

## A 30 Year Functional Follow-up of a Neglected Congenital Clubfoot in an Adult: A Case Report

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### ABSTRACT

Neglected congenital clubfoot in adults has been described in literature, but is not common to see adult patients with this orthopaedic disorder in developed countries with 30 years of follow-up. We report an asymptomatic case of neglected congenital clubfoot in an adult, who is incidentally seeking treatment for her 18-month-old son with congenital clubfoot. Although the cosmetic appearance is unacceptable, this mother remarkably has no functional limitations and for this reason she refuses any surgical treatment for her foot. To our knowledge, this is the first report of an untreated congenital clubfoot with 30 years follow-up.

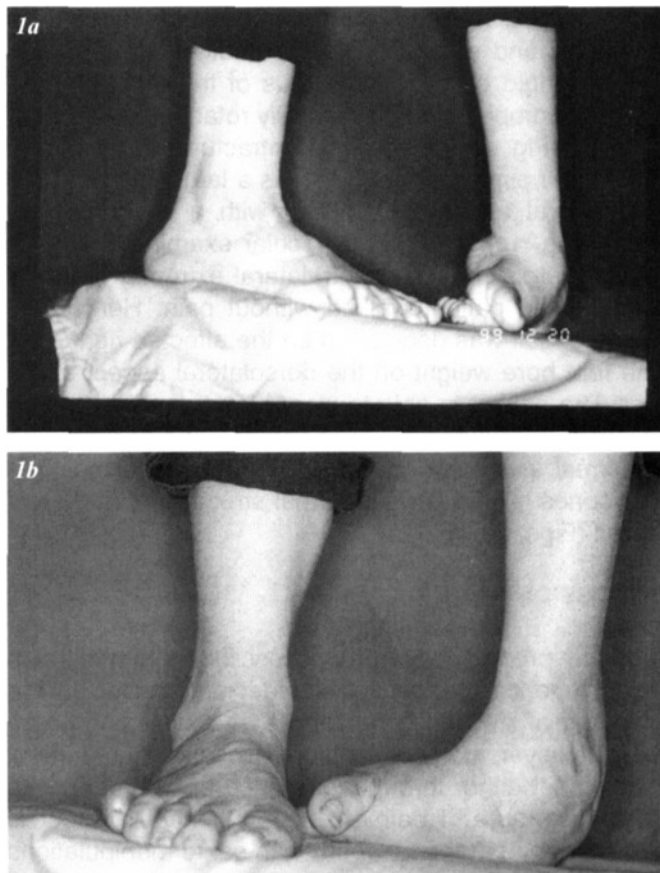
### INTRODUCTION

Clubfoot is a common pediatric orthopaedic disorder. The incidence of congenital clubfoot is 1 per 1,000 live births<sup>12</sup>. Boys are affected twice as often as girls<sup>12</sup>. The incidence of bilaterality is 30-50%<sup>1</sup>. The incidence in first degree relatives (siblings and parents) is 2.4%, and the occurrence rate is 17 times higher than the normal population<sup>12</sup>. The exact etiology is still unknown. The goal of clubfoot treatment is a functional, pain free, plantigrade foot with good mobility. Currently, treatment is still controversial and it is dependent on the severity of the affected foot. Surgical correction of severely deformed and neglected clubfeet in adults is advocated to achieve plantigrade, painless and cosmetically acceptable feet. However the surgical treatment in the adult is complicated, and the type of surgery and even the need of surgery is controversial, due to the high incidence of complications and poor functional results in the long term. In this report, our patient demonstrates a severely

involved clubfoot that remains remarkably functional without pain, despite having no treatment.

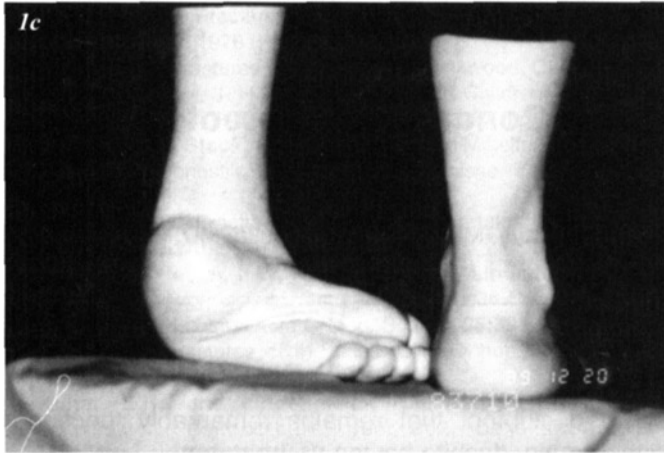
### CASE REPORT

A 30-year-old Hispanic female came to Shriners Hospitals for Children, Los Angeles seeking treatment for her 18-month-old son with a congenital clubfoot. The patient has an untreated left congenital clubfoot. She was born in Mexico. There is no other family history of



**Fig. 1 (a)** Severe and rigid clubfoot deformity. **(b)** Internally rotated and bore weight on dorsolateral aspect. **(c next page)** Marked contracture in Achilles tendon and the plantar skin.

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orthopaedic conditions. During her childhood, she was able to do most activities, such as running and playing numerous sports. In the past two years, she had occasional mild pain on the dorsolateral aspect of the foot, where a subcutaneous bursa developed from weight bearing. At the present time, the mother has no pain nor other complaints, except for the cosmetic appearance of her left foot. On physical examination, the left smaller foot has a severe and rigid clubfoot deformity with adduction and supination of the midfoot and forefoot. There is rigid equinus and varus of the hindfoot (Fig. 1a). The complete foot is internally rotated to the axis of the tibia (Fig. 1b). A marked contracture of the skin in the plantar aspect exists. There is a large callus on the dorsolateral aspect of the foot with a subcutaneous bursa (Fig. 1c). The neurovascular examination of the left foot is normal. The contralateral extremity is totally normal. The patient walked without pain. Her stance phase of gait was decreased on the affected right side. The foot bore weight on the dorsolateral aspect of the foot. The patient is able to wear high-top shoes, which are worn backwards. The radiographs demonstrated an abnormal alignment of her hindfoot, midfoot and forefoot bones. There was abnormal structure of the tarsal bones (Figs. 2a-b).

## DISCUSSION

In the present day with accessible health care in North America, congenital clubfeet are treated in the first year of life with good results. In developing countries, however, many patients may receive no treatment for clubfeet either through ignorance or lack of access to medical care. Treatment for congenital clubfoot is usually begun in the newborn with serial manipulations and casting. Subsequent treatment may be surgical with a soft tissue posteromedial release of the clubfoot. The goals of treatment are to restore the normal bony alignment of the foot to prevent future problems with

joint osteoarthritis. In this untreated case, there is abnormal alignment of the tarsal bones and restriction of motion. The neglected clubfoot deformity has been described in the literature. The treatment of an adult or neglected clubfoot is different from the newborn. The surgical treatment of clubfoot in the adult is complicated, and the type of surgery and even the need for surgery is controversial. The management of the grossly deformed and neglected clubfoot is described infrequently. There have been some descriptions of surgical procedures for treatment of the adult, residual or neglected clubfoot deformity. The procedures described include: resection of the calcaneo-cuboid joint (Evans), trapezoidal resection osteotomy from the cuboid and tibialis anterior tendon transfer to cuboid<sup>2</sup>, a double arthrodesis involving calcaneo-cuboid wedge resection with talonavicular fusion<sup>11</sup>, triple arthrodesis<sup>5,6,10,13</sup>, Ilizarov<sup>3,4,7</sup>, hinged-distraction apparatus<sup>9</sup>, and even amputation<sup>8</sup>. These authors, however, had limited success in their treatment of the neglected, severely deformed clubfoot<sup>2,11,13</sup>. Complications such as neurovascular injury, malposition of the foot and skin necrosis from one stage corrections were found to be related to the older age of the patient and the severity of the deformity. In long term



**Fig. 2 (a-b)** The abnormal disposition of tarsal bones in AP and lateral views.

follow-up of the patients, these authors also have shown a high incidence of degenerative changes in the ankle and midfoot, pseudarthrosis, avascular necrosis of the talus, a high pin tract infection rate, wire-induced osteomyelitis, residual deformity and pain.

The majority of patients undergoing surgical procedures for the neglected, severely deformed clubfoot were satisfied with the appearance of their foot and their ability to walk in and wear commercially available shoes<sup>2-11,13</sup>. We describe a case of a neglected clubfoot deformity in an adult with 30 years follow-up. This adult remarkably has no functional limitations. This clubfoot deformity is severe and rigid. She walks, runs and stands for prolonged periods without any pain or fatigue of the leg. She does, however, seek treatment for her 18-month-old son with a congenital clubfoot. To the best of our knowledge, this is the first report of such a neglected clubfoot deformity with such good function at 30 years follow-up. This adult is doing so well that she refuses any treatment for her foot.

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