Case Report

FRASER OR CRYPTOPHTHALMOS SYNDROME: A CASE REPORT

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Fraser or cryptophthalmos syndrome is a rare autosomal recessive disorder characterized by major features such as cryptophthalmos, syndactyly, and abnormal genitalia. Consanguinity is reported in 15 – 24.8% of the cases. The diagnosis of this syndrome can be made on clinical examination; therefore we present the clinical findings of a rare case of Fraser syndrome in a female infant.

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Introduction

Cryptophthalmos (hidden eye) refers to a group of rare congenital eyelid malformations in which the lid folds fail to separate in the embryo and the skin extends continuously from the forehead onto the cheeks covering the eyes.[1 – 3] Cryptophthalmos (CO) may be bilateral or unilateral and varies in severity from the complete absence of eyelids to the presence of rudimentary, malformed eyelids.[2] It is classified into three clinical types: complete, incomplete, and abortive.[2, 3]

CO may be isolated, but most often it is associated with other malformations, hence is termed cryptophthalmos, Fraser, or cryptophthalmos-syndactyly syndrome.[2 – 8] This syndrome is a rare inherited autosomal recessive disorder. [4 – 8] The prevalence of Fraser syndrome (FS) has been estimated to be approximately 0.43 per 100,000 live births and 11.06 per 100,000 stillbirths.[9] The first report of FS is attributed to Zehender and coworkers (1872).[2, 5, 8]

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We present here a rare case of FS in whom two types of CO are present.

Case Report

The female infant was the product of the third pregnancy of consanguineous healthy parents (a 24-year-old mother and a 30-year-old father). The infant was born at term by vaginal delivery following a normal pregnancy. Apgar scores after delivery were 7 and 8 at 1st and 5th minutes, respectively. Birth weight was 3,000 g and length was 48 cm, both appropriate for gestational age.

On clinical examination, eyelashes and eyebrows were absent, and she had a bilateral temporal hair growing towards the upper eyelids. There was complete cryptophthalmos on the right side with a missing eyelid and a palpebral fissure, and anomalous extension of the skin from forehead to cheek, passing in front of the very shallow orbit (without orbital rim) and completely covering the right eye (Figure 1).

The small globe (microphthalmia), palpable through the skin, was adherent to overlying skin. On the left side, the infant had abortive cryptophthalmos characterized by a coloboma of the middle one-third of the upper eyelid, with a narrow palpebral fissure and the upper eyelid adhered to the superior conjunctiva on the medial

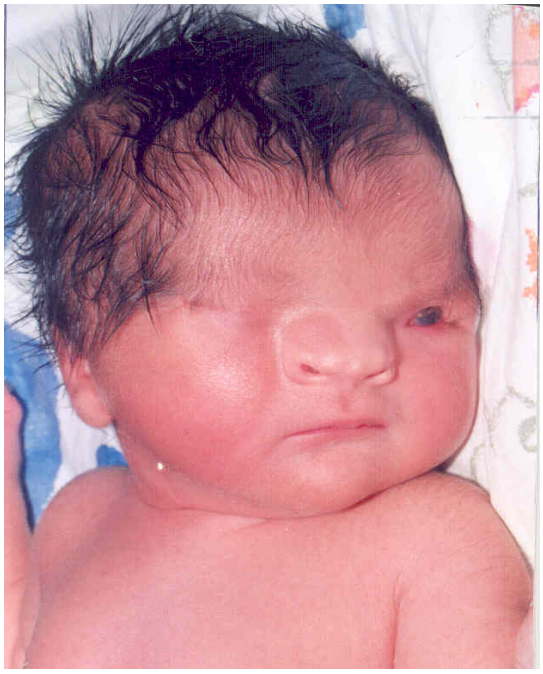

Figure 1. Complete cryptophthalmos on the right, Hypertelorism, and flat nose.

and lateral sides (superior symblepharon) (Figure 2).

The upper punctum was absent while the lower eyelid and punctum were normal. Orbital cavity and orbital rim also were normal on the left side. In addition, there was microphthalmia and microcornea with the hazy appearance of the latter being due to exposure keratitis, with a normal lens, iris, and pupil. Intraocular pressure, pupillary reflex, and fundus examination were normal.

The nose was flat with a wide nasal bridge. She had a nasal groove extending from root to apical nose. Hypertelorism was also present (Figure 1). Other findings consisting of dismorphic ears, mild brachydactyly, and partial cutaneous syndactylies were found between the 2nd, 3rd, and 4th fingers of both hands (Figure 3). External genitalia were hypoplastic with nonidentifiable labia majora, but there was a prominent clitoris.

The infant underwent surgical procedures at the same time for reparation of the upper lid coloboma and release of the symblepharon. Following surgery, the child's parents did not bring her for further follow-up.

After 2 years, we found the patient and an ophthalmic examination revealed that the upper eyelid was completely connected to the superior conjunctiva and cornea due to the postoperative complication with a severely vascularized corneal opacity and a very dry eye secondary to exposure keratitis.

In cases with these findings, as well as with induced deep amblyopia, surgical procedures are associated with a poor prognosis.

Discussion

The findings in this case are compatible with the diagnosis of FS according to the diagnostic criteria proposed by Thomas et al (1986) (Table 1).[5, 7, 8, 10] Two major and one minor criteria or one

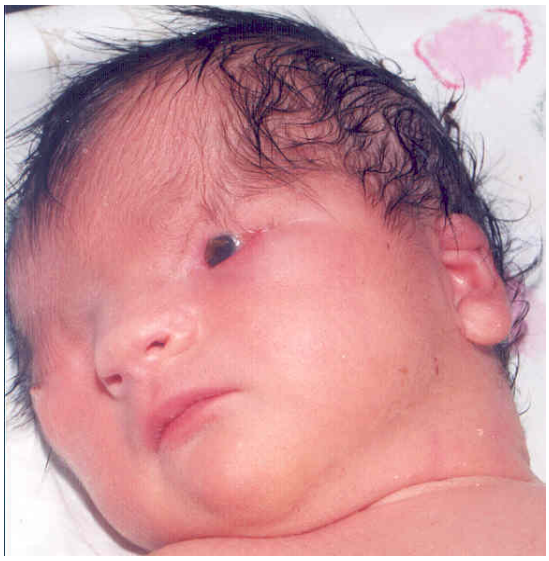

Figure 2. Abortive cryptophthalmos and malformation of the external ear on the left side.

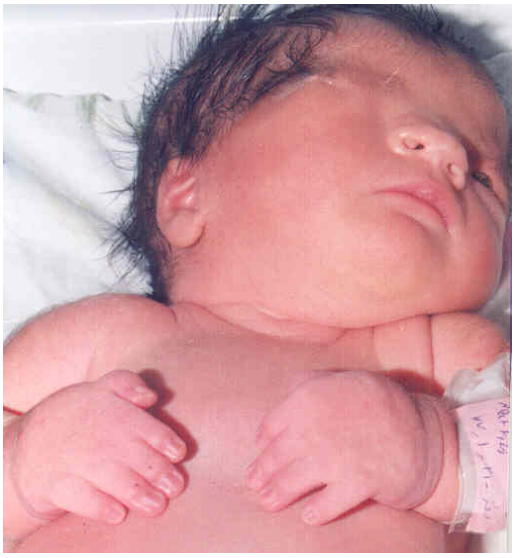

Figure 3. Mild brachydactyly and partial cutaneous syndactylies.

Table 1. Diagnostic criteria of cryptophthalmos syndrome.

Major
• Cryptophthalmos
• Syndactyly
• Abnormal genitalia
• Sibling with cryptophthalmos syndrome
Minor
• Congenital malformation of the nose
• Congenital malformation of the ears
• Congenital malformation of the larynx
• Cleft lip and / or palate
• Skeletal defects
• Umbilical hernia
• Renal agenesis
• Mental retardation

major and at least four minor criteria are needed for diagnosis.[5, 7 – 9]

In our case, there were CO, syndactyly, and abnormal genitalia as major criteria and malformations of the nose and the ears as minor criteria. CO is the leading feature of FS and has been described in 84% to 93% of the patients, but it isn't a constant finding in the syndrome.[5, 8] Our case had bilateral CO; the right complete and the left abortive.

Syndactyly has been considered as a major feature of FS that occurs in 77% of the patients. Syndactyly is always cutaneous and, in most cases, involves fingers and toes.[5, 8]

Genital anomalies are cryptorchidism, micropenis, phimosis, and hypospadias in male, and clitoromegaly, bicornuate uterus, uterine hypoplasia, vaginal agenesis, and synechiae or hypoplasia of the labia in female infants.[5, 8] In our case, there was cutaneous syndactyly in the fingers, abnormal genitalia with nonidentifiable labia majora, and a prominent clitoris.

Consanguinity is reported in 15 – 24.8% of the cases and an autosomal recessive pattern of inheritance is apparent.[5, 8] It is notable that the parents of our case are related. There is a recurrence risk of 25% among siblings for this syndrome.[5] FS should be suspected in all cases of stillbirths with renal agenesis. Twenty-five percent of affected fetuses are stillborn.[10]

At present, prenatal diagnosis of FS by an expert is possible with detection of some of its characteristics through ultrasonographic examination of the eyes, digits, kidney, and lungs.[7, 11] Therefore, ultrasonography in consanguineous parents, families with a previously affected child, and cases of stillbirths with renal agenesis is recommended.

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