Hypertensive Encephalopathy: A Rare Presentation of Williams-Beuren Syndrome

Mohammad Sajjad Sabir, Muhammad Amir Ali Khan and Najmul Hasan

ABSTRACT

A male child of four years is reported with Williams-Beuren Syndrome (WBS). It was not recognized initially when he presented with odd facies and developmental delay since early infancy. The diagnosis was established later when he developed hypertensive encephalopathy secondary to bilateral renal artery stenosis, a congenital anomaly that must be looked for in such patients. No echographic evidence of congenital heart disease was found. Blood pressure estimation on routine physical examination of every child is emphasized. The diagnosis is mainly clinical as the definitive chromosomal studies are presently not available in Pakistan.

Key words: Williams-Beuren Syndrome. Childhood Hypertension. Congenital renal artery stenosis.

INTRODUCTION

Williams-Beuren Syndrome (WBS) is a rare genetic disorder with an autosomal dominant inheritance and is usually caused by de-novo deletion of series of genes, particularly ELN (ELASTIN) and LIMK-1 (LIM KINASE-1), on the long arm of chromosome 7. It occurs once in 20,000 births, equally in people of all ethnic backgrounds. Patients with this disorder have a constellation of distinct facial features often described as “elfin” or “pixie-like” that includes a bitemporal narrowness, broad brow, short upturned nose, small chin with malocclusion, large upper lip and long philtrum with a wide mouth, small widely spaced teeth and puffiness around eyes. These facial features become more prominent as the patient grows older. Adult patients typically have a long face and neck, accentuated by sloping shoulders, resulting in a lean appearance. Rectal prolapse and joint laxity is common. Supravalvular aortic stenosis (SVAS) occurs in about 75% cases. Peripheral pulmonary stenosis (PPS) is common during infancy and tends to improve with age. Renal artery stenosis and renovascular hypertension is also seen. Approximately two-third cases have mild to severe mental retardation and visuospatial disability. They are noted to be inappropriately talkative, anxious, and may exhibit unusual friendliness. Common endocrine abnormalities include idiopathic hypercalcemia (15%), hypercalciuria (30%), hypothyroidism (10%), and early puberty (50%). A specific technique called fluorescent In-Situ hybridization (FISH) test can determine deletion of the genetic material in over 99% of cases. Prenatal diagnosis is possible with the help of chorionic villus biopsy or by amniocentesis. Real-time quantitative PCR and genomic microarray analysis is also useful in making a definitive diagnosis. This report describes this uncommon case of a male child who was diagnosed with the onset of hypertensive encephalopathy.

CASE REPORT

This 4 years old boy is the first issue of consanguineous parents. His birth was unremarkable, but was labelled as having somewhat odd facies that did not suggest any typical syndromic resemblance at that time. He manifested with a small head size, flat nose, prominent eyes, low set ears, thin lean body proportions, dusky appearance of mucous membranes with normal oxygen saturation and a certain degree of generalized flappiness. An echocardiogram undertaken at the age of 6 weeks to rule out congenital heart disease proved to be inconclusive. He was reported as physically quite active, at times very friendly or unexpectedly apprehensive in behaviour. His motor milestones were significantly delayed since early infancy. At the age of 3 years, he was hospitalized with intractable vomiting, headache, impaired alertness followed by generalized tonic clonic seizures without fever and was discovered to have a high blood pressure of 150/110 mmHg (> 95th centile), but fundoscopy did not show any papilledema. He was managed in the intensive care with intravenous midazolam and sublingual nifedipine followed by enalapril and furosemide besides other supportive treatment.

Physical findings included head size of 44 cm (25th centile), standing height of 90 cm (25th centile), weight of 12 kg (10th centile), flat up-turned nose, large and broad upper lip with long philtrum, wide mouth, small
carried out. 8 Patients with combined SVAS and PPS and mental retardation. Genetic studies were not with typical association of supravalvular aortic stenosis this purpose. WBS being an uncommon condition and pronounced. Clinical diagnostic criteria are available for the child grows older, the facial features become more as the most likely final diagnosis as the specific chromosomal studies could not be undertaken. In the follow-up, he has been advised to undergo percutaneous balloon angioplasty or placement of an intravascular stent.

**DISCUSSION**

Making a morphological diagnosis of WBS on the basis of dysmorphic features may be difficult at birth, but as the child grows older, the facial features become more pronounced. Clinical diagnostic criteria are available for this purpose. WBS being an uncommon condition and our inability to recognize hypertension in this patient led to a delayed diagnosis. When he presented with hypertensive encephalopathy, then bilateral renal artery stenosis was discovered by Doppler studies at the age of 3 years. It emphasizes the significance of blood pressure estimation as a part of physical examination in all children. Hypertension, usually secondary to renal artery stenosis, is common in children and adolescents with WBS but warrants early clinical recognition during childhood. Maadullah and Bilal reported a case of WBS with typical association of supravalvular aortic stenosis and mental retardation. Genetic studies were not carried out. Patients with combined SVAS and PPS (biventricular outflow tract obstruction), may develop biventricular hypertrophy and hypertension, thereby increasing the risk of myocardial ischemia, dysrhythmias and sudden death. There is increased risk for myocardial insufficiency during induction of anaesthesia for surgical procedures in patients with biventricular outflow tract obstruction.

Following the initial diagnosis of WBS, a complete physical and neurological examination, measurement of blood pressure in all four limbs, echocardiogram with Doppler flow studies, ultrasound examination of kidneys, ureters and bladder, renal function tests, serum and urinary calcium estimation, thyroid function tests, baseline ophthalmologic and audiologic evaluation, assessment of speech, language, personal-social, general cognitive, motor and vocational skills, behavioural evaluation including attention, anxiety, and adaptation skills is suggested.

Unique personality traits have been described in the literature as overfriendliness, attention deficit, perseveration, gregariousness, anxiety, unusual or restricted interests, sleep difficulties and specific phobias. Behavioural counselling and psychotropic medication may be required in 50% of the cases to manage attention deficit and anxiety. Availability of the specific chromosomal/genetic studies is very important to make a precise diagnosis of WBS.

**REFERENCES**