DEVIATED NASAL SEPTUM IN THE NEWBORN – A 1-YEAR STUDY

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ABSTRACT: A prospective study of 200 newborn babies was done at Silchar Medical College Hospital from September 2002 to August 2003. The babies aged from 0 to 4 days were taken in the study. They were examined for any signs of nasal obstruction, birth trauma, prolonged labour, mode of delivery (forceps/vaginal/caeserian section), intrauterine malposition, postmaturity, birthweight, cephalopelvic disproportion, parity of the mother and gestational period. The diagnosis was done by clinical examination, rhinometry, struts and applying cotton wool. In the study, the incidence was found to be 14.5% (29 cases). It was found that high-birth weight babies, delivered by vaginal route (55%), to a primi mother are more likely to have DNS after birth. Moreover, intrauterine malposition particularly breech (45%) and prolonged labour seemed to play a role in newborn DNS. More importantly, the present study seems to indicate that since a good percentage of such deformity originate at the gestational period, early detection at the neonatal age is vital to manage and also to prevent complications and sequelae in adult life. Therefore, a policy of routine screening in view of early correction is advocated to decrease the morbidity associated with nasal septal deviation in newborns.

Key Words: Deviated nasal septum; newborn

In day-to-day practice, the deviation of nasal septum has been a regularity in its spectra of presentation in our country as well as world over. Infact, 58% of newborn babies have some sort of septal deviation, 4% of which have associated external nasal deformity. There are two basic types of septal deformity seen, namely anterior nasal deformity and combined septal deformity. They may occur independently or both together in a neonate and are considered to acquire from different types of pressures on the foetus during pregnancy or parturition.¹⁰ In addition to race, genes and trauma, gestation and parturition, also determine the ultimate architecture of the nose.²⁻⁴ The two basic mechanisms as suggested by Gray in his works are differential rate of growth of septum as compared to other midfacial structures and trauma to nose as a result of prolonged contact with the uterine wall or during parturition.⁵⁻⁸ Such nasal injury should not be surprising considering the compressional and rotational forces thrust upon the fetal head during passage through birth canal. So, the nose being the most prominent structure by 2–3 cm is subjected to extraordinary forces during birth process. This, influence both quantitative and qualitative development of the premaxilla, maxilla and other nasal elements. Investigators have also found that temporary flattening of nose results from dislocation of septum at birth and is related to the size of the pelvis to the size of baby’s head (head pelvic outlet ratio).¹⁰ Sepal dislocations in most cases return to normal within few days, but gross deviation gives rise to physiological, anatomical, psychological, cosmetic as well as some systemic dysfunction. It results in nasal obstruction leading to slow or difficult feeding with colic due to aerophagy, infected nose, snuffle and if severe mimics choanal atresia and other subsequent sequelae. It also causes sinusitis, epistaxis, eustachian tube dysfunction, CSOM, facial asymmetry, sagittal and dental malalignments and malocclusions, as well as change in thoracic architecture and poor general health. As a good percentage of such deviation originate at the gestational period, detection of any deviation of septum at the neonatal period is very important. We can manage it easily and can prevent many complications and squeale in adult life. Therefore, screening of neonates for early diagnosis and management is important to decrease the morbidity associated with this deformity.

REVIEW OF LITERATURE

As early as 1939, Metzenbaum addressed the general subject of birth trauma to nose. Since then many others have contributed to our knowledge of this subject (Erner 1944; Heinberg 1958; Kirchner¹⁰; Metzenbaum 1936; Selinger 1941; Sercer 1940; Steiner⁶; Lederer 1952; Scotbrown 1952; Klaff 1956; Pease¹¹; Gray¹²; Olsen¹³; Thomsen and Negus 1955).
Metzenbaum (1936) stated that head, face, nose of a child delivered by caesarian section is perfect in contour than a child born naturally.

Perth (1963, 1964) examined newborn infants and found nasal obstruction in 21% cases out of which 41% was right sided and 59% left.

Jappensen and Mindfield[2] found incidence higher in neonates born to primipara as compared to multipara.

Kirchner[10] stated that lateral nasal displacement in the newborn is a consequence of trauma that is either due to forces applied to the nose during the late months of intrauterine life or during birth. He felt that the latter variety of injury usually consists of dislocation of septal cartilage from vomer.

Bhatia (1982) in his study found incidence of septal deviation in newborn to be 15.4%. Reports from other studies ranged from 1.25 to 25%. [14,15]

Klaff (1963) reported 12 cases of septal dislocation in newborns and went on to describe the causative factors and methods of treatment.

Goyal (1987) while studying 100 neonates found the incidence of septal deviation more in babies with increased birth weight. He also found septal deviation significantly high (50%) in neonates born with breech presentation as compared to occipito-anterior position.

Hinderer (1972) stated that injury during the periods of growth caused long-term deformities.

Sinha and Maheshwari (1970) noted intrauterine trauma during birth affecting male and female alike.

Fischer (1957) stated that forceful and prolonged stress during birth process may lead to dislocation of septum.

Gray (1972) suggested that abnormal intrauterine posture may result in compression over the nose.

Jappensen and Windfield[2] in their study showed that septal dislocation in new born (3.19%) were common in primipara and when the second stage of labour lasted for more than 15 min.

Cottle (1951) made a distinction between temporary flattening of nose from delayed and permanent damage occurring in utero.

Steiner[6] stated that nasal trauma may occur at any time after fourth month of gestation and discussed the continuous pressure on nose from intrauterine growth of fetal limbs among other causative factors.

METHODS AND MATERIALS
This was a prospective study done in the departments of Otolaryngology, Obstetrics and Paediatrics at Silchar Medical College Hospital from September 2002 to August 2003.

Two hundred new born babies who were delivered in Obstetrics (Neonatal ward) or admitted in ENT or paediatrics department for management were examined for DNS. The age of the babies ranged from 0 to 4 days.

The cases were examined for any signs of nasal obstruction, external deformity, nasal discharge, mouth breathing, difficulty in suckling, sneezing, history of birth trauma, prolonged/difficult labour, forceps/vaginal delivery, caesarian section delivery, intrauterine malposition, postmaturity, birth weight, cephalo pelvic disproportion, parity of the mother and gestational period. Clinical examination was done by inspection of nose, palpation and by using small auroscope. Rhinometry was done using a chromium coated metal plate (10’12 cm²) which was divided into squares of 1x 1 mm², for assessing the airway patency of each nasal cavity separately by measuring the area of vapour condensed over the plate during expiration. The difference between the two areas was noted and compared with normal findings from which we found out the side of partial or complete nasal obstruction. Struts made from polyphonic standard grade were also used [Figure 1]. The normal sheeting size 1/16th in. and 6 mm wide with squarish ends was passed readily through the normal nose into the nasal space. In some, a long hard obstruction was felt about 1.25 to 2 cm from the external nares preventing the passage of strut. In some we detected sensation of