Case Report

Congenital autosomal recessive cutis laxa 2A

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ABSTRACT

Congenital cutis laxa is a rare inherited skin disorder and shows diverse phenotypic features among its different variants. Most forms are progressive and dysmorphic features worsen with age giving an appearance of early ageing. Autosomal recessive cutis laxa, type 2a, (ARCLIIa) is the only variant where phenotypic features undergo spontaneous regression and self-resolution with age. We are reporting a case of congenital ARCLIIa, in a child who had primarily presented with right-sided pneumonia. The child was investigated and worked up for cutis laxa based on skin appearance and characteristic facies (loose sagging skin, redundant skin folds, and hound-like facies). In view of history of a cousin having similar findings which had self-resolved overtime without any treatment, we further suspected it to be type 2A variant, which was proven by genetic analysis (ATP6V02 gene). Hence, we wish to report this case.

Key words: ATP6V02, Cutis laxa, Hound-like facies, Redundant skin, Sagging skin

Congenital cutis laxa is an inherited disorder of elastin synthesis causing redundant sagging skin with decreased elasticity [1]. It may be inherited in autosomal recessive or dominant forms, the dominant one being relatively mild. The recessive forms are generally progressive with multisystem involvement. Self-resolution with time is seen only in rare cases, commonly in type 2A [2]. ATP6V0A2 is the gene involved and the phenotype can range from wrinkly skin syndrome to Debre-type cutis laxa syndrome [3].

Types of cutis laxa with features are elaborated in Table 1 for characterization of our patient's clinical features

CASE REPORT

We present a 1.5-year-old boy, born to third degree consanguineous parents, who came to us with complaints of cough, fever, and breathlessness and was diagnosed to have right middle zone pneumonia. We noticed that he had redundant loose skin on his face and trunk, with sagging skin on buttocks, groin, hands, and legs (Fig. 1). His weight and length were below the 3rd standard deviation. His motor development was appropriate for age, although there was a delay in expressive language. He had a 4 cm × 4 cm wide open anterior fontanelle (Fig. 2), hypertelorism, antimongoloid slant, sagging skin on cheeks, and giving him a bloodhound like facies (Fig. 1). With the suspicion of congenital cutis laxa, we investigated him further.

He had bilateral inguinal hernia (Fig. 1), left-sided Grade 2 hydronephrosis. His thyroid profile and echocardiography were normal. There was no developmental dysplasia of hip. His eyes were normal with no corneal opacities. There was no emphysema, eventration of diaphragm or diaphragmatic hernia. He was neurologically normal and did not demonstrate any abnormal athetoid hand movements. He had no significant history, this being his first hospital admission.

With these phenotypic features, we suspected autosomal recessive cutis laxa type 2 (ARCLII). However, he had a cousin with similar complains in childhood which had gradually self-resolved. This further clinched the suspicion to type 2A.

We did clinical exome sequencing which revealed a homozygous four base pair deletion in exon 16 of the ATP6V0A2 gene (chr12:g.124235698_124235701delTGTC; depth: 154×) that had resulted in a frameshift and premature truncation of the protein 23 amino acids downstream to codon 660 (p.Val660LeufsTer23; ENST00000330342.3), seen in congenital ARCLIIa.

DISCUSSION

Congenital ARCLII is a rare disorder, very few cases being reported worldwide [8]. Most cases are gradually progressive and self-resolution

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Table 1: Clinical features of different types of cutis laxa

Type	Features
Autosomal dominant	Delayed onset, inguinal hernia, bronchiectasis, benign course [4]
Autosomal recessive I	Diaphragmatic hernia, gastric diverticula, congestive cardiac failure, death within 1 year of life [5]
Autosomal recessive II	Prenatal and postnatal growth deficiency, large fontanelle, lax joints, developmental dysplasia of hip [6]
Autosomal recessive III (De Barsy syndrome)	Corneal opacities, mental retardation, pseudoathetoid movements [7]

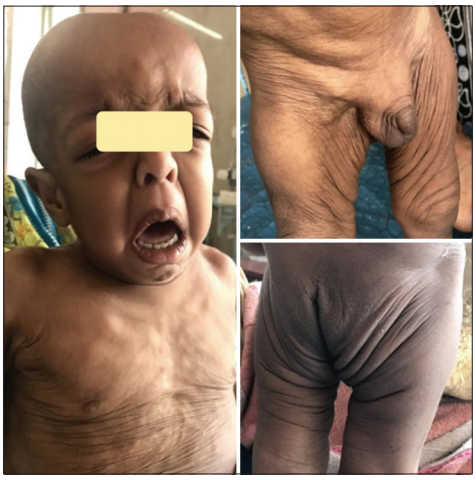

Figure 1: Hypertelorism, bloodhound-like facies, bilateral inguinal hernia, sagging skin of trunk, and buttocks

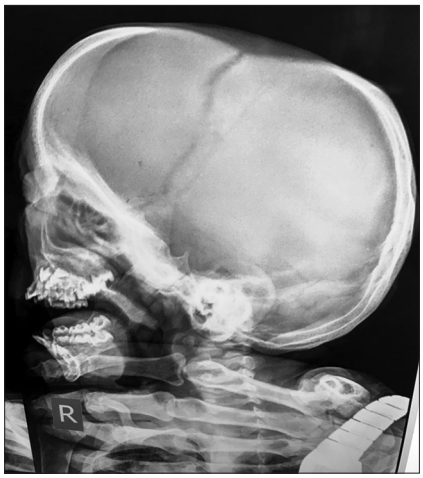

Figure 2: Large anterior fontanelle

is seen only in rare cases, especially type 2A [2]. Considering the history of the cousin, and the third degree consanguinity, we suspected ATP6VOA2 gene involvement in this child, which turned out to be true, hence, we wish to report this case. In a genetic analysis by Hucthagowder *et al*. among 17 patients with ARCL2, four patients with homozygous exon 16 deletion causing premature protein truncation, similar clinical profile was noted, including inguinal hernia and urogenital abnormalities, with preserved central nervous system function [9].

CONCLUSION

A clinically suspected and genetically proven case of congenital ARCLIIa is presented with clinical characteristics and genetic analysis report.

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