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RESEARCH ARTICLE

Deviated Nasal Septum in Newborn and its Associated Factors

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ABSTRACT

INTRODUCTION: Deviated nasal septum (DNS) is a very common condition, causes considerable amount of morbidity among ENT patients. During the process of parturition the most common etiological factors for development of deviated nasal septum is nasal injury in the intra-uterine life. Nasal obstruction in newborns can leads to cyanotic spells, high pulmonary resistance and can even respiratory failure. Subluxation of the nose causing acute respiratory distress and cyanosis in newborns have been reported. The incidence of newborn DNS is observed to be 2.9 to 31% in various studies. Many of these deformities do persist in adult life and can give rise to psychological and cosmetic complications.

MATERIAL AND METHODS: Two days newborns were chosen by simple random sampling, using a random number table. Two days old newborns were selected because tissue oedema in the first day of life may give a high false positive result. It was done using acrylic strips measuring 2 mm thick, 4 mm wide, and 10 cm long with a mark at 4 cm from one end.

RESULTS: Of the 100 cases included there were 45 (45%) female and 55 (55%) male. 21(21%) cases were observed to be having DNS of which 10 (47.6%) were male and 11 (52.4%) were female. Of the 100 cases 53% were multipara and in new born of multipara 7 (33.3%) were having DNS while in 47% primipara 14 (66.4%) were having DNS. This was statistically significant with a *P* value < 0.05. The incidence of DNS was shown to increase proportionally with the increase in the amount of birth trauma, highest incidence was shown in instrumental deliveries and this difference was statistically significant with a *P* value of <0.001. DNS in babies born by normal vaginal delivery was 16 (76.2%), in LSCS it was 4 (19%) while in Instrumental delivery it was 01(4.8%).

CONCLUSION: DNS was 21% of all newborns. Birth trauma, primiparas, instrumental deliveries or emergency LSCS predisposes more to neonatal septal deviation. Strut test being a simple, non-invasive, and fairly accurate is quite useful for diagnosis of Neonatal septal deviations and can be performed at the peripheral level to diagnose DNS.

INTRODUCTION:

Deviated nasal septum (DNS) is a very common condition,causes considerable amount of morbidity among ENT patients. During the process of parturitionthe most common etiological factors for development of deviated nasal septum is nasal injury in the intra-uterine life. Nasal obstruction in newborns can leads to cyanotic spells, high pulmonary resistance and can even respiratory failure. Subluxation of the nose causing acute respiratory distress and cyanosis in newborns have been reported[i].Two types of DNS are observed in newborns. (a) Anterior dislocation- where the septal cartilage is dislocated from the maxillary groove and it shows an external deformity of the nose. (b) And combined septal deformity, which occurs due to transmitted forces on the foetal skull during moulding and may not show an external deformity[ii].The incidence of newborn DNS is observed to be 2.9 to 31% in various studies[iii]. Many of these deformities do persist in adult life and can give rise to psychological and cosmetic complications.

MATERIAL AND METHODS

The present study was conducted in the Dept. of ENT in collaboration with Dept. of OBGY. New-borns aged born or admitted in the Govt. Medical College and ladyharding hospital Akola were included in the study. Two days newborns were chosen by simple random sampling, using a random number table. Two days old newborns were selected because tissue oedema in the first day of life may give a high false positive result. Newborns having cleft palate, cleft nose, cleft lip, or any other anomaly of head and neck region and with major illnesses were excluded from the study.

In this cross sectional study 100 neonates were included. Written informed consent was obtained from the parents of the new-born. ENT examination was done, along with the strut test. History of nasal discharge, noisy breathing, poor feeding and any birth trauma. Nose examination was done.

Strut test: It was done using acrylic strips measuring 2 mm thick, 4 mm wide, and 10 cm long with a mark at 4 cm from one end. These struts were passed into

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the nasal cavity, hugging the septum. If the strut passed till the 4 cm mark, then there is no deviation on that side of the nasal cavity, whereas if the strut gets stuck before the 4 cm mark then there is a septal deviation on the same side

All reports were entered in Excel sheet (Windows office).A statistical analysis was performed by using standard methods to calculate rates and proportions; Z test was used for analyzing the differences between the variables. A twotail P value was used for calculating statistical significance. A P <0.05was considered as statistically significant.

RESULTS

Of the 100 cases inclused there were 45 (45%) female and 55 (55%) male. 21(21%) cases were observed to be having DNS of which 10 (47.6%) were male and 11(52.4%) were female. Of the 100 cases 53% were multipara and in new born of multipara 7 (33.3%) were having DNS while in 47% primipara 14 (66.4%) were having DNS.This was statistically significant with a *P* value < 0.05.

Table 1: DNS in newborns

	Male	Female	Total
Total	55	45	100
DNS	10(47.5%)	17 (52.4%)	21(21%)

Table 2: DNS in neonates of primi and multipara

	Primipara	Multipara	Total
Total	47	53	100
DNS	14 (66.4%)	7 (33.3%)	21(21%)

The incidence of DNS was shown to increase proportionally with the increase in the amount of birth trauma, highest incidence was shown in instrumental deliveries and this difference was statistically significant with a *P* value of <0.001

Table 3:

	Normal vaginal delivery	**LSCS**	**Instrumental delivery**
Total	67	23	10
No. of DNS	16 (76.2%)	4 (19%)	01(4.8%)

It was observed that the DNS in babies born by **normal vaginal delivery was** 16 (76.2%), in LSCS it was 4 (19%) while in **Instrumental delivery it was** 01(4.8%).

DISCUSSION

DNS can 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 sequeale. DNS in later stages also causes sinusitis, epistaxis, CSOM, facial asymmetry, sagittal and dental mal-alignments 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. In neonatel period DNS can be managed 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.In 1939, Metzenbaum addressed the general subject of birth trauma to nose. Since then many others have contributed to our knowledge of this subject[iv],[v],[vi].

In our study 21(21%) cases were observed to be having DNS of which 10 (47.6%) were male and 11 (52.4%) were female. Nasal struts, by Lindsay Gray, is nowadays considered a standard tool in diagnosis of DNS in newborns. Struts are simple instruments, easy to use, needs minimal skill, and it is noninvasive and is fairly[1].higher the birth trauma, higher is the incidence of NSD[3]. In our study it was observed that DNS in babies born by normal vaginal delivery was 16 (76.2%), in LSCS it was 4 (19%) while in Instrumental delivery it was 01(4.8%).In the study by Lindsay Gray[2], a follow-up of the neonates with DNS for up to 2 years and more showed that 95% of the deviations persisted and 80% of the straight septum, at birth, were still straight[8]. Also it has been shown that reduction of the septal dislocation by Grays modified Walshams forceps, is a simple procedure which is well tolerated by the newborns when done early and gives a permanent result. Also approved byJeppensen et al[vii], [9].

CONCLUSION

DNS was 21% of all newborns. Birth trauma, primiparas, instrumental deliveries or emergency LSCSpredisposes more to neonatal septal deviation. Strut test being a simple, non-invasive, and fairly accurate is quite useful for diagnosis of Neonatal septal deviations and can be performed at the peripheral level to diagnose DNS.

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