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EVALUATION OF THE SURGICAL TREATMENT OF CONGENITAL VERTICAL TALUS

Thesis

Submitted in partial fulfillment
for M.D. in Orthopaedic Surgery

by

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بعد فحص الرسالة بواسطة كل عضو منفردا وكتابة تقارير منفردة لكل منهم انعقدت اللجنة مجتمعة في يوم الخميس بتاريخ ٢٩ / ٦ / ٢٠٠٢ بقسم ــــــ مدرج ــــــ بكلية الطب - جامعة القاهرة وذلك لمناقشة الطالب في جلسة علنية في موضوع الرسالة والنتائج التي توصل إليها وكذلك الأسس العلمية التي قام عليها البحث .

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Abstract

*Congenital vertical talus (CVT) is a rare anomaly of unknown aetiology, mostly associated with disorders of CNS and arthrogryposis. Diagnosis is made by clinical and radiographic examinations. It should be differentiated from oblique talus deformities as the later need simpler management.Of the (20) patients in this series, (11) had arthrogryposis multiplex congenita, (2) Freeman-Sheldon syndrome, (2) multiple chromosomal aberrations (MCA) and (5) were idiopathic.

*The pantalar release was applied to 20 cases (30 feet) in our series as one-stage operation to reduce the dislocated talonavicular joint, and to correct the forefoot abduction, hindfoot equines and rocker-bottom deformity. Post-oparative clinical and radiographic assessments were carried out and revealed excellent results in 19 feet, good in 10 and poor in only one foot, operated upon at the age of (5) years.

*Complications of this one-stage surgical treatment included avascular necrosis of the talar head in two feet, pin tract infection in one; overcorrection (cavus) in three; inadvertent early pin removal in one; and inadequate pin fixation in another foot.

*Early detection and surgical treatment before secondary bony changes occur will give better results.

Key Words:

Congenital vertical talus (CVT), rare, unknown aetiology, CNS disorders and arthrogryposis. D.D. oblique talus, one-stage pantalar release. Clinical and radiographic assessments. AVN talar head , pin tract infection, overcorrection (cavus).

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INTRODUCTION

Congenital vertical talus is an uncommonly occurring rigid flatfoot that requires early identification and aggressive treatment. Its various names include *congenital convex pes planus, congenital flatfoot with talonavicular dislocation, and congenital rigid rocker-bottom foot.* The term *congenital vertical talus (CVT)* is easily recognized as descriptive of this condition and is preferred by most authors.

(Sullivan, 1990)

Congenital convex pes valgus is a primary dislocation of the talonavicular joint in which the navicular articulates with the dorsal aspect of the talus, locking it in a plantar-flexed vertical position. The condition is a teratologic anomaly of unknown aetiology probably devoloping in utero at some time during the first trimester of pregnancy. The subluxations of the adjacent joints - the subtalar, midtarsal, and ankle joints - are secondary and adaptive in nature, as are contractures of soft tissues.

(Tachdjian, 1972)

There has been considerable controversy in the literature regarding the terminology that should be applied to this deformity. The principal argument against the use of the term "vertical talus" is that it does not describe the pathology completely. Nevertheless, the other terms frequently employed are primarily descriptive terms, and merely

imply without stating the true nature of the underlying problem. Any term used to describe this entity will probably be incomplete, and the authors prefer the simpler one "congenital vertical talus".

(Coleman,et al.,1970)

The pathological anatomy of congenital convex pes valgus may be divided into three aspects:

1- Tight or contracted musculotendinous units; consisting of the anterior tibial, extensor hallucis longus, common toe extensors, peroneus brevis, and the Achilles tendon.

2- Relatively limited but definite changes in the morphology of the tarsal bones.

3- Abnormal relationships of the tarsal bones to one another: the two main disturbances are the talonavicular and the subtalar subluxations.

(Patterson et al ;1968)

Congenital vertical talus with talonavicular dislocation is not a common anomaly. This condition should be distinguished from the oblique talus with talonavicular subluxation. Both conditions present as valgus feet with the heel in equinus and the forefoot abducted and dorsiflexed. In the weight-bearing lateral roentgenogram of a foot with vertical talus, the position of the talus ranges from oblique to almost vertical, as opposed to the less vertical position of an oblique talus. Although these features are relative, a more precise method of differentiating the two conditions is to obtain lateral plantar flexion roentgenograms of the foot. This