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Urofacial (Ochoa) Syndrome - A Case Report

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ABSTRACT Urofacial (Ochoa) syndrome is a very rare autosomal recessive disorder characterized by a peculiar inverted facial expression, mainly when smiling or crying and urinary abnormalities. A 5-year-old boy, born of non-consanguineous marriage presented with characteristic facial grimace, enuresis, constipation and delayed milestones. An evaluation of GTG–banded metaphases revealed a normal karyotype with a paternally inherited variant chromosome 14 (14ps+). However, his father showed a normal phenotype. This is the first report of Ochoa syndrome from India.

INTRODUCTION

Urofacial syndrome (UFS) or other wise called as Ochoa syndrome is a rare disorder with enuresis, urinary tract infection, constipation and inversion of face when crying and / or laughing and abnormal radiological findings of genitourinary tract. Over hundred patients in the last four decades with Ochoa syndrome have been reported with dysfunctional lower urinary tract associated with a peculiar distortion of the facial expression (Ochoa 2004). Elejalde (1979) reported this syndrome for the first time in seven children who exhibited a combination of hydronephrosis, hydroureter and a peculiar expression of the face mainly when smiling or crying. Similar phenotypic features were confirmed by Ochoa and Gorlin (1987) in 37 children. Teebi et al. (1989) and later Teebi and Hassoon (1991) presented a single case each of Ochoa syndrome from Kuwait with similar and other additional features. Chauve et al. (2000) reported the first European case of UFS in a French family. Subsequently, Garcia-Minaur et al. (2001) reported three more European cases of Ochoa syndrome with characteristic features and Fernandez et al. (2001) presented a single female child from Spain. This report of a boy with typical clinical and radiological features of UFS is the first of its kind, to our knowledge, from India. The present study will create awareness about the existence of Ochoa syndrome with each phenotypic feature and will also stress the importance of early diagnosis.

CLINICAL REPORT

A five-year-old male was brought to the hospital with a history of enuresis, recurrent fever with atypical febrile fits and constipation. He was second-born of non-consanguineous parents and had a younger brother who was phenotypically normal. His elder brother died of accidental cause at a relatively early age. Antenatal history was uneventful and he was delivered normally at full term. The parents complained of no medical or previous bad obstetric or gynecological history.

On examination the boy was found to exhibit various abnormalities like typical inversion of facial expression while laughing or crying, flat and wide nasal bridge, mild hypertelorism, low set ears, epicanthal folds, wide philtrum and high arched palate (Fig. 1A). The developmental milestones were delayed and he had mild mental retardation. He also had speech and expressive

abnormalities. His head circumference was 48 cms and height was 103 cms. He weighed 11 kg.

Ultrasound examination revealed bilateral enlargement of both kidneys with dilation of the collecting system, renal pelvis and bilateral hydronephrosis. IVP showed bilateral pelvic ureter junction narrowing with hydropelvis. Micturating cystourethrogram (MCU) showed normal bladder contour with no vesicoureteral reflux (VUR). Diuretic nuclear renal scan using ^{99m}TCDTPA showed split renal function of left kidney (59%), right kidney (41%) and residual bladder capacity of approximately 9%. The general impression was that of good corticoid function of left kidney with significant PUJ tracer status and partial excretion of tracer. There was

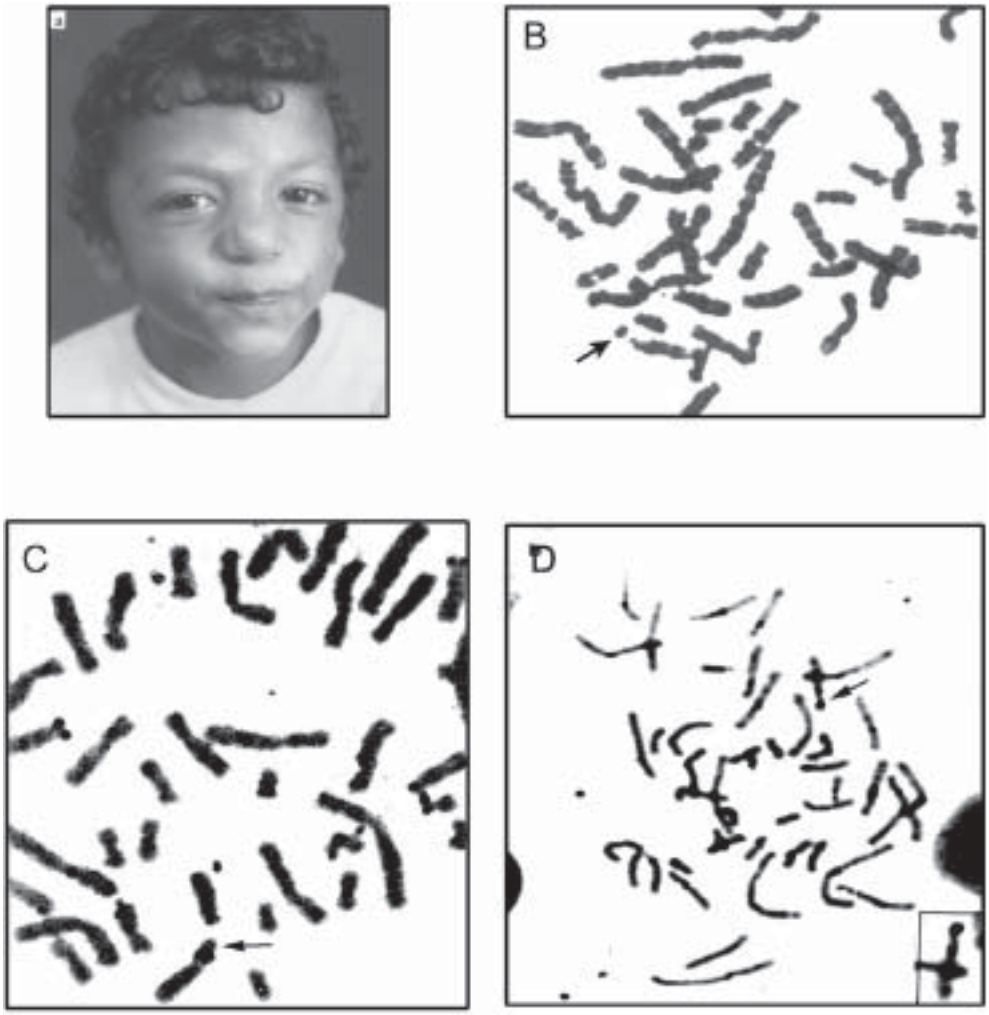

Fig. 1A. Photograph of the boy with Ochoa syndrome showing inversion of facial expression, flat and wide nasal bridge, mild hypertelorism, low set ears, epicanthal folds and wide philtrum.
Fig. 1B. GTG-banded partial metaphase of boy with Ochoa syndrome showing a variant chromosome 14 (shown by arrow): 46,XY,14ps+pat
Fig. 1C. AgNOR-banding showing a prominent satellite.
Fig. 1D. CBG-banded metaphase of the boy showing a positive CBG-band (insert shows the variant chromosome).

minimal to mild reduction of cortical function of right kidney with significant excretion of tracer. Urine examination and culture were normal.

CYTOGENETIC FEATURES

Chromosomal analysis revealed the patient to have a normal karyotype. He possessed a variant chromosome 14 (14ps+) where the length of satellite on its short arm was longer (Fig. 1B). AgNOR-banding followed by subsequent Giemsa staining technique suggested a prominent satellite (Fig. 1C). However, it was of interest to observe a positive CBG-band (Fig. 1D) in this region. The father of the boy was also a carrier of this chromosomal variant but had a normal phenotype. Both his mother and his younger brother showed a normal karyotype devoid of this variant chromosome.

DISCUSSION

The typical 'inversion' of face during crying and smiling and obstructive abnormalities of urinary tract are the primary manifestations of Ochoa syndrome. Eljalde (1979) reported peculiar facies and gestures while smiling and crying, hydronephrosis, hydroureter and intravesical stenosis of the ureter, abnormal caliber of the urether in the prostatic and membranous portions, urethral valves, abnormal bladder with trabeculation, and diverticula associated with severe hypertrophy of the mucosa with sclerotic changes in the seven patients studied with normal psychomotor development, and reported Ochoa syndrome for the first time. The abnormal facies recorded in the present study was similar to that reported by Eljalde (1979) and Ochoa and Gorlin (1987). Teebi et al. (1989) reported a boy with inverted facial expression upon laughing and renal changes due to neurogenic bladder in addition to hydrocephalus, suggesting wide spectrum of abnormalities of Ochoa syndrome.

About two-thirds of the patients have been reported to have constipation (Ochoa and Gorlin 1987). This feature was observed in this patient also. The parents were non-consanguineous but all previous reports had noticed consanguinity. Eljalde (1979) suggested autosomal dominant inheritance while Ochoa and Gorlin (1987) supported autosomal recessive inheritance.

Teebi et al. (1989) reported a normal karyotype in their patient. In the present study, the patient exhibited a variant chromosome 14 which was also seen in his phenotypically normal father. This is the first report of a chromosomal variant in Ochoa syndrome. The short arms of human acrocentric chromosomes are known to show considerable degree of size heteromorphisms with apparently no effect on phenotype. These variations are thought to result from unequal crossing over between the acrocentric chromosomes (Earle et al. 1992). His mother and younger sib were found to have a normal karyotype.

Wang et al. (1999) had narrowed the urofacial syndrome critical region to an interval between markers D10S198 and D10S2494 localized at 10q23-24. In addition to a number of widely expressed transcribed sequences, transcripts exclusively or predominantly expressed in the brain represent potential candidates for the neurological diseases associated with this genomic region (Nobile and Pitzalis 1999).

The finding of mild mental retardation and a low IQ in this boy suggest that molecular analysis for this critical region would throw light on the genetic homogeneity of this syndrome.

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