturbance in sequence of eruption of primary teeth. When he hit the school age around 6 years old the primary teeth became erupt to the oral cavity started with lower central incisors, as a normal sequence of tooth eruption similar to the full term child [3]. Three years later at age 9 both primary upper primary canine removed and the tip of permanent canine become erupt to the oral cavity.

**Keywords:** Tooth eruption, Premature child, Demijian method

### 1. Introduction

**T**he problem associate with premature born child varies and it can be summarized by:

#### I. Structural changes in the dental crowns

Enamel: enamel opacity and enamel hypoplasia.  
Crown dilacerations from endotracheal intubation.

#### II. Palatal distortions

Increase in height of the palate.  
Distortions of dental arches.

#### III. Retardation of dental growth and development

Delay in eruption of the primary dentition.  
Delay in growth of the permanent dentition [4].

In some growing child the chronological age different from the dental age [5]. More commonly the premature born child shows delay in the eruption time of the teeth of both deciduous and permanent sets of teeth [6] or in best scenario is the catch up the growth of normal birth child and growth as normal child.

There are many maturity indications of the human body and one of them is the tooth eruption which is valuable and essential. For that reason the tooth is considered biological marker for maturity [7].

To identify the accurate dental age of the patient, there are many radiographical methods used to assess the dental age like; Nolla, Demirjian and Moorrees method. The method used in the preparation for this paper is the Demijian method which more precise and reliable [8].

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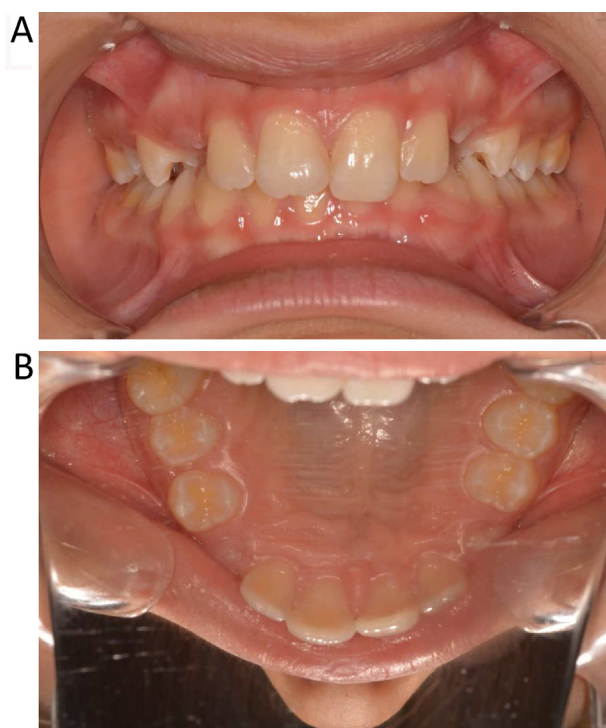


Fig. 1. Intra oral photograph A. frontal occlusion view. B. Maxillary dentition view.

## 2. Case presentation

Tooth eruption is the process by which developing teeth emerge through the soft tissues of the jaws and the overlying mucosa to enter the oral cavity, contact the teeth of opposing arch, and function in mastication [9]. In our case, due to periodic checkup visits the patient shows a rapid transformation period from primary teeth to permanent teeth through relatively short period 5.5 years time of

eruption of lower central incisor to 9.5 time of eruption of upper canines. These make dentists aware about the child started to catch up the growth of normal born child.

## 3. Canine eruption

Upper canines erupt on average at 11–12 years of age, erupting earlier in females than in males. It is consider as a second tooth possible to impaction after 3rd molar [10]. In our case the patient take out both upper primary canine at age 9.4 years old because of root resorption, not caries or trauma, one month after the tip of the permanent canine emerge to the oral cavity (Fig. 1).

## 4. Discussion

After the eruption of maxillary canine the curiosity to know the exact dental age push the parents to find out a way to do so, to make sure that their boy become equal to their child age. According to Catalina Ugalde Barahona et al [11] who divided the methods used identification of dental age into three groups:

- 1) Individual age 0–13 years old.
- 2) Individual age 14–21 years old.
- 3) Individual over 21 years old.

And used different methods like: Anatomical, Histological and Biochemical methods [11]. The anatomical methods using x-ray is more convenient.

The Demirjian methods shows a high accuracy in determining the dental age [12] with no harm to the patient and no required a plenty of armamentarium and instrumentation [13]. This method follows the pattern of maturation of tooth formation, from its



Fig. 2. OPG of the case at age 9 years old.

crypt to the complete root formation. We can correlate various stages of calcification, crown formation, crown completion, root formation, root completion and the layer of formation, dentine and enamel all those can be examine on OPG and correlate with standard table.

After examination the dental age of the case in OPG (Fig. 2). We found his dental age is 10.7 meanwhile his chronological age 9.5 years old.

## 5. Conclusion

Although the early eruption of upper canines recorded in some case report before the normal eruption time with absence of primary teeth [14]. Our case present shows an early tooth eruption in spite of prematurity in the early beginning. The reason is the good nutrition and genetic factors play a rule to compensate and make the case exceed this chronological age [15].

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