BANGLADESH J CHILD HEALTH 2015; VOL 39 (1) : 50-53

Escobar Syndrome - A Case Report in A Newborn

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Introduction:

Escobar syndrome is a rare autosomal recessive disorder which is also called "*multiple pterygium syndrome."* Multiple pterygium syndrome is manifested by two types - lethal and the non-lethal type. The more severe presentation, the lethal multiple pterygium syndrome comprises intrauterine growth retardation, multiple pterygia of the neck, elbows and knees, arthrogryposis and internal anomalies including fetal hydrops with cystic hygroma, microcephaly, cerebellar and pontine hypoplasia, cardiac and lung hypoplasia, intestinal malrotation, obstructive uropathy and cryptorchidism.[1] Escobar syndrome is the name given to the non-lethal type of multiple pterygium syndrome. The most distinguishing characteristic features of this syndrome are congenital arthrogryposis, pterygia and spine deformities.[2]

The first case was described by Bussiere from Pondicherry in the year 1902. However, it was named as multiple pterygium syndrome by Gorlin*et al* in 1976.[3] Six years later in 1982 it was named as Escobar Syndrome after Victor Escobar who along with his associates prepared an extensive report on this disease in 1978.[4]

The etiology of Escobar syndrome is unknown. However, it has been suggested that mutations within the gamma subunit of CHRNG gene of Acetyl Choline receptor (AChR), which has a role in the muscle-relaxant effect is responsible for the muscle contractures seen in this disorder.[5] This acetylcholine receptor has 5 subunits - 2 alpha, 1 beta, 1 delta and 1 gamma/epsilon unit. The gamma subunit is replaced by the epsilon in later fetal or perinatal life. Absence of gamma subunit in fetal life causes reduced fetal movement which is responsible for the contractures.[6] Complete or severe functional disruption of fetal AChR causes lethal multiple pterygium syndrome, whereas milder alterations result in fetal hypokinesia with congenital contractures or a myasthenic syndrome later in life.[7]

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Thus, Escobar syndrome is an example of a devastating dysmorphology due to a transient neuromuscular end-plate disturbance, but whether all the features are due to this defect alone is debatable.[7] Very limited number of cases of Escobar syndrome has been reported in the literature. We present a case having multiple features of Escobar Syndrome in a newborn. To the best of our knowledge, this is the first case report of of Escobar syndrome in Bangladesh.

Case Report:

A female newborn, 1st issue of non-consanguineous marriage, was admitted to NICU, CMH, Dhaka with complaints of "facial dysmorphism and multiple limb deformities". She was the product of a full term pregnancy with LUCS due to oligohydramnios and mother was under irregular antenatal check up. The family history was negative for congenital abnormalities.

At birth the baby had dysmorphic face and structural abnormalities of limbs and trunk. She had a flat face with micrognathia and long philtrum. She also exhibited limited mouth opening and microstomia and recessed chin (Figure-1,2). Eyes showed mild ptosis, hypertelorism and anti-mongoloid slant of palpebral fissures (Figure-1). The baby had hirsutism in limbs (Figure-3).

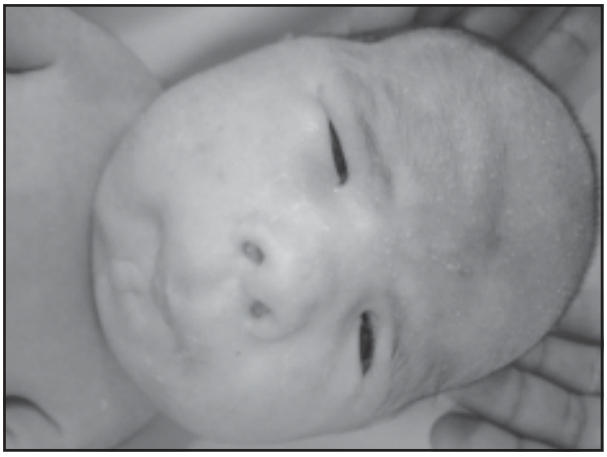

Fig.-1: *Facial dysmorphism - Ptosis, hypertelorism and anti-mongoloid slant of palpebral fissures, micrognathia and thin lips.*

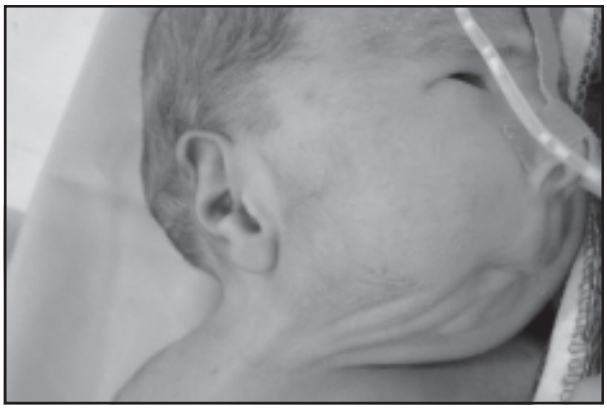

Fig.-2: *Micrognathia, pterygium of neck (webbing)*

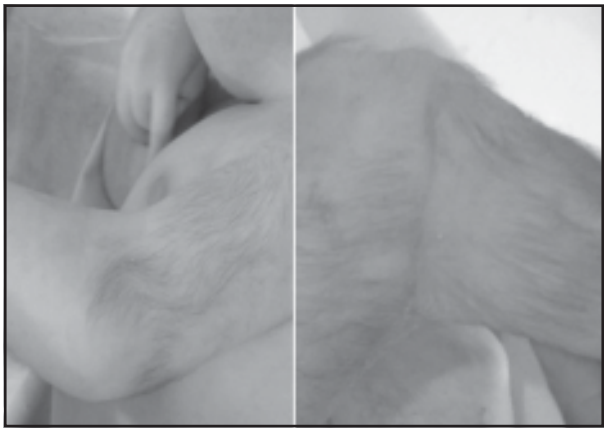

Fig.-3: *Pterygium of limbs with hirsutism*

There was bilateral flexion deformity of the elbow, wrist, knee and ankle joints and webbing across all flexion creases (Figure-3,5). She also had camptodactyly of all fingers and toes. She had scoliosis, contracted pelvis and both feet had a rocker bottom appearance. All her nails were normal. On genital examination her labia majora were rudimentary on right side, normal labia minora and introitus were present. No abnormality could be detected in respiratory, gastrointestinal or central nervous system examination. A continuous machinery murmur was audible in left 2ndintercostals space. She had average birth weight (2.6 kg) and OFC (35 cm).

The patient underwent extensive evaluation by neonatologist, paediatric surgeon, paediatric cardiologist, radiologist and orthopedic specialist. Internal structural deformities were also sought out by different investigations. Complete blood examination, Serum Electrolyte, Renal function test, Abdomen ultrasound was found to be normal. Echocardiography revealed a large PDA (2.2 mm) with left to right shunt which was not detected after high flow Oxygen therapy for 3 days. Radiograph of the spine revealed scoliosis (Figure-4). The case was diagnosed as Escobar syndrome.

The patient was clinically stable with the exception of inability to take oral feed due to abnormally small opening of mouth. Subsequently the patient was discharged after counseling and with regular follow up schedule in different specialties.

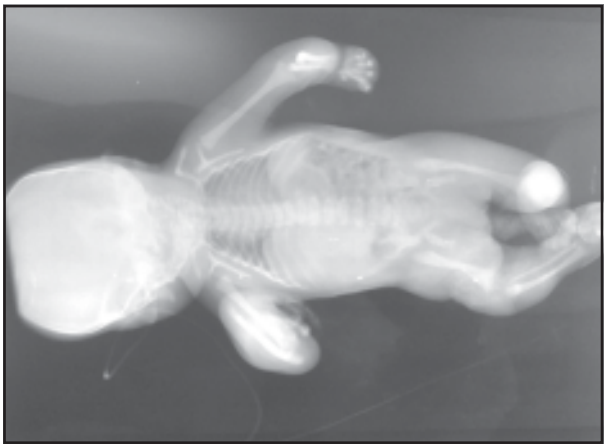

Fig.-4:*Babygram showing scoliosis & limb deformity*

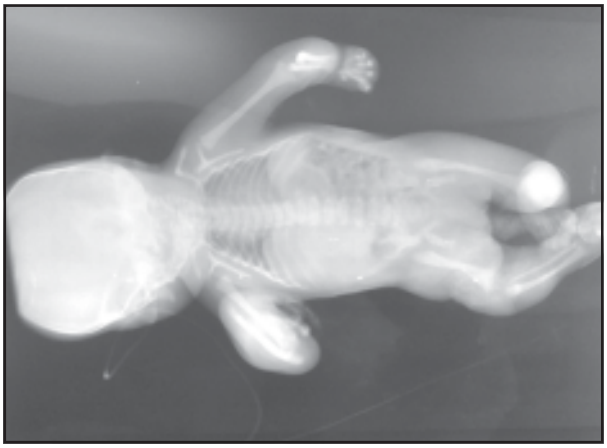

Fig.-5: *Facial dysmorphism with limb deformity*

Discussion:

Escobar syndrome is manifestated as association of multiple features like flexion contractures of neck, axilla, antecubital, popliteal, digital and intercrural joints accompanied by multiple pterygia (pterygium means shaped like a wing), ptosis, micrognathia with down- turning of mouth, camptodactyly (permanent and irreducible flexion of one or more fingers), syndactyly, equinovarus and/or rocker-bottom feet, genital abnormalities like cryptorchidism and absence of labia majora and also vertebral and/or rib anomalies and short stature. Occasional abnormalities include

scoliosis, dislocation of the hip, hypoplastic nipples and cleft palate.[3] The disease process is progressive, with about 20% developing decreased pulmonary capacity and increasing spinal deformity. The long term complications include hearing loss and infertility in males.[8]

The oral manifestations recorded in our patient were microstomia, limited mouth opening, mandibular retrognathism and high arched palate. Among these,microstomia and high arched palate have been reported in most of the case reports. Mandibular retrognathism and limited mouth opening have also been reported and treated using mandibular distraction method in a case report by Parashar in 2006.[9] Sub mucosal cleft has been reported in one case report.[6] The patient had clinical characteristics compatible with ES but some rare phenotype included hirsutism, wide nasal root and thin lips which was reported in only one case report.[10]

Most of times, the mode of inheritance of Escobar Syndrome is usually autosomal recessive and rarely autosomal dominant. Sporadic inheritance has also been suggested in few cases. The pattern of inheritance in the present case appears to be sporadic as the family history revealed no such occurrence in other family members.[6]

There is no specific treatment for this syndrome. Rather treatment involves multidisciplinary management including services of Physician, Orthopedic surgeon, Physiotherapist and Plastic surgeon for management of limb deformities.[8] An operation may be needed in Escobar syndrome for cleft palate, bands between maxilla and mandibula, adhesion of palate to tonsills, syndactyly, scoliosis, pesequinovarus, genital abnormalities, umbilical or inguinal hernia, and congenital hip dislocation.[11] Our case was consulted with Paediatric and Orthopedic surgeon and was advised for follow up in subsequent settings. The baby had no adverse event but she was discharged with NG tube in situ as feeding could not be established due to very small opening of mouth.

At present, genetic counseling and in utero detection where ever possible remains the mainstay of treatment. According to Barros *et al*[12] Escobar syndrome can be diagnosed prenatally during the 23rd week of pregnancy by using two dimensional ultrasound scan. This is of great importance in enabling the parents to understand the severe malformations, and making it possible for them to receive appropriate counseling. Additional longitudinal studies are however required to determine life expectancy, further medical problems, complications and outcome of surgical and therapeutic intervention.[12]

In addition to this, more patience and behavior modification is required for these patients as they could not keep their mouth open for long time because of their reduced muscle strength and movement. Treatment should be carried out in short appointments.[8]

Conclusion:

Genetic syndromes are a challenge for pediatricians as well as other specialists. Although the case of Escobar Syndrome was managed without any incident, extensive evaluation is essential for these types of patients with multiple abnormalities to accomplish necessary arrangements in advance. This case report emphasizes the need of appropriate and early diagnosis of the syndrome and supportive management according to deformities. Counseling about the disease process, further follow up and future pregnancy plays a vital role in the management plan.

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