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Normal Values for Penile Standards in Newborns

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Estimation of penile size is important in evaluation of ambiguous genitalia or small genitalia in the genetic males, identification of some syndromes and assessing the effectiveness of testosterone therapy in some conditions. Feldman and Smith have set forth standards for penile size for premature and full term babies of Caucasian origin(1). However, no standards are available for Indian babies. There may be ethnic differences in various morphological and body measurements. In the present study we have tried to set forth norms for penile size for premature and full term infants.

Material Methods

To define standards for penile size in the newborn, 454 full term and preterms (with a range from 26 to 42 weeks) were subjected for measurement of penile size(1). Babies with malformations were excluded from the study. Gestational age was calculated from the first day of the last menstrual period and in every case, clinical assessment of gestational age was preformed by the Dubowitz scoring system(2). All measurements were made between 36 to 48 hours by one of the authors. The data were divided into a series of gestational age group categories. Normal values are presented as mean and ±2SD for different gestational ages.

Penile length was measured from the public ramus to the tip of the glans penis by placing the end of a straight edge ruler against the public ramus applying traction along the length of the phallus to the point of increased resistance, an easily appreciated end point(1). The location of the tip of

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Received for publication December 9, 1990; Accepted June 13, 1991

the glans penis was determined by palpation. Stretched penile length is the most consistent measurement and correlates closely with the erect penile length(1).

Results

Table I shows mean and ±2SD values for penile size for boys of different gestational age varying from 26 to 42 weeks. Penile length increased with gestational age. The mean penile length was 16.14 mm at 28 weeks and was 23.45 mm at 41 weeks.

Discussion

A small penis may provide a clue to fetal testosterone insufficiency either secondary to hypothalamic pituitary insufficiency or to primary testicular insufficiency. Early recognition and treatment of micropenis in the newborn with a short course of testosterone helps to increase the size of the phallus to normal size for the age. Micropenis is a feature of many syndromes(3). A few of the examples include anencephaly sequence, Carpenter syndrome, CHARGE association, Meckel Gruber syndrome, Noonan syndrome, Prader-Willi syndrome, Robinow syndrome, Triploidy syndrome, XXXXY syndrome and XXY syndrome.

There is only one earlier study by Feldman and Smith(1) who obtained penile measurement from 76 apparently normal male caucasian newborn infants (39 premature babies and 37 full term babies). The penile stretched length of the full term infant was 3.5±0.7 cm in their study. Our values were approximately 1 cm less for penile length in term babies (37-41 weeks). This may probably reflect the difference noted in general body size of caucasian and Indian babies or may be due to some unknown ethnic differences. The majority of the prenatal growth of the penis occurred after 14 weeks of gestation at an

TABLE I–*Penile Length at Different Gestational Ages*

Gestation (years)	No. of cases (Boys)	Mean (mm)	SD (mm)	Normal range
26	2	13.43	1.48	10.48-16.37
28	9	16.14	3.97	8.20-24.08
30	3	16.78	3.87	9.04-24.52
31	3	15.40	1.10	13.20-17.60
32	9	15.02	2.51	10.01-20.02
33	5	20.58	4.09	12.39-28.77
34	7	17.60	3.45	10.70-24.51
35	10	19.61	4.59	10.43-28.80
36	15	20.21	4.74	10.73-29.69
37	23	18.62	4.09	10.57-26.66
38	42	20.77	6.01	8.75-32.79
39	84	20.99	5.18	10.63-31.55
40	177	23.12	6.07	10.98-35.25
41	54	23.45	6.37	10.72-36.19
42	11	21.29	4.85	11.60-30.99

almost linear rate in the study by Feldman and Smith(1).

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NOTES AND NEWS

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