

Congenital Talipes Equinovarus Deformity in Ibadan

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Summary

Oyemade, G. A. A. (1979). *Nigerian Journal of Paediatrics*, 6(2) 39. **Congenital Talipes Equinovarus Deformity in Ibadan.** One hundred and ninety-six children (126 males, 70 females) with congenital talipes equino-varus deformity who attended for treatment at the Orthopaedic Clinics of the University College Hospital, Ibadan, between 1973 and 1977 were studied. Ages ranged from one day to three months (mean age, 3 weeks). There were ninety mild, sixty moderate and forty-six severe cases. All were initially treated conservatively and of these, 49 per cent had full correction with conservative management. Eighty-nine children underwent operation and of these, the deformity was fully corrected in 35, partially in 29 and no appreciable correction in 25. Seventeen patients defaulted from the Clinics. It is concluded that early recognition of this condition is essential in order to achieve better results with either conservative or operative treatment.

CONGENITAL talipes equino-varus is the commonest congenital deformity of the lower limb (Sharrard, 1971). It is characterised by the foot turning downward and inward. The present study was based on children seen at the Orthopaedic Clinic, University College Hospital (UCH), Ibadan, between January, 1973 and December, 1977.

The aim of this communication is to present the clinical features and management of club foot in our environment.

Patients and Methods

One hundred and ninety-six patients with congenital talipes equino-varus were studied. Children with club feet associated with neurologi-

cal disorders namely: spina bifida, arthrogryposis multiplex congenita and poliomyelitis were excluded from the study. History of pregnancy, detailed clinical examination, skeletal radiographs and methods of treatment were undertaken.

Patients were classified as mild, moderate and severe cases. Mild cases were those in which the deformity could be easily manipulated to give normal shape to the foot; they also had minimal degree of contracture of tendo-achilles and very slight adduction of the forefoot. Moderate cases were those with marked degree of contracture of tendo-achilles and moderate adduction deformity of the forefoot. These cases required strong manipulation to get the foot into reasonable position even in the newborn period. Severe cases showed marked adduction deformity of the

forefoot and severe contracture of the tendo-achilles; the heel was less prominent and there was inversion of the hind foot.

The initial treatment in all cases was conservative, using either Robert Jones zinc oxide strapping (Fig. 1) or plaster of Paris with wedging (Kite's method) and Denis Browne splint (Fig. 2). Operative correction was only instituted if these measures failed to correct the deformity within six months of treatment.

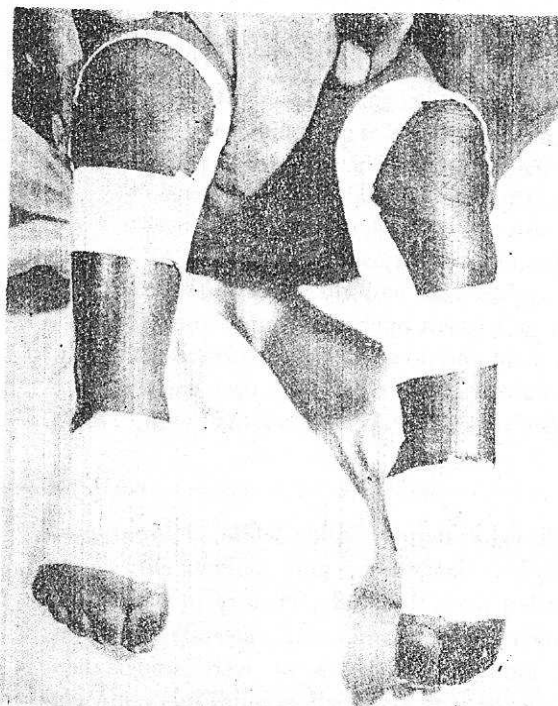


Fig. 1. Photograph of a case illustrating the Robert Jones strapping.

The type of corrective operation was determined by the severity of the deformities. In mild cases which showed only minimal contracture of tendo-achilles, subcutaneous tenotomy of the tendo-achilles was performed. In moderate cases with marked contracture of tendo-achilles, elongation of tendo-achilles, posterior capsulotomy, and incision of inferior tibio-fibular joint, were carried out. However, in severe cases with marked adduction of the fore-feet and marked contrac-

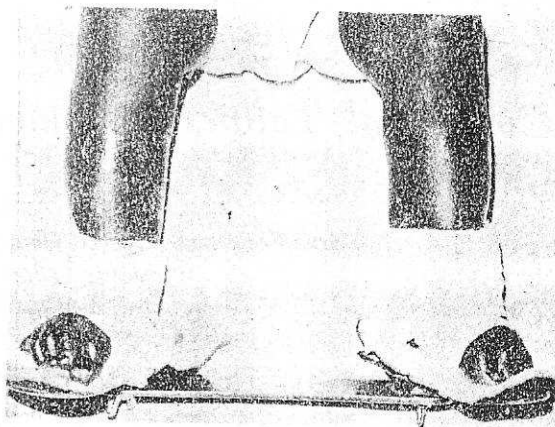


Fig. 2. Photograph illustrating the correction of bilateral deformities, using Denis Browne splint.

tures of tendo-achilles and inversion of hind feet, soft tissue release consisting of (a) incision of deltoid ligaments of the ankles and of the spring ligaments at the medial aspect of the foot, (b) elongation of the tendo-achilles, the long flexor tendons of the toes, and the anterior and posterior tibialis tendons and (c) posterior capsulotomies, were carried out.

Results

Of the 196 patients, 24 were born at the UCH, Ibadan, while 172 were born elsewhere. During the five-year period under review, there were 13931 live babies born at the UCH, Ibadan. Thus, the incidence per one thousand live births was 1.7.

Age and Sex Distribution

Table shows the age distribution of the patients at the time of presentation at the Orthopaedic clinic. The youngest was one day old and the oldest, three months. There were 126 males and 70 females giving a male predominance of 1.8 : 1.

Clinical Features

There were 134 bilateral and 62 unilateral cases giving a total of three hundred and thirty-

TABLE
Age Distribution of 196 children with Talipes Equinovarus at presentation at the clinics.

Age (weeks)	No. of Cases
Under 2	58
2-4	29
4-6	29
6-8	27
8-10	28
10-12	25
Total	196

feet involved in the present series. Among the unilateral cases, the right foot was involved in 34 and the left foot in 28. Ninety cases (45.9 per cent) were classified as mild; 60 (30.6 per cent) as moderate and 46 (23.9 per cent) as severe.

Radiological Findings

Fig. 3 shows the radiograph in one of the severe cases. The anterior part of the calcaneum lies under the talus, and the angle between the talus and calcaneum has diminished below 30 degrees in the anteroposterior view.



Fig. 3 Radiograph of a severe case of equinovarus deformity. Note that the calcaneum cannot be distinguished from the talus.

Management

All the cases were initially treated conservatively. Eighty-eight (45 per cent) of the patients

were treated with Robert Jones strapping, while 68 (35 per cent) were treated with plaster of Paris alone and twenty-nine (15 per cent) treated with plaster of Paris with wedging to further correct the condition. Eleven (5 per cent) were treated with Denis Browne splint. A review of the response to treatment was made at six weekly intervals, and all the patients were followed up in the clinic until they started walking.

Results of Conservative Method

Out of the 90 mild cases, 68 had full correction of their deformities within six months and 20 were partially corrected. Two defaulted from the clinic. Among the sixty children with moderate deformities, twenty had complete correction and twenty-five had partial correction; ten did not show any appreciable correction and five defaulted. In the forty-six severe cases, only two had full correction; eighteen were partially corrected and sixteen did not show any correction and ten defaulted from the clinics.

All the twenty-four cases born at the UCH, Ibadan, were seen at birth and were started on conservative treatment immediately. Of the 24 cases, 18 had mild deformities and these were fully corrected; three moderate cases which were also fully corrected. The remaining three patients were severe cases and two were fully corrected but one was only partially corrected.

Results of Operative Correction

Eighty-nine patients who had partial or no correction with conservative management underwent surgical procedures. Twenty mild cases with partial correction required only subcutaneous tenotomy of the tendo-achilles and plaster of Paris splint for six weeks to effect complete correction. The twenty-five with moderate deformities who had partial correction with conservative management were treated by elongation of tendo-achilles, posterior capsulotomy and incision of the inferior tibio-fibular joint. Fifteen of these were fully corrected while ten had partial correction. The remaining forty-four patients consisting

of twenty with moderate deformities and twenty four patients with severe deformities had soft tissue release in the medial side of the foot, elongation of the flexor tendons, anterior and posterior tibialis with incision of the spring and the deltoid ligaments. Elongation of the tendo-achilles, posterior capsulotomy and incision of the inferior tibiofibular joint were carried out. Plaster of Paris was applied to the lower limbs for six weeks. Nineteen had partial correction and twenty-five showed no appreciable correction.

Discussion

The incidence of 1.7 per 1,000 live births at the UCH, Ibadan, is comparable to others reported in the literature (Stewart, 1951). The predominance of male to female in the ratio of 1.8 : 1 is also similar to other reports (Wynne-Davis, 1964). Early treatment of congenital talipes equino-varus has been advocated because neonatal bones and muscles have the potential for normal development. If the bones are held in an abnormal position for some weeks after birth however, this potential is partly or completely lost (Cartner, 1974; Taylor *et al.*, 1976). All the patients in the present study initially underwent various conservative methods of treatment. Seventy-five per cent of the patients with mild deformity, 33.3 per cent of moderate cases and four per cent of severe cases benefited from this form of management.

Since the University College Hospital, Ibadan, is a referral centre, a majority of the subjects in this series came from other medical centres; only twenty-four out of the 196 babies were born at the UCH, and all these had their deformities fully corrected following early conservative or operative treatment. In contrast, there was often some delay before children delivered elsewhere were referred to the clinic. Although these children from outside were also initially treated conservatively, there was no appreciable correc-

tion in most of them. Prolongation of conservative treatment sometimes predispose to other deformities such as rocker bottom foot or bean foot (Swann, Lloyd-Roberts and Caterall, 1969). This is because the patients' soft bones are liable to compression under resistant foot ligaments. In the cases classified as having moderate or severe deformities, the talo-calcaneal angle was always below thirty degrees (Beatson and Pearson, 1966). They also have talo-navicular subluxation as suggested by Brockman (1930) due to the contracture of ligaments in the medial aspect of the foot. The contractures of the tendo-achilles, tibialis anterior and posterior and flexor tendons of the toes lead to inversion of the hind foot. In the management of such cases, Attenborough (1964) has advocated posterior release while Main *et al.* (1977) suggested medial release of the foot. Among the sixty-nine babies in the present series subjected to the above-named operative procedure, fifteen showed complete correction and twenty-nine had partial correction while twenty-five did not show any appreciable correction.

From the present study, it is suggested that there is need for early recognition of congenital talipes equino-varus after birth so that treatment can be commenced very early. As already noted, all the twenty-four babies with congenital talipes equino-varus deformities who were born at UCH, Ibadan, and treated from birth, had full correction with treatment. In contrast, a significant proportion of the cases referred from elsewhere in whom treatment was delayed, did not show satisfactory correction.

Acknowledgements

The author is very grateful to the Physiotherapists, University College Hospital, Ibadan, for their cooperation in the management of the cases; the Medical Illustration Unit, University of Ibadan, for the photographs and to Mr Oluwole Ajoje for typing the script.

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