Case Report

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Cornelia De Lange Syndrome: A Case Report of a 5 Year Old Boy

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Abstract

Cornelia de Lange syndrome (CdLS) is rarely seen syndrome with incidence between 1/10,000 and 1/60,000 neonates. It is characterized by typical facial features, besides involving multiple systems. We present here a case of 5 year old male child with typical facial features of CdLS like bushy eyebrows that meet in midline, long eye lashes, long philtrum, thin upper lip, depressed nasal bridge and anteverted nostrils. The patient was diagnosed as having Cornelia de Lange syndrome as he has distinctive facial features in addition to the pre- and postnatal growth retardation, hirsutism and speech delay. He has been followed up by interdisciplinary care team.

Keywords: Cornelia De Lange Syndrome; Incidence; Typical Facial Features; Brachman De Lange Syndrome; Classical CdLS; Mild CdLS; Phenocopy CdLS.

Introduction

Cornelia de Lange syndrome (CdLS) is a rare genetic disorder that affects multiple systems. Typically it is characterised by distinctive facial appearance, intellectual disability, growth failure and hirsutism as prominent features [1].

This syndrome affects both the physical and intellectual development of a child. This syndrome is otherwise called as Brachman de Lange syndrome as this was identified first by a Dutch paediatrician Brachman in 1933. Incidence is rare and affects between 1/10,000 and 1/60,000 neonates [2].

Congenital anomalies of CdLS include malformations of the upper limbs, gastrointestinal malformation/rotation, pyloric stenosis, diaphragmatic hernia, heart defects and genitourinary malformations. Gastroesophageal reflux disease is present in almost all patients [3].

The distinct facial characteristics of CdLS include highly arched eyebrows, synophrys, long eyelashes, short nose with anteverted nares, small widely spaced teeth, and microcephaly. Other frequent findings include loss of hearing, ophthalmic abnormalities, cardiac septal defects, gastrointestinal dysfunction, and cryptorchidism or hypoplastic genitalia. Individuals with a milder phenotype have less severe growth, cognitive, and limb involvement, but often have facial features consistent with CdLS [4].

Sporadic cases of CdLS are most common, but familial transmission with an autosomal dominant hereditary pattern has also been reported [5].

Case Report

A 5 year old male child was presented to Pediatric department, Navodaya medical college, Karnataka with the complaints of not gaining weight. He was born to a consanguineous couple 3rd in order of birth. He was a full term baby born through normal vaginal delivery. Child did not cried for about five minutes after birth.

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Physical examination revealed weight, height and head circumference as 10 kg, 89 cms and 45 cms respectively, all below 3rd percentile as per WHO charts.

General examination reveals arched confluent and bushy eyebrows, well-defined long curly eyelashes, anteverted nares with long philtrum, microcephaly (Figure 1), and excessive body hair (Figure 2) without any gross limb deformities. X-ray of wrist joint showed delayed and hypoplastic appearance of epiphyseal centre in right ulna (Figure 3).

No abnormality has been detected in systemic examination. Ophthalmologic and ear examination also revealed normal findings.

The child had speech difficulties and was using gestures and incomplete words to communicate. He is more aggressive and anxious.

The complete blood count, biochemical parameters and urine analysis were normal. Echocardiography was normal. Genetic analysis was not done due to financial constraints.

The child has been followed up by an interdisciplinary care team (pediatrician, gastroenterologist, neurologist, physiotherapist, dentist, speech therapist, and psychologist). After a series of follow-ups over a period of one year, child was found to be less aggressive, playful and there was a marked improvement in speech suggesting the importance of interdisciplinary approach in managing child with CdLS.

Fig. 1: Typical facial features

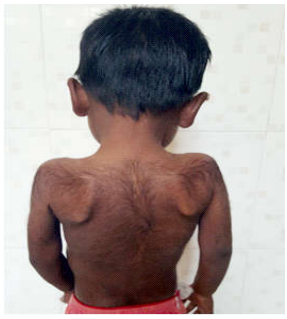

Fig. 2: Excessive body hair

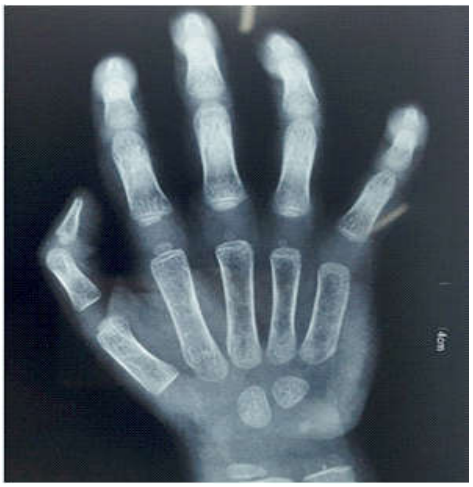

Fig. 3: Hand and wrist X-ray hypoplastic epiphyseal centre

Discussion

CdLS is a rare multisystem disorder with an overall incidence of between 1/10,000 and 1/60,000 [2]. Majority of the CdLS cases are sporadic [6], however familial inheritance with autosomal dominance pattern has also been reported [7].

CdLS is mainly classified into three types based on clinical manifestations. Type I also called as classical CdLS is characterized by typical facial features, severe growth deficiency prenatally and psychomotor retardation.

Type II also called as mild CdLS, has almost similar facial features but with minor skeletal and systemic malformations, which develop with time or are only partially expressed. They may present with border-line psychomotor retardation. Type III also called as "phenocopy CdLS" will have similar phenotypic manifestations of CdLS that may be related to chromosomal aneuploidies or teratogenic exposures [8].

CdLS can be diagnosed with the help of typical clinical manifestations. Genetic analysis of chromosomal mutations is not needed to confirm the syndrome [9].

The major causes of death in CdLS were in the following order: aspiration pneumonia (31%) followed by gastrointestinal disorders like obstruction or volvulus (19%) and then by congenital anomalies like diaphragmatic hernia and congenital heart defects (15%) [10]. Milder form of CdLS has good prognosis when compared with that of classical form [11]. Multidisciplinary approach towards patients with CdLS has a good potential for improving the overall health of patients [12].

Conclusion

Despite its rare occurrence, CdLS poses serious limitation on the quality of life of the affected patient which is evident from the clinical manifestations. As CdLS involves multiple systems, multidisciplinary approach to caring for patients with CdLS is essential. A better understanding of etiology, pathogenesis and clinical manifestations can be established with more number of case studies that will help for establishing strategies for improving the quality of life of affected individuals.

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