

Internipple Distance in the Newborns

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Abnormalities of the shape of the chest are not uncommon findings in many syndromes and birth defects. These abnormalities may be expressed in the longitudinal diameter like short sternum or the horizontal diameter as widely spaced nipples(1). Widely spaced nipples are noted in Turner's, Noonans, 4 p+, 18 p-, 18 q-, fetal hydantoin, Trisomy 18 and Fraser syndromes, whereas narrowly spaced nipples are seen in asphyxiating thoracic dystrophy(2). The clinical impression of widely spaced or narrowly spaced nipples may be misleading, therefore these should be validated by quantitative criteria. There is a good study from Israel giving standards for internipple distance and other chest measurements of the newborns at different gestational ages(1). No similar study is reported in the Indian literature. In the present study an attempt is made to

find out the range for internipple distance at different gestational ages in the newborns.

Material and Methods

To define standards for internipple distance in the newborns, 817 consecutive liveborn babies, with a gestational age ranging from 26-42 weeks were measured. Babies with malformations were excluded from the study. The gestational age was calculated from the first day of the last menstrual period and in every case, clinical assessments of gestational age were performed by the Dubowitz scoring system(3). Internipple distance (the distance between centre of the two nipples) was measured when the child was at rest and at the end of expiration by using a sliding caliper graduated in millimeter(4). The data was divided into a series of gestational age group categories. No statistical difference was found between boys and girls; so the combined mean and \pm SD values for different gestational ages were calculated.

Results

The values for internipple distance at different gestational age are shown in Table I. At 28 and 41 weeks the mean internipple distance was 5.17 cm, respectively.

Discussion

In the present study the mean values for internipple distance at 28 and 41 weeks were 5.17 and 7.51 cm, respectively. The corresponding values noted for Israeli newborns were 5.01 and 8.0 cm, respectively(1). These values were

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TABLE I—Internipple Distance at Various Gestational Ages

Gestation (wk)	No.	Mean (mm)	SD (mm)	Normal range
26	5	43.1	0.8	41.4 - 44.8
28	14	51.7	7.0	37.7 - 69.6
30	8	52.6	7.2	38.2 - 66.9
31	5	56.7	3.5	49.7 - 63.6
32	12	56.5	4.0	48.5 - 64.6
33	7	56.0	6.5	43.1 - 68.9
34	12	59.0	9.0	40.8 - 77.0
35	14	62.9	5.8	51.1 - 74.5
36	30	66.2	9.1	48.0 - 84.3
37	36	64.4	6.9	50.6 - 78.2
38	83	67.6	7.4	52.7 - 82.4
39	162	72.2	7.9	56.4 - 88.1
40	311	74.1	8.5	57.5 - 93.1
41	99	75.1	9.2	56.6 - 93.6
42	19	77.5	12.3	50.9 - 100.0

comparable, unlike the ethnic differences noted in ocular measurements like interpupillary distance, intercanthal distance and outer canthal distance(5). However, in our study the range of values at some gestational age groups was high (Table I). This may be due to variations in the shape and size of the chest. To overcome this, "Internipple Index" defined by the formula: internipple distance (cm) \times 100/circumference of chest (cm) has been used as a criteria of widely spaced nipples(1). The diagnosis of widely spaced nipples is justified if the internipple index is more than 28%, independent of the gestational age(1).

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