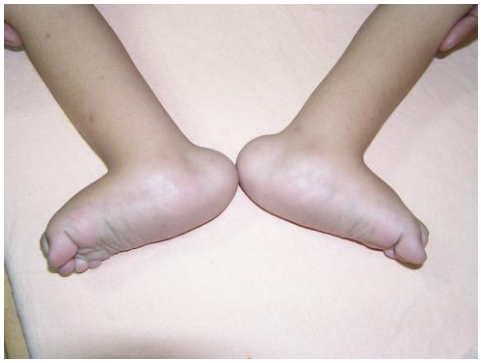
Rocker bottom Foot

Congenital vertical talus (CVT) is an uncommon disorder of the foot, manifested as a rigid rocker-bottom flatfoot. Its characteristic radiographic feature is an irreducible and rigid dorsal dislocation of the navicular on the talus. If the navicular is reducible on the lateral maximum plantarflexion radiograph, it is deemed an **oblique talus**, which is better treated with tendo Achillis lengthening (TAL) and orthotics. If CVT is left untreated, it results in a painful and rigid flatfoot with weak pushoff power. CVT has been referred to in the literature by several synonyms, including congenital convex pes valgus.



The etiology of CVT is unknown, but this condition frequently is associated with a wide variety of neuromuscular disorders. Ogata et al proposed a CVT classification system that divides patients into the following three groups:

- Idiopathic
- Genetic/syndromic
- Neuromuscular

Some have estimated the incidence of CVT to be one tenth that of congenital clubfoot.

Clinically, congenital vertical talus (CVT) presents as a rigid flatfoot with a rocker-bottom appearance of the foot. The calcaneus is in fixed equinus, and the Achilles tendon is very tight. The hindfoot is in valgus, and the head of the talus is found medially in the sole, creating the rocker-bottom appearance. The forefoot is abducted and dorsiflexed.The foot is stiff. In ambulatory children, calluses can develop under the head of the talus, which is very prominent along the plantar-medial foot. Associated genetic syndromes must be excluded.

Weightbearing anteroposterior (AP) and lateral views of the foot are the first radiographs that must be obtained. A lateral radiograph with the foot in maximum plantarflexion is mandatory to confirm congenital vertical talus (CVT).

Since about 2006, the trend has been to perform the Dobbs technique when treating CVT. This technique consists of reverse Ponseti-type casting with percutaneous TAL and Kirschner wire (K-wire) fixation of the talonavicular joint. A limited capsulotomy of the talonavicular joint may be necessary if this joint cannot be reduced in a closed

fashion. Early diagnosis to allow for surgical correction in infants younger than 2 years also should help to improve results.
In an older child one needs to do a proper open surgery. It is hoped that in the future, the amount of dissection can be minimized, reducing the incidence of avascular necrosis (AVN) and, in turn, improving the overall outcome. We believe that the choice of structures to be released is a more important factor in determining outcomes than is the choice of incisions to be used. Special attention must be paid to the dorsal and dorsolateral contracted tissues.
In the first 1-2 years after surgery, the deformity can recur, usually secondary to undercorrection. Undercorrection can occur because of incomplete talonavicular reduction, insufficient posterior ankle release, or residual forefoot abduction. Recurrence of the deformity can also be attributable to neurologic causes, especially in patients with spina bifida. AVN of the talus is a unique complication of CVT surgery. Late complications include restricted range of motion of the foot and ankle, which can contribute to calf muscle atrophy. This in turn can lead to easy fatigue of the affected limb.

Dr Ramani Narasimhan
Senior Consultant, Pediatric Orthopaedic Surgery
Indraprastha Apollo Hospitals, New Delhi.
ramanirn@hotmail.com