

Normative data for stretched penile length in term neonates born in Tamil Nadu

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ABSTRACT

Aim: To establish normative data for stretched penile length (SPL) in term male neonates born in Tamil Nadu. **Materials and Methods:** All live term male neonates delivered in a hospital during a given period were included. SPL was measured from the pubic ramus to the tip of the glans. Two consecutive measurements were taken and average was recorded. **Results:** The mean SPL observed in our study was 2.83 ± 0.49 cm. **Conclusion:** This study helps establish normative values for SPL in neonates of Tamil Nadu origin.

Key words: Stretched penile length, south India, Tamil Nadu

INTRODUCTION

Evaluation of external genitalia is a very important component of routine neonatal examination especially in ambiguous and small genitalia. This may be the first clue for any underlying endocrine disorder like growth hormone deficiency or hypopituitarism or other disorders of sexual differentiation.^[1] The length of the penis (phallus) may show variations with race and ethnicity.^[1-4] This makes it necessary to establish standard values for penile sizes in normal, healthy, full-term neonates in each country and in its different regions. This study is an attempt to define normative data for stretched penile length (SPL) in term neonates of Tamil Nadu origin.

MATERIALS AND METHODS

This study was done as a part of Indian Council of Medical Research (ICMR) approved multicentric study on

newborn screening for congenital hypothyroidism (CH) and congenital adrenal hyperplasia (CAH) in Chennai. All live male neonates delivered at Institute of Obstetrics and Gynecology (IOG), Egmore, Chennai during the period 07-08-2011 to 10-10-2011 were enrolled. Written informed consent was obtained from the parents of the included neonates. Nativity of families was registered in hospital records.

Examinations were performed in a warm and comfortable room temperature by a pediatrician and a trained nurse. All neonates were examined in a supine position with both legs in a flexed position. Penile length was measured from the pubic ramus to the tip of the glans penis by placing the end of a straight edge ruler against the pubic ramus applying traction along the length of the phallus to the point of increased resistance [Figure 1].^[1,2] The location of the tip of the glans penis was by palpation. The measurements were taken between 48 h of birth and 10 days of age. Two consecutive measurements were taken and the average was recorded.

Inclusion and Exclusion criteria

All normal, term, and appropriate for gestational age neonates between 37 and 41 completed gestational weeks, birth weight 2,500 g or above were included in the study. Gestational age was calculated from the 1st day of the last menstrual period of the mother. Preterm neonates, low

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Figure 1: Measurement of stretched penile length of a newborn child

birth weight neonates, and those with gross congenital anomalies were excluded from the study. Descriptive statistics were calculated.

RESULTS

A total of 346 term neonates were included. The mean SPL was 2.83 cm and the standard deviation was 0.49 cm.

DISCUSSION

The mean SPL in our study was comparable to that observed in a study from Karnataka by Kulkarni and Rajendran^[3] in which it was 2.31 ± 0.61 cm. In another Indian study done by Vasudevan *et al.*,^[4] from Puduchery which included 135 neonates, the SPL of term neonates was 3.57 ± 0.46 cm. This is slightly higher than that observed in our study and might be due to differences in samples sizes and observational variations. Asian neonates in general have lower SPL when compared to Caucasians. (1) Akin *et al.*,^[5] have reported mean SPL as 3.16 ± 0.39 cm in Turkish neonates which is slightly higher than observed in our study.

Measurement of SPL helps to identify micropenis in the

neonatal period (usually defined as lesser than 2 standard deviations (SDs) for that ethnicity) that may signify serious underlying endocrinopathy.^[6,7] The phallic growth *in utero* and early infancy is dependent on androgens and growth hormone. Hence, clinically identifying micropenis may help diagnose decreased androgen exposure or growth hormone deficiency. The latter may be isolated or part of multiple pituitary hormone deficiencies.^[8] In view of reported data reflecting differences in measurements of SPL across the world, we suggest that each ethnic group should have its own standard values for SPL.

CONCLUSION

This study establishes the normative data of SPL in south Indian neonates of Tamil Nadu origin.

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