# Downs Syndrome – An Insight to Pediatric Dentistry

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***Abstract*: Down's syndrome is caused by a chromosomal abnormality and is characterized by physical, mental and medical features with specific oral manifestations. Downs syndrome named after John Langdon Down, the first physician to identify the syndrome, which is the presence of third chromosome 21 or trisomy 21. Downs syndrome is the commonest autosomal chromosomal anomaly with an incidence of 1 in 600 to 1000 live births in all races and economic groups. The number of features such as learning disability, cardiac anomalies and an altered immune system and oral manifestations like early onset of severe periodontal diseases, lower prevalence of dental caries, delayed eruption of permanent teeth, malocclusion, congenitally missing and malformed teeth, hypoplasia of mid facial region, hypodontia, microdontia, macroglossia, fissured and protruded tongue, tongue thrust, bruxism, clenching mouth breathing have a profound effect on oral health condition. The optimum potential of person with Downs syndrome is achieved through the multidisciplinary approach that involves the pediatric dentist from early stages.**

***Keywords*: Trisomy 21, Downs syndrome, Mental retardation, Saliva, Caries, Pacifier shaped device.**

## 1. Introduction

Downs syndrome is easily recognized congenital, autosomal anomaly characterized by generalized physical and mental deficiencies. It effects between 1 in 600 and 1 in 1000 live births. Downs syndrome is named after John Langdon Down, the British doctor who first described the condition in 1887 [1], [2] The incidence of downs syndrome rises with the increasing the maternal age. The features of downs syndrome can range from mild to severe. Their mental and physical development are slower in people with Downs syndrome [1], [3] Downs syndrome people have IQS that fall in the mild to moderate line of mental retardation. They have delayed language development and slow motor development [3]. Children with Downs syndrome often have chronic upper respiratory tract infections, which leads to mouth breathing associated with effects of xerostomia and fissuring of tongue and lips [4].

## 2. Case Report

A 11yr old girl reported to the Department for preventive and Pediatric dentistry, Yogita Dental College and Hospital, with a complaint of pain in lower left back tooth region of mouth since five days. The family history revealed that he has two siblings, one girl and boy with no syndromic features. On general examination, patient is short stature and mild mentally challenged. On extra oral examination patient had saddle nose deformity hypoplasia with retruded maxilla and protruded mandible. Intra orally, high arc palate was present. A detailed clinical examination revealed typical features of Downs syndrome. The IOPA revealed the presence of root stumps i.r.t 36. Pit and fissure caries i.r.t 16, 55, 65, grossly decayed with i.r.t 26 & 46, grade II mobility w.r.to 75. Extraction has been done under local anesthesia w.r.to 36.Mouth breathing habit was present. Calculus was present.

## 3. Discussion

Down syndrome is an autosomal chromosomal anomaly resulting from trisomy of all or a critical part of chromosome 21 [5]. The signs and symptoms of down`s syndrome are characterized by neotenization of brain and bodies. Management strategies such as early childhood intervention, screening from common problems, medical treatment when indicated a conductive family environment and vocational training can improve the overall development of children with down`s syndrome [6]. The changes in body of the children with down syndrome are manifest through the short stature , short legs, and arms, slow skeletal maturation, poor muscle development, always with the presence of obesity, poorly developed male genitalia, short and wide neck, dry and rough skin, straight and smooth hair [7]. Open mouth with protrusion of the hypotonic and fissured tongue, hypoplastic upper jaw, short and hard palate, psuedoprogenic bite, delay eruption of the teeth, persistence of some deciduous tooth up to 15 years, the order of eruption of teeth is disturbed, hypodontia, microdontia, atypical form of dental crowns and taurodontism [8]. Also patient with down syndrome can present periodontal disease, premature tooth loose, reduced salivary flow, crowding of teeth in both arches and decreased occlusal vertical dimension. Increased frequency of periodontal diseases, reduced incidence of dental carried, often spilling of saliva from

the mouth. Despite the development of prenatal diagnosis, the incidence of Down syndrome birth is predicted to remain static or even to increase over the next decade, partly due to increased maternal age [9]. Dental care of the patient with down syndrome can be achieved in the general practitioner`s office in most instances with minor adaptations. Although this population has some unique dental care needs, few patients require special facilities in order to receive dental treatment. Treatment plans may need to be as necessary due to each individual`s condition, but the overall goal should be to provide as comprehensive treatment as possible [10].

Fig. 1. Front view

Fig. 2. Right profile

Fig. 3. Front profile

Fig. 4. Root stumps w.r.t. 36

Fig. 5. Clinical view

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