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Case Report

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Facial asymmetry in a newborn

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ABSTRACT

Facial asymmetry especially Neonatal asymmetric crying facies (NACF) is not an uncommon diagnosis. Many cases are undiagnosed or underreported. Early determination of the etiology is important for better cosmetic outcome. Newborn infant presents at birth with asymmetry of the right side of the face every time he cried. Infant's face is symmetric when he is calm and not crying. Infant is born at full term by elective cesarean section. Pregnancy was uncomplicated and the infant had normal APGARS. No forceps, vacuum or other instruments were used to facilitate the delivery. No family history of similar asymmetry of face, cardiac defects or neurological problems. Infant is both breastfeeding and bottle feeding with normal sucking and no drooling. On examination, vitals are within normal limits. Infant has asymmetry of the lower face when crying with no asymmetry of the upper face. He had no lagophthalmos and nasolabial folds were intact. Infant had no asymmetry of the face when he was not crying or quiet. A harsh systolic murmur is noted at the left lower sternal border. Infant has good peripheral pulses, good perfusion and no cyanosis. Infant is moving all extremities and has no neurological deficits. Rest of the physical examination is within normal limits. NACF is not uncommon and the actual incidence may be higher, as milder cases are either undiagnosed or underreported. A thorough birth history and careful physical exam are important as well as looking for associated anomalies like cardiac defects. Early determination of etiology is important as cosmetic outcome is better in the nerve compression group than the muscle hypoplasia group.

Keywords: Newborn, Facial asymmetry

INTRODUCTION

Neonatal asymmetric crying facies (NACF)is a congenital anomaly where the face appears symmetric at rest and asymmetric during crying as the mouth is pulled downward on one side, while not moving on the other side.

It is a minor anomaly described 75 years ago and the incidence is reported to be 0.6%.

We present the case of a male infant who was noted to have asymmetric crying facies.

CASE REPORT

Newborn infant presents at birth with asymmetry of the right side of the face every time he cried. Infant's face is symmetric when he is calm and not crying. Infant is born at full term by elective cesarean section. Pregnancy was uncomplicated and the infant had normal APGARS. No forceps, Vacuum or other instruments were used to facilitate the delivery. No family history of similar asymmetry of face, cardiac defects or neurological problems. Infant is both breastfeeding and bottle feeding with normal sucking and no drooling. On examination, Vitals are within normal limits. Infant has asymmetry of

the lower face when crying with no asymmetry of the upper face. He had no lagophthalmos and nasolabial folds were intact as shown in the figures 1, and 2. Infant had no asymmetry of the face when he was not crying or quiet. (Figure 3)



Figure 1: Asymmetry of the face when infant is crying.



Figure 2: Asymmetry of the face when infant is crying.



Figure 3: No asymmetry of face when infant is not crying.

A harsh systolic murmur is noted at the left lower sternal border. Infant has good peripheral pulses, good perfusion and no cyanosis. Infant is moving all extremities and has no neurological deficits. Rest of the physical examination is within normal limits.

Differential diagnosis

Neonatal asymmetric crying facies (NACF). Hypoplasia of facial muscles. Congenital facial nerve dysplasia or traumatic facial nerve palsy 2. Maxillary mandibular asynclitism.

DISCUSSION

NACF has a reported incidence of 0.6%. The etiologies can be classified as either facial nerve compression or dysplasia and congenital hypoplasia of the facial muscles. Renault et al in 2001, using electro diagnostic testing reported etiology to be facial nerve compression in 20 % of cases and developmental hypoplasia of facial muscles in 80% of cases.² Depressor anguli oris muscle (DAOM) and depressor labii inferioris msucle (DLIM) pull the angle of the mouth downwards and laterally. These muscles are innervated by marginal mandibular branch of facial nerve. Most cases have only DAOM involvement but some have additional involvement of DLIM.³ These muscles are innervated by marginal mandibular branch of facial nerve. In neonates, this nerve is more superficial along the edge of the mandible and can be susceptible to trauma. The trauma can occur during birth or in utero. Birth trauma like forceps injury is more common than in utero causes secondary to fetal positioning or compression by birth canal.1

Congenital hypoplasia can result in a clinical picture that is indistinguishable from traumatic palsy of the marginal branch of the facial nerve. In congenital hypoplasia wrinkling of the forehead, closure of the eyelids and depth of the nasolabial folds are preserved. There is normal sucking and no drooling. Congenital hypoplasia is mostly right sides whereas nerve palsy is common on the left side.

It is important to consider maxillary mandibular asynclitism in the differential diagnosis as well. This is secondary to pressure of one shoulder against the mandible which causes jaw displacement and resultant flattening The upper and lower alveolar ridges are no longer parallel. Some cases have additional hypoplasia of the mandible on the involved side. Some cases of facial nerve compression can have mandibular compression with or without asynclitism.⁴

Many cases of NACF caused by muscle hypoplasia are isolated, and about 10% are associated with systemic abnormalities. ⁵ Congenital cardiac disease neuroblastoma, mediastinal teratoma and neurofibromatosis type I are some of the associations reported. ^{1,7} Cardiac defects are the most common associated systemic abnormalities and include ventricular septal defect, atrial septal defect and

tetralogy of fallot. Some cases are inherited in an autosomal dominant fashion. A study also reported a 14% incidence in patients with 22q11.2 deletion which is significantly higher than in the general population.⁶

A careful history should be obtained regarding birth trauma or perinatal factors associated with facial nerve compression like primiparity, uterine tumors, large baby, multiple births or difficult labor or delivery. No further work up is needed if evidence suggest traumatic causes. In other cases, a careful examination should be done to look for associated cardiac or neurological abnormalities. Genetic testing may be indicated in these cases.

Spontaneous resolution occurs in most cases of NACF within one to two years. In a very small number of children who have severe residual facial asymmetry can be referred for surgical management. Surgical management typically involves myectomy or selective neurectomy of the marginal branch of facial nerve on the unaffected side to make lip symmetric. Alternately botulinum toxin can be injected into the normal depressors to achieve temporary symmetry. 9

CONCLUSION

Based on the lack of history of trauma and clinical findings with no involvement of the upper face and no asymmetry at rest we made the diagnosis of NACF possibly secondary to muscle hypoplasia. Echocardiogram showed small sized mid muscular ventricular septal defect. Based on the literature we decided to observe the infant for 1 to 2 years and if it does not resolve by that time surgery would be considered depending on the severity of the residual defect.

NACF is not uncommon and the actual incidence may be higher, as milder cases are either undiagnosed or underreported. A thorough birth history and careful physical exam are important. Look for other possible associations like cardiac defects. Early determination of etiology is important as cosmetic outcome is better in nerve compression group than the muscle hypoplasia group.

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