Clinical Application of the Plantaflexed Talus Shoe

PRELIMINARY REPORT

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Pronated feet are probably the most common deformities faced by the the orthopedic surgeon managing growing children. The mild ones, fortunately, respond within a few years to a firm shoe with wedges and pads. Many would probably respond spontaneously. However, the severe pronation deformities are all too often unchanged in spite of several years

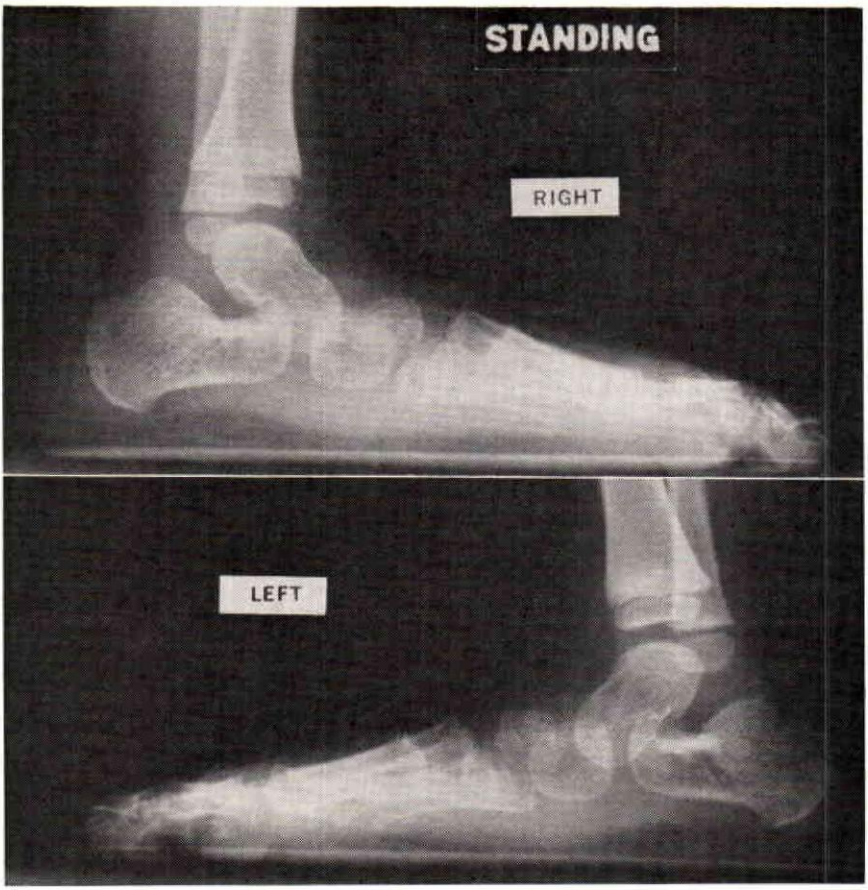


FIGURE 1—This 3-year-old boy demonstrates a bilateral flatfoot deformity. On weight-bearing, note the plantarflexed position of the talus in relation to the tarsal configuration allowing dorsiflexion of the forefoot and relative equinus of the calcaneus.

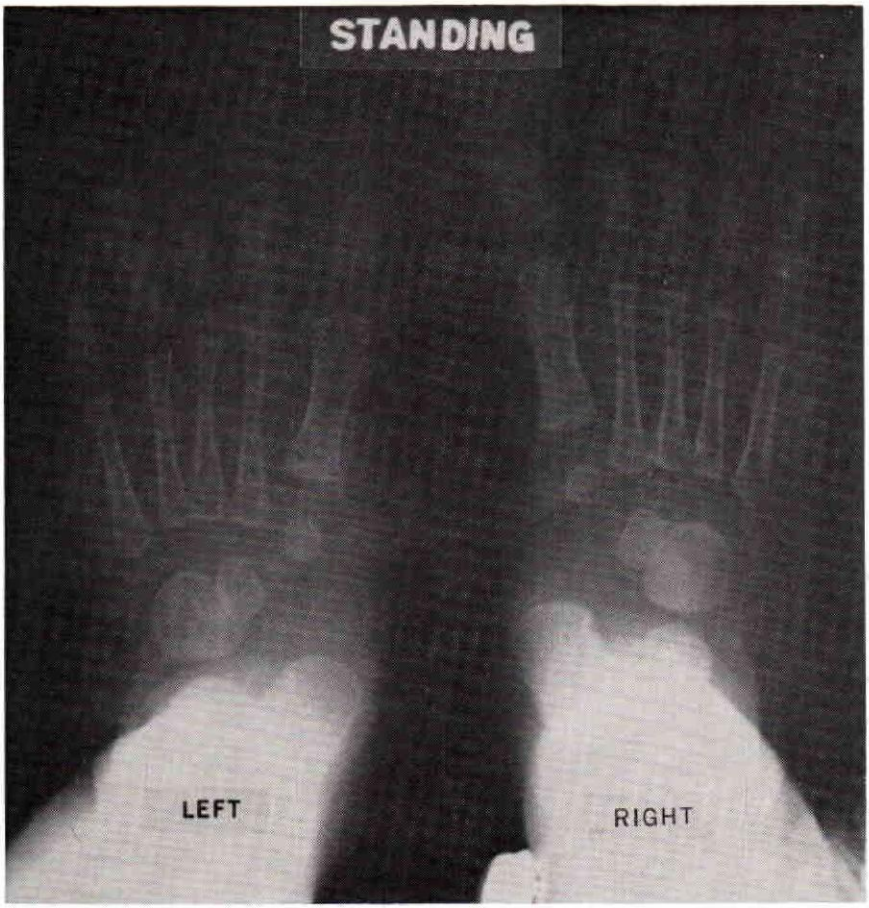


FIGURE 2—Same patient as Figure 1. Note the adducted position of the talar head and relative forefoot abduction.

of corrective shoe management. This has prompted one of the authors (A. Glaubitz) to modify the forefoot drop shoe[3] to include additional corrective components.

Harris & Beath[1] feel most of the severe flatfoot deformities of childhood are due to abnormalities of the tarsal bones resulting in instability. The primary finding was inadequate support of the talus by the calcaneus. With weight-bearing, the head of the talus assumes a plantarflexed (Fig. 1) and slight varus position (Fig. 2). The forefoot assumes a position of valgus and dorsiflexion in relation to the talus when flat on the ground. This results in mild equinus of the calcaneus. If this condition is uncorrected the heel cord becomes shortened, further increasing the deformity.

The plantarflexed talus shoe (Fig. 3) is designed to correct and maintain this type of foot until sufficient internal stability is present or until the child has obtained sufficient age to consider corrective surgery.

The plantarflexed talus shoe is a shoe with three corrective components. (1) A reverse calcaneal heel to bring the hindfoot out of equinus; (2) forefoot drop to bring the forefoot down to meet the hindfoot and (3) slight forefoot adduction to bring the forefoot under the talar head. These modifi-

cations of the "neutral last" result in the establishment of a well-molded longitudinal arch to support the talar head.

The amount of forefoot equinus designed in a shoe will depend on the height of the anterior portion of the reverse calcaneal heel. A suggested practice is to dorsiflex the hindfoot firmly with one hand, then plantarflex the forefoot with the other hand. The height of the reverse calcaneal heel can then be determined. The heel should reach well under the talonavicular joint. The height of the posterior aspect of the heel is about one-half the height of the anterior aspect of the heel. To maintain the proper relationship between the forefoot equinus and the reverse calcaneal heel, a long steel shank is essential. The amount of correction which one may employ

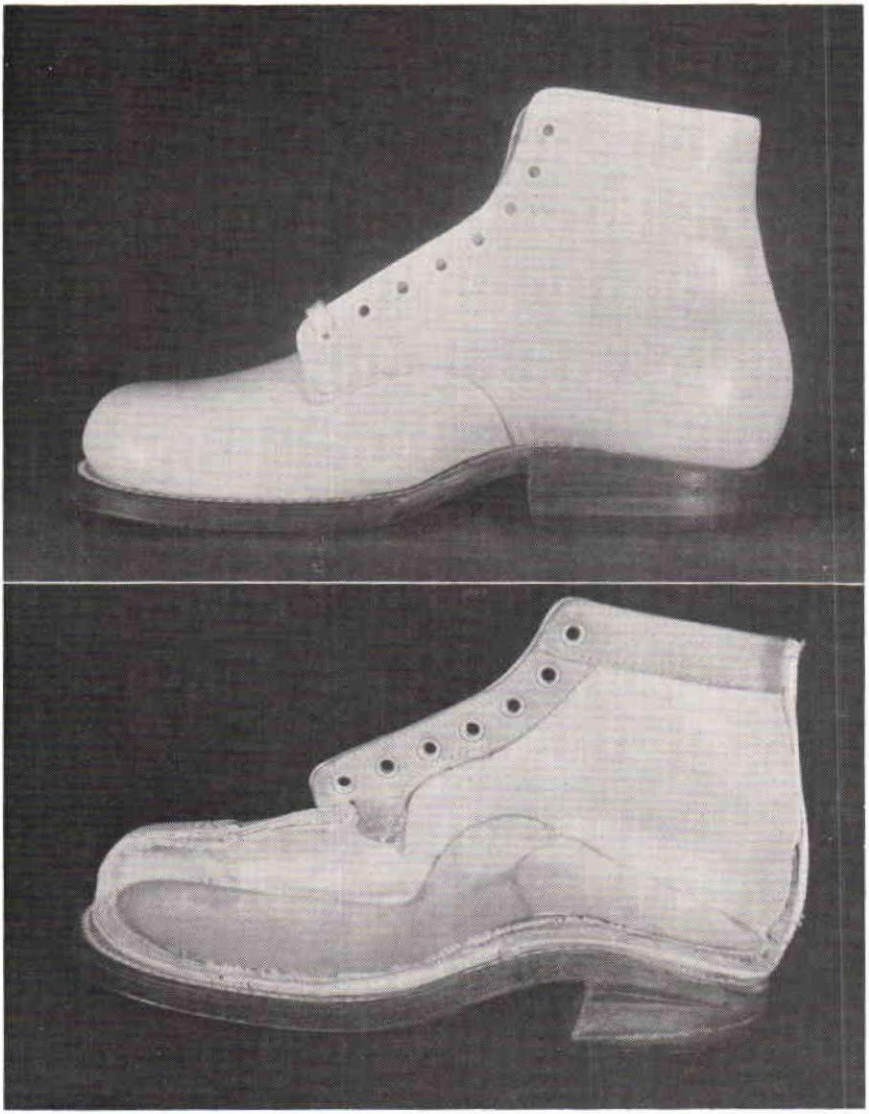


FIGURE 3—Medial view of plantarflexed talus shoe inside and outside. Note midtarsal angulation produced by reverse calcaneal heel and forefoot equinus.

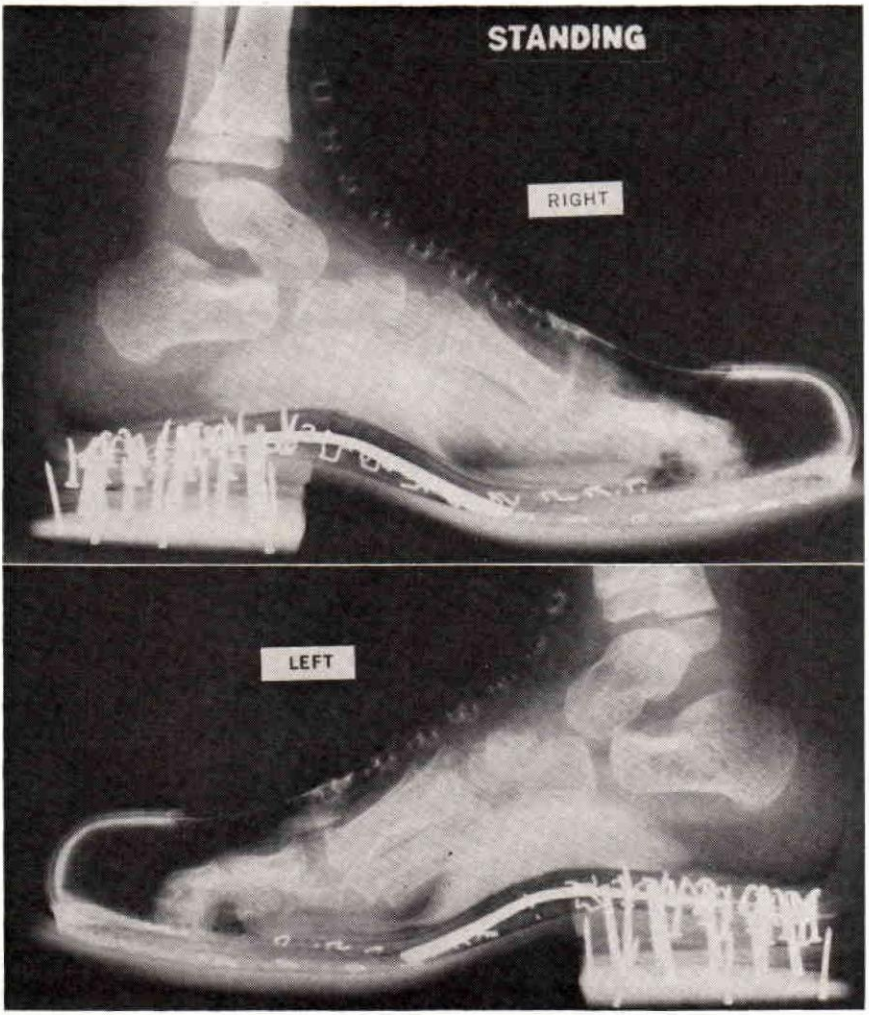


FIGURE 4—Shows same patient as Figure 1 & 2. Note improvement in the position of the talus with weight-bearing in the plantarflexed talus shoe.

depends on the severity of the flatfoot. In a mobile flatfoot in which the tight heel cord can be clinically stretched without great effort, significant correction may be employed initially. In the more rigid case, a nominal amount of forefoot equinus with the accordingly lower reverse calcaneal heel should be used. As the patient's condition improves, increase in the height of the reverse calcaneal heel and greater forefoot equinus should be considered.

We have used this shoe at the State Hospital for Crippled Children in Elizabethtown, Pennsylvania, over the past year with satisfying results. Figure four shows the same patient as Figure one. Improvement in the relationship of the talus to the tarsal bones is evident.

We feel the plantarflexed talus shoe will be a definite adjunct in the treatment of the mobile flatfoot. We do not feel it to be of any benefit in the treatment of a rigid flatfoot or a true congenital vertical talus.[2] [4].

SUMMARY AND CONCLUSIONS

The plantarflexed talus shoe is designed to dorsiflex the hindfoot and plantarflex and adduct the forefoot at the talo-navicular joint. Although no final conclusion can be drawn from this preliminary report, we feel the basic principles involved are sound and we have been satisfied with our early results. It is our hope that others will be interested enough to give this shoe a fair trial in their practices.

BIBLIOGRAPHY

1. Harris, R. I. & Beath, T.: Hypermobile Flatfoot with Short Tendo-Achilles; *Journal of Bone and Joint Surgery*, 30A: 116, 1948.
2. Osmond-Clarke, H.: Congenital Vertical Talus; *Journal of Bone and Joint Surgery*, 38B: 334, 1956.
3. Outland, T., Flynn, J. C. & Glaubitz, A. R.: The Forefoot Drop Shoe and its Clinical Application; *Orthopedic and Prosthetic Appliance Journal*, March, 1958, pages 21-26.
4. Outland, T., Sherk, H. H.: Congenital Vertical Talus; *Clinical Orthopedics*, 16: 214, 1960.

VRA to Work with Disabled Public Offenders

A new nationwide program to rehabilitate disabled public offenders to self-supporting jobs has been announced by Miss Mary E. Switzer, Commissioner of Vocational Rehabilitation in the U. S. Department of Health, Education, and Welfare.

This is the first attempt on a national scale to blend vocational rehabilitation services with Federal prison, probation, and parole programs designed to rehabilitate persons convicted of crime.

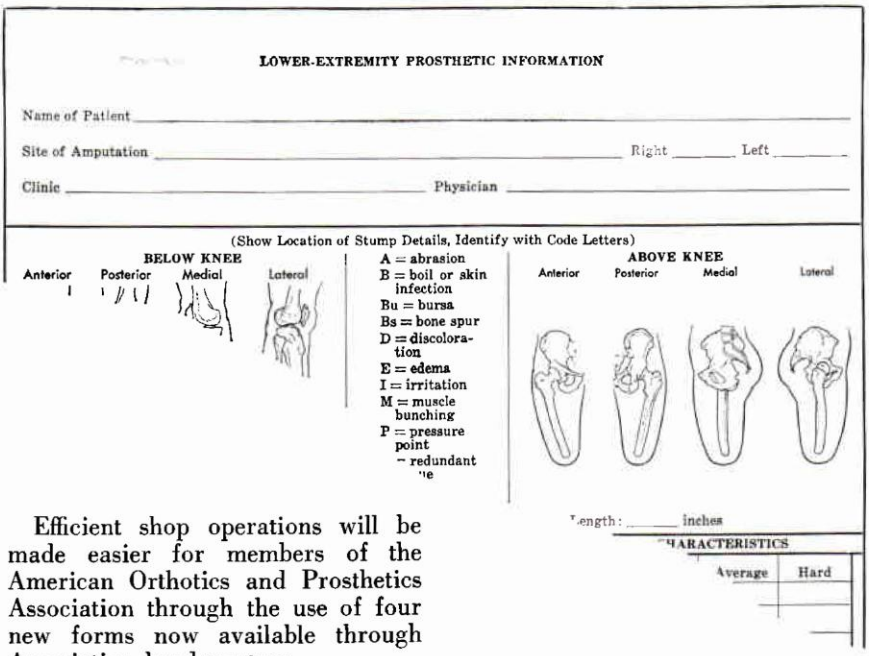
The program will be a cooperative effort of the Vocational Rehabilitation Administration, and three Federal correctional agencies—U. S. Bureau of Prisons, U. S. Probation Service, and U. S. Board of Parole—along with their counterpart organizations in the States. The VRA administers the Federal-State vocational rehabilitation program to prepare disabled persons for suitable employment. This agency also conducts a research and demonstration grant program to find new and better ways of rehabilitating physically or mentally handicapped people.

The program for public offenders, which began this month and will be financed by VRA research and demonstration grants, will consist of eight demonstrations in selected cities throughout the United States. These projects will involve intensive counseling, as well as medical, psychological, training and job placement services.

"For the probationer, parolee, or released prisoner, one of the first requisites for avoiding further crime is a job," Miss Switzer said. "Too often the community fails to give tangible assistance that will reinforce the offender's resolve to 'go straight.' In these projects, the time-tested methods and services of vocational rehabilitation will be used to meet the offender's need for help in resuming responsible, productive lives in his community."

The program will be administered through a "master" project in Seattle, Washington. There will be seven "satellite" projects in Atlanta, Georgia; Denver, Colorado; Springfield, Illinois; San Antonio, Texas; Raleigh, North Carolina; Chicago and Pittsburgh. In each instance, the State vocational rehabilitation agency will receive funds from the Vocational Rehabilitation Administration to conduct the program in conjunction with local Federal probation offices and Federal correctional institutions.

Facility Forms Available for Members


LOWER-EXTREMITY PROSTHETIC INFORMATION

Name of Patient

Site of Amputation Right Left

Clinic Physician

(Show Location of Stump Details, Identify with Code Letters)

BELOW KNEE

Anterior Posterior Medial Lateral

A = abrasion
B = boil or skin infection
Bu = bursa
Bs = bone spur
D = discoloration
E = edema
I = irritation
M = muscle bunching
P = pressure point
– redundant tie

ABOVE KNEE

Anterior Posterior Medial Lateral

Length: inches

CHARACTERISTICS

Average Hard

Efficient shop operations will be made easier for members of the American Orthotics and Prosthetics Association through the use of four new forms now available through Association headquarters.

These forms were developed by the AOPA Conference of Prosthetists, in cooperation with the Committee on Prosthetic-Orthotic Education of the National Research Council, which underwrote the costs. Carlton Fillauer, of Chattanooga, Tennessee, Chairman of the Conference, reports that after extensive testing in member shops throughout the country, it was decided to also make the forms available for sale. A sample set of the four forms is available at 15¢.

A brief description of each of the four forms follows:

Form A—Medical History

Necessary information on each patient is recorded here, and includes such items as medical complications, amputation history, and source of patient.

Form B—L/E Prosthetic Information

Here space is provided for recording details of the prescription. Line drawings of both the above and below-knee stump provide space to record additional information.

Form C—U/E Prosthetic Information

These forms are similar to those for L/E Prosthetic information, and include line drawings of the above and below-elbow stump. Forms A, B, and C are on card stock, strong enough to stand up under shop usage.

Form D—Progress Record

These are on offset paper and can be used in a typewriter. The patient's name, type of prosthesis, and stump sock size are recorded here. There is ample additional space to record facility visits, services performed, and charges made.