

# FOOT PROBLEMS IN INFANCY

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Foot problems form the major part of paediatric orthopaedic practice in Singapore. Congenital deformities, real or apparent, are the source of much anxiety among parents. In most instances, no treatment is required; reassurance of the parents is all that is necessary. They are mild, flexible and capable of spontaneous correction with growth. In other instances, however, prompt and timely treatment, surgical or otherwise, prevents later deformity and disability.

The commonest problems are in-toe gait and flat-feet. Less common are congenital club feet or congenital talipes equinovarus (CTEV).

It is pertinent to point out that at birth the commonest position of the foot is in calcaneovalgus (the heel is in calcaneus and the forefoot is dorsiflexed and everted); there is also no arch. In the normal neonate though the foot is in calcaneovalgus, there is a normal range of plantarflexion. In the calcaneovalgus foot however, plantarflexion is restricted. This deformity is common in babies with the breech presentation and is also associated with congenital dislocation of the hip (Wynne-Davis, 1973) (1), genu recurvatum or infantile scoliosis. The congenital talipes calcaneovalgus usually responds to gentle maternal stretching or serial plasters. Only severe resistant and persistent calcaneovalgus deformity require surgery like subtalar arthrodesis (Grice, 1952) (2).

Flat feet is a universal phenomenon in children under the age of one. The medial arch of the foot develops during the second and third year when the child begins to walk. If this fact is understood, a lot of needless anxiety and surgical appliances can be avoided. The majority of flat feet are symptom-free and mobile. There is a more than 90 per cent rate of spontaneous recovery. If reassurance does not allay parental fear, footwear prescription like insoles, heel cups and wedges help to reduce excessive wear on the shoes. Only painful, stiff flat feet require treatment. The physician needs to exclude tarsal coalition, cerebral palsy, trauma, infection and osteoid osteoma.

In-toeing is also a very common complaint among parents of toddlers. They often complained that the children are stumbling over their own feet. The commonest cause is metatarsus varus in which there is varus deformity

of the forefoot. Unlike congenital talipes equinovarus, the heel is neutral or even valgus and the calf muscles are not wasted. This is a benign condition which has a spontaneous correction rate of more than 85%. Only a very small proportion of the uncorrected cases require surgery (Ponseti & Becker, 1966) (3). Nevertheless, the orthopaedic surgeon must exclude other causes of in-toeing like femoral neck anteversion and tibial intorsion.

Congenital talipes equinovarus (clubfoot) is a well-known deformity. Hippocrates had written about it and its treatment. The forefoot and hindfoot are in equinus and varus. The foot is small. The calf of the same side is wasted and the tendo Achilles is tight. It has a broad spectrum of severity: from the mild postural attitude of the foot to the resistant and rigid deformity which seemingly defies all manners of surgical onslaught. Drs Boo and Ong (4) estimated an incidence of 4.5 per 1000 Malaysian livebirths. This is much higher than the incidence of 1 to 2 per 1000 livebirths in Great Britain. Though there is no recent Singaporean study on the incidence of foot deformities among neonates, my impression is that the incidence of CTEV and other foot deformities is much less than this study by Drs Boo and Ong. It is therefore timely for the neonatologist and the orthopaedic surgeon of this country to investigate this problem.

Wynne-Davis (1964) (5) pointed out a strong familial link in CTEV. She found a twenty to thirty fold increase in incidence among neonates with a strong family background of CTEV. This, however, is not found in this Malaysian study. In Europe, the incidence of CTEV is 2 to 3 times higher in boys. This study however, showed sexual equality! The differences may be significant.

A lot has been written about the aetiology and treatment of CTEV since the age of Hippocrates. The aetiology is yet unknown but Ippolito and Ponseti (1980) (6) suggested a retracting fibrosis to be the primary cause of clubfeet. The bibliography is voluminous but the overall result is less than satisfactory. Most large series report a 50% response to conservative management like serial plasters and strapping and other appliances. The rest required one or more surgical procedures in order to get a satisfactory result. Posterior and medial soft tissue release may be necessary in severe cases (Turco, 1971) (7). Relapse is common. Bony corrective procedures may be necessary in children after the age of six.

The key to success is early treatment - as soon as possible after birth. Conservative measures should be tried first. If it is apparent that non-surgical measures are ineffective, surgery by a competent orthopaedic surgeon offers the best chance of success.

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## REFERENCES

1. Wynne-Davis R. Inheritable disorders in Orthopaedic practice. Oxford: Blackwell Scientific Publications. 1973.
2. Grice DS: An extra-articular arthrodesis of the sub-astragular joint for correction of paralytic flat feet in children. J Bone Joint Surg 1952; 34(A): 927-40.
3. Ponseti IV, Becker JR: Congenital metatarsus adductus. J Bone Joint Surg 1966; 48(A): 702-11.
4. Boo NY, Ong LC: Congenital Talipes in Malaysian Neonates - Incidence, Pattern and Associated Factors. Singapore Med J 1990; 31: 539-542
5. Wynne-Davis R: Family studies and cause for congenital club foot. J Bone Joint Surg 1964; 46(B): 445-63.
6. Ippolito E, Poseti IV: Congenital club foot in the human foetus. J Bone Joint Surg 1980; 62(A): 8-22.
7. Turco VJ: Surgical correction of the resistant club foot. J Bone Joint Surg 1971; 53(A): 477-97.

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