

kidneys, adrenals and ovaries, has been described(3).

A number of theories have been put forward to explain the etiology of this puzzling disease. The Trigeminal theory postulates that vascular insult to the trigeminal ganglion perhaps due to trauma to the superior cervical ganglion triggers off the wasting process leading to hemiatrophy(3). Casserier considers the disease to be a variant of scleroderma(3). Another plausible explanation is the Cerebral Trophoneurosis theory that there is a disturbance of higher centres causing unregulated activity of the cervical sympathetic system as a 'release' phenomenon. This has been supported by reports of pathological evidence of degeneration of nuclei in the diencephalic periaqueductal gray matter and lateral wall of the third ventricle(3).

The prognosis for life is good in this slowly progressive condition. The disease may smoulder for years to decades before spontaneous remission occurs. There is no definitive treatment except for plastic surgery to ameliorate the severe cosmetic disfigurement(4). This is usually undertaken after the disease has run its course, as determined by close clinical observation and monitoring of tissue breakdown enzymes(4). Mild to moderate cases need only dermal grafts. In severe deformity, transfer of de-epithelialized skin flaps may be undertaken. If the orbital, maxillary or mandibular bone are hypoplastic, bone grafting with or without osteotomy is carried out(5).

## REFERENCES

1. Brain R. Disease of the Nervous System, 8th edn. London, Oxford University Press, 1977, pp 712-713.
2. Archambault L, Fromm NK. Progressive

2. facial hemiatrophy. Arch Neurol Psychiatr 1932, 27: 529-581.
3. Wartenberg R. Progressive facial hemiatrophy. Arch Neurol Psychiatr 1945, 54: 75-96.
4. Wallace JG, Schnuder WJ, Brown KG, *et al.* Reconstruction of hemifacial atrophy with a free flap of omentum. Br J Plast Surg 1979, 32: 15-18.
5. Jackson IT. Plastic surgery of face and neck. In: Practice of Pediatrics. Ed Kelly VC. Philadelphia, Harper and Row, 1985, pp 11-12.

## Values for Foot Length in Newborns

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Abnormalities of foot length are important features of some syndromes that are recognizable at birth(1). Merlob *et al.* have set forth standards for foot length for caucasian newborn infants of different gestational ages(1). However, there are no such studies reported from India. Many babies with malformation syndromes are born prematurely and therefore, there is a need to know the range of values for foot length at different gestational ages. Another use of foot length measurement may be in the assessment of fetal growth(2). Because of the potential diagnostic implication of foot length measurement the present study was undertaken to know the range of values for the foot length in infants from 26-42 weeks of gestation.

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## Material and Methods

Eight hundred and seventeen consecutive live born with gestational ages ranging from 26 to 42 weeks were included in the study for foot length measurement. Babies with malformations were excluded. The gestational age was calculated from the first day of the last menstrual period. In every case clinical assessments of gestational age were performed by the Dubowitz scoring system(3). All measurements were made between 36 to 48 hours by one of the authors. As no statistical difference was found between boys and girls, for foot measurements, the values for both sexes were combined.

The foot length was measured from the posterior prominence of the heel to the tip of the big toe, maintained in a straight position(4), using a sliding calipers, graduated in millimeters. There was no difference in

the values obtained from left and right side, hence all measurements were done on the right side. The data was divided into a series of gestational age groups and values are presented as Mean  $\pm$  2 SD.

## Results

The values for foot length at different gestational ages are presented in the *Table I*. The mean values for foot length at 28 weeks of gestation was 56.6 mm and at 41 weeks it was 75 mm.

## Discussion

Foot length measurements are useful in evaluation of skeletal dysplasia as well as nonskeletal syndromes(1). A large foot is seen in cerebral gigantism, Cockayne syndrome and Leprechaunism. Long metatarsals, resulting in long feet are seen in

TABLE—Foot Length at Different Gestational Ages

Gestation (wk)	Numbers			Mean (mm)	SD (mm)	Range
	Boys	Girls	Total			
26	2	3	5	46.0	3.2	39.6 – 52.4
28	9	5	14	56.6	6.8	43.0 – 70.1
30	3	5	8	56.8	7.2	42.4 – 71.3
31	3	2	5	58.5	4.0	50.5 – 66.5
32	9	3	12	62.8	4.1	54.5 – 71.1
33	5	2	7	57.4	3.2	51.0 – 63.8
34	7	5	12	67.0	6.4	54.3 – 79.7
35	10	4	14	67.3	4.0	59.3 – 75.2
36	15	15	30	68.9	3.9	61.1 – 76.8
37	23	13	36	69.9	5.6	58.9 – 80.9
38	42	41	83	71.2	3.7	63.9 – 78.6
39	84	78	162	73.8	4.4	65.0 – 82.5
40	177	134	311	74.1	6.4	61.2 – 86.9
41	54	45	99	75.0	5.6	63.9 – 86.2
42	11	8	19	75.8	4.8	66.1 – 85.5

Marden-Walker syndrome and Trevor disease. Short feet are seen in Prader-Willi syndrome, 15q+ syndrome, various types of brachydactyly and other syndromes with short metatarsals like Cohen syndrome, Coffin-Siris syndrome, Roberts, syndrome, Weaver syndrome, etc.

The mean values for foot length increased from 5.25 cm at 28 weeks to 8.06 cm at 41 weeks in Israeli infants(1). The corresponding values in our study were 5.66 cm and 7.5 cm, respectively, indicating lack of ethnic difference in values of foot length as against well known ethnic differences in the facial measurements(5).

James *et al.* studied foot length measurement in the newborn as a method of estimating other anthropometric indices(2). They noted a positive linear correlation between foot length and other indices of body size in light for date and appropriate for gestational age babies of all gestational ages. They suggested that birth weight and crown heel length of premature babies can be estimated from the measurement of foot length that is performed simply and rapidly. Another advantage of foot length measurement is that the foot is usually accessible for measurement of its length even in premature babies nursed in incubators receiving intensive care (intravenous infusion lines, attachment to monitors and ventilators) in whom the measurement of body weight, body length and head circumference is virtually impossible because of lack of access to these babies for these anthropometric measurements(2).

## REFERENCES

1. Merlob P, Sivan Y, Reisner SH. Anthropometric Measurements of the Newborn Infant (27-41 Gestational Weeks). New York, Birth defects Foundation-March of Dimes, Birth Defects: Original article series XX(7), 1984, pp 43-49.

2. James DK, Dryburgh EH, Chiswick ML. Foot length: A new and potentially useful measurement in the neonate. *Arch Dis Child* 1979, 54: 226-230.
3. Dubowitz LMS, Dubowitz V, Goldberg C. Clinical assessment of gestational age in the newborn infant. *J Pediatr* 1970, 77: 1-10.
4. Feingold M. Guidelines for clinical measurements. *In: Syndrome Identification*. Ed Bergsman D. New York, The National Foundation March of Dimes, Vol III, No. 2, 1975, pp 2-8.
5. Pryor HB. Objective measurement of interpupillary distance. *Pediatrics* 1969, 44: 973-977.

## Gangrenous Stomatitis Following Measles

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Gangrenous stomatitis (Cancrum oris/ Noma) is a necrotizing infection involving skin, subcutaneous fascia and bone. This is an infrequent complication noted in young malnourished children below 5 years of age after measles. we report below two children above 5 years of age with cancrum oris after measles.

## Case Reports

*Case 1:* A 7-year-old unimmunized female child weighting only 13 kg, had

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