

Nasal septal deviation at birth and its diagnosis

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Nasal septal deviation occurs at all ages. It occurs mostly during childhood due to trauma. It is also seen at birth and during early childhood. Hence awareness of this disorder among the pediatricians, the otolaryngologists, and the obstetricians is important, as it can be detected at the earliest possible and thus can be prevented.

Key words : Nasal septal deviation; newborn.

Nasal septal deviation has been reported at all ages and in all the races. The prevalence of septal deviation varies from one race to another. Problem of nasal obstruction caused by septal deviation in children continues to pose a challenge to the pediatrician and the otolaryngologists. Its presence and recognition at birth by obstetricians, pediatricians and general practitioners would help in assessing the nasal status and thus will obviate further rhinological and non-rhinological complications later in life.

Material and Methods

Two hundred healthy new-borns were randomly examined in their first week of life, at the department of Pediatrics, of the All India Institute of Medical Sciences. History of excessive crying or difficulty in breathing and feeding were noted. A general physical and systemic examinations were done to rule out any congenital anomaly.

Rhinological examination. The neonates were examined for any lateralisation of bony and/or cartilagenous dorsum of the nose, leaning defect of the columella, asymmetry of the nares and associated cheek and/or palate deformities.

Compression test. Pressure with the thumb on the tip of the nose revealed whether the tip was stable or unstable. It collapses on either side in the latter case due to probable anterior cartilagenous dislocation.

Cotton wool test. A thin wisp was placed in front of each nostril, and its movements, compared, (Fig 1a). If movements were equal on both the sides it was considered as having equal patency. Diminished movement indicated partial obstruction, and absence of any movement was considered as being completely obstructed on that side.

Visualization of the nostrils with an otoscope. An otoscope fitted with the smallest ear speculum was gently introduced alternately in each nostril, (Fig 1b). Septal



Fig. 1a



Fig. 2a



Fig. 1b

deviation anteriorly and septal spur along the floor could be seen.

The strut test. Lubricated polythene struts of 2 mm thickness, 6 mm long with rounded edges were passed simultaneously in both the nostrils (Fig 2a). Usually the struts can be passed without hindrance upto the posterior choanae for a length of about 4-5 cm in normal neonates.

Definition. Cartilaginous septal deformity was defined as bending or kindking of the septal cartilage on itself or off the maxillary crest.

In combined deformity, both the septal cartilage as well as the bony part are deformed.

Deviation was graded as mild to moderate when the strut could overcome the septal obstruction with gentle pressure. When the obstacle could not be overcome with gentle pressure it was graded as severe.

Results

History of breathing and feeding difficulty was noted in 10 and 8 cases respectively. The tip of the nose was unstable in two newborns (1%). Otoscopic examination revealed dislocation of the anterior cartilagenous septum. Cotton wool test indicated reduced movements on the dislocated site. Columella was slightly bent on the deviated side (Fig 2b.) The Strut also could be passed with difficulty,



Fig. 2b

on the affected side. In 50 cases there was definite reduction in airflow on either side as evidenced by the cotton wisp test. The strut test further confirmed combined septal deviation type. The deviation was of mild and severe type in 40 and 10 cases, respectively. Septal irregularity or unevenness was felt in an additional 70 cases but could be overcome at the vomerochondral junction without pressure. Otoloscopic visualization was more informative in the anterior type of septal deflection than in the posterior part of the tiny noses.

Discussion

Awareness of nasal airway obstruction in a new-born by the obstetricians and neonatologists is important. Observations made by Gray,¹ Jazbi,² and Sooknundun³ have shown that deviated nasal septal deformity detected at birth persists in life. Early detection of nasal septal obstruction has been rewarding as immediate septal correction has proved

beneficial. All undesirable¹⁻³ side effects of mouth-breathing, such as high arched palate, overcrowding of teeth, pharyngitis sicca and many other could be obviated, if it is diagnosed early and necessary measures taken. Furthermore, septal correction at a later age requires an open surgery which might not be free from hazards and risks of surgery and the general anaesthesia.

Simple bedside tests described here are thus advocated in every neonate. We have found the cotton wool test more informative when the child is in deep sleep with the lips tight. The wisp should be flattened for about 2 mm in front and about 5 mm away from each vestibule taking care not to touch the nose in order to avoid arousal of the child. Strut insertion is a more reliable method as one can physically feel the irregularity and deformity, watch the twisting of the strut from the vertical direction and compare the length of insertion on either side. It is fairly an accurate method which is carried out under no anaesthesia.

All neonates should be routinely examined at birth to detect any nasal septal deformity and irregularity which may be found in 25 per cent —35 per cent of the subjects. Nasal septal obstruction causes inability to suck properly with often the milk spilling from the sides of the mouth. These nasal septal deformities unless detected and treated at birth will continue in life. Treatment at a later age will be a delayed one as its complications of mouthbreathing would have occurred and an attempt at surgery on a growing nose may not be free from risks of growth retardation of the nose and face as a whole.

References

1. Gray LP : The deviated nasal septum-I-Aetiology. *J Laryngol Otol* 79 (1965) 567.
2. Jazbi B : Subluxation of the nasal septum in the newborn : Aetiology, diagnosis and treatment. *OCNA* 1977 p 125.
3. Sooknundun M : Effects of septal correction at birth and during childhood. Thesis submitted to the faculty of the All India Institute of Medical Sciences, New Delhi, 1984.
4. Bhatia R : Deviated nasal septum in the new-born, its frequency, etiology and treatment. Thesis submitted to the All India Institute of Medical Sciences, India, 1982.

MENINGOCOCCAL VACCINE

A polysaccharide vaccine against disease caused by *N. meningitidis* serogroups A and C (French) is available in India. The serogroup A polysaccharide vaccine induces antibody in some children as young as 3 months of age, although a response comparable to that seen in adults is not achieved until 4 or 5 years of age; the serogroup C component does not induce a good antibody response before age 18-24 months. The serogroup A vaccine has been shown to have a clinical efficacy of 85 to 95 per cent and to be of use in controlling epidemics. A similar level of clinical efficacy has been demonstrated for the serogroup C vaccine. Antibodies against the group A and C polysaccharides decline markedly over the first 3 years following a single dose of vaccine. This antibody decline is more rapid in infants and young children than in adults.

The cases in India at present are due to serogroup A. The population at risk should be delineated and vaccine administered to them. Children above age 5 years, older children, adolescents, and young adults constitute a higher proportion of cases during epidemics and may warrant vaccination during an outbreak.

For both adults and children, vaccine is administered subcutaneously as a single 0.5 ml dose. The vaccine can be given at the same time as other immunizations. Good antibody levels are achieved within 10-14 days. On theoretical grounds, it is prudent not to immunize pregnant women unless there is a substantial risk of infection.

Antimicrobial chemoprophylaxis of intimate contacts remains the chief preventive measure in cases of *N. meningitidis* disease. Intimate contacts include (1) household members, (2) day-care centre contacts, and (3) anyone directly exposed to the patient's oral secretions such as mouth-to-mouth resuscitation or kissing. Unless the causative organism is known to be sensitive to sulfadiazine the drug of choice is rifampin given twice daily for 2 days (600 mg every 12 hours to adults; 10 mg/kg every 12 hours for children 1 month of age or older; 5 mg/kg every 12 hours for children under 1 month of age). Because systemic antimicrobial therapy of meningococcal disease does not reliably eradicate nasopharyngeal carriage of *N. meningitidis* it is also important to give chemoprophylaxis to the index patient before discharge from the hospital.

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