50 Years Ago in CORR

Congenital Vertical Talus

Tom Outland MD and Henry H. Sherk MD CORR 1960;16:214–218

Congenital vertical talus is a rare, mostly sporadic condition although there have been some reports of autosomal dominance with incomplete penetration [3]. It occurs in approximately 1 in 10,000 live births and is isolated in about 50% of the cases; it is associated with other neuromuscular or genetic conditions in

the other 50% [1]. The genetic basis is not known, but given there is a family history in 12–20% [1] a genetic basis in at least some patients seems likely. It is characterized primarily by a stiff foot with a concave plantar surface (Fig. 1) and radiographs reveal the vertical position of the talus (Fig. 2). The entity was recognized by various individuals in the late 1800s and early 1900s with a plethora of names but perhaps the first reference in the English language was by Lamy and Weissman in 1939 [4]. They commented,

Consultation of the literature on this subject reveals a surprising number of different terms by which this condition has been successively designated: “*pied plat congenital*” (Nové-

Josserand); “*pied plat valgus congenital*” (Camera); “*pied plat réfléchi*” (Galeazzi); “*luxation congénitale de l’astragale*” (Haglund, Deutschländer, Seiffert); “*luxatio et dystrophia pedis sub talo*” (Siegmund); “*pied valgus congénital convexe*” (Lamy); “*pied plat congénital par subluxation sous-astragali-enne congénitale et orientation verticale de l’astragale*” (Rocher and Pouyanne); “*pes curvus congenitus*” or “*Kyrtopodie*” (Chrysospathes). This list illustrates the wide divergence of views in the interpretation of this deformity, ranging from its non-recognition as a morbid entity (Ombrédanne) to its conception as a specific congenital malformation (Chrysospathes).

Fig. 1 (Reprinted with permission and ©Lippincott Williams & Wilkins, from Outland T, Sherk HH. Congenital vertical talus. *Clin Orthop Relat Res.* 1960;16:214–218.).

Fig. 2 (Reprinted with permission and ©Lippincott Williams & Wilkins, from Outland T, Sherk HH. Congenital vertical talus. *Clin Orthop Relat Res.* 1960;16:214–218.).

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This confusing array of terms and interpretations will also alert the reader to the difficulty in historically researching the origin of original descriptions.

Outland and Sherk, in 1960 [5], reported a 3-year old boy with neglected congenital vertical talus and described additional clinical features: an abducted forefoot, contracted tendons on the dorsum of the foot, a tight heel cord, and a prominence in the sole of the foot caused by the abnormally placed head of the talus (Fig. 1). Radiographically the talus was plantarflexed and nearly vertical (Fig. 2). Nonoperative treatment at the time consisted of manipulation and casting but they stated, "...there is a marked tendency for the dislocation to recur when the foot is brought up out of equinus. Improvement of the appearance and function may be noted temporarily, but lasting correction seldom is obtained. The same is true of other conservative methods, as the Denis-Browne Hobble splint (reversed), the iron and T strap, corrective shoes and night splints." Most surgeons at the time recommended surgical correction, and Outland and Sherk reviewed those reported in the literature including resection of all or part of the talus, osteotomy, and open reduction [2]. In their patient nonoperative treatment had been unsuccessful, so they performed a series of three operations over

Fig. 5 (Reprinted with permission and ©Lippincott Williams & Wilkins, from Outland T, Sherk HH. Congenital vertical talus. *Clin Orthop Relat Res.* 1960;16:214–218.).

Fig. 6 (Reprinted with permission and ©Lippincott Williams & Wilkins, from Outland T, Sherk HH. Congenital vertical talus. *Clin Orthop Relat Res.* 1960;16:214–218.).

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4½ months: open reduction and pinning followed by casting, extraarticular subtalar arthrodesis 6 weeks later, and finally Achilles' tendon lengthening after three more months. The procedures provided radiographic correction (Fig. 5) and functional and cosmetic improvement (Fig. 6).

Recently, Alaei et al. [1] reported a technique of manipulation and casting similar to that used for the Ponseti technique for clubfoot, then either percutaneous pinning of the talonavicular joint and Achilles tenotomy. If the talonavicular joint could not be adequately reduced by closed methods, they made small incision to obtain open reduction and pinning. They reported no followup on these patients, so it is not known whether the reductions

will be maintained and time will tell whether the situation of 1960 that "lasting correction seldom is obtained..." will still apply. Clearly, this remains a difficult problem for patients (and their parents) and a challenging one for surgeons.

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