

Correction of post septic equinus deformity of left ankle subluxation in combination with 1st metatarsophalangeal joint deformity of 90° downwards with 7 cm L.L.D of left leg, with bad scar and hard skin discoloration in dorsum of great toe

Abstract

Severe equinus deformity of left ankle and 90° deformity to the plantar surface in the left metatarsophalangeal joint can cause a compression and stretch in the whole great toe. As a result, the skin became hard and discolored in the dorsum of the great toe; the patient's gait was awkward and with painful limping.¹⁻⁶

Keywords: post-septic, equinus, 1st metatarsophalangeal joint, tibia, deformity, Ilizarov apparatus

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Brief clinical history

A 20 years old male underwent childhood injection following a septic ankle swelling and pain, which his parents could not explain exactly, as because they are not literate. Severe equinus deformity developed and 7 cm L.L.D was measured in the leg. His parents came to my Bari-Ilizarov Orthopaedic Centre with their boy for correction of ankle equinus, 90° plantar flexion deformity of 1st metatarsophalangeal joint and 7 cm L.L.D of tibia.⁸

Pre-operative clinical photos and X-rays



A



B

Pre-operative problems

- i. Ankle equinus of 65°.
- ii. Left 1st metatarsophalangeal joint, plantar flexion deformity of 90°.
- iii. Hard and discolored skin over the great toe.
- iv. L.L.D of left leg 7cm.

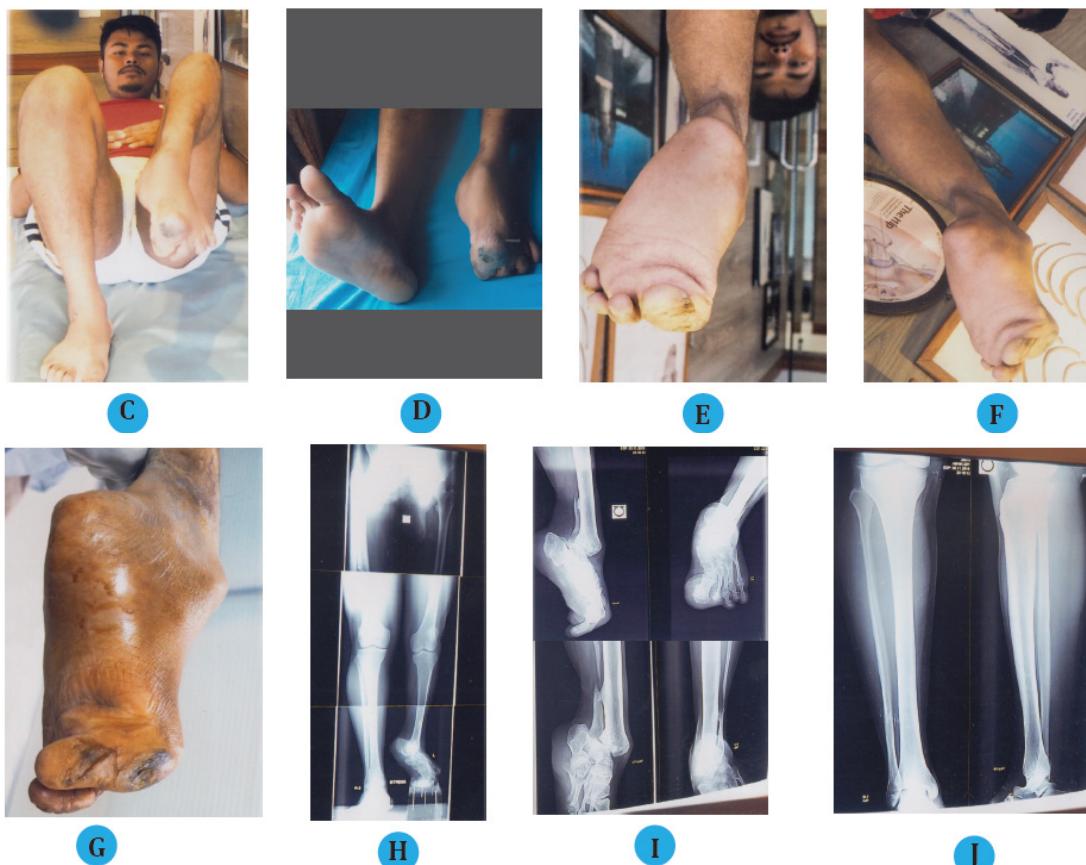


Figure I 20 years old male, post septic equinus deformity of le ankle subluxation in combination with 1st metatarsophalangeal joint deformity of 90° downwards with 7 cm LLD of le leg, with bad scar and hard skin discoloration in dorsum of great toe.

(A, B) Preoperative photograph of left leg of the patient with post septic equinus deformity of left ankle, 1st metatarsophalangeal Joint deformity of 90° downwards with 7 cm LLD of a 20 years old male (front and back view).

(C) Ankle subluxation in combination with 1st metatarsophalangeal joint deformity of 90° downwards.

(D) Right and left foot with downwards displacement of great toe with discoloration of the skin.

(E, F) Plantar surface of the foot and great toe (AP and lateral view).

(G) Hard and discolored skin over the dorsum of the great toe.

(H) Stress radiographic view of lower limb with post septic equinus deformity of left ankle with 7 cm LLD, with 90° downwards displacement of great toe.

(I) Radiographic view of equinus ankle and 90° downwards displacement great toe.

(J) Radiographic view of normal right tibia and ankle for comparative study.

Treatment plan

- Lengthening of left tibia by doing corticotomy in upper metaphyseal region.
- Gradual controlled coordinated stretching of left ankle to correct the equinus deformity by doing subtotal Achilles tendon tenotomy.
- Correction of 1st metatarsophalangeal joint deformity by pushing the metatarsophalangeal joint upward with mini Ilizarov apparatus.⁹

Ilizarov basic principles

- Everything must be done gradually.
- Gradual controlled coordinated stretching the tissue to correct the deformity in the ankle and 1st metatarsophalangeal joint.

- We can predict the recovery of deformity correction all the time.
- Gradual correction of deformity is less likely to lead severe injury.
- The lengthening of tibia and gradual correction of equinus and 1st metatarsophalangeal joint correction simultaneously we did by Ilizarov principles⁷

Ilizarov Fixator and his biological principles of gradual distraction revolutionized the management of limb deformities

- Limb length discrepancies
- Bony and joint deformities
- Soft tissue contractures
- Bone loss

- v. Delayed and non-unions
- vii. Transverse distraction
- vi. Infections
- viii. Ischaemic limbs¹⁰



K

(K) My Ilizarov fellow (Al Sharif) from Jordan, and Prof. Shahid (Anesthetist) is observing the patient during ongoing treatment.

During treatment images, radiographs and follow up



L



M



N



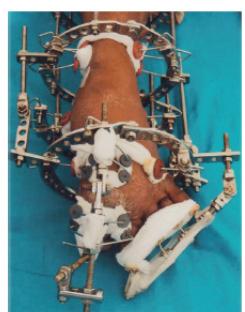
O



P



Q



R

(L) Clinical photo of the left foot after 21 days of application of mini Ilizarov.

(M) Radiograph of left foot after application of the mini Ilizarov.

(N) Clinical photos of the patient with mini Ilizarov.

(O) Radiograph after 2 months with mini Ilizarov in the left leg with lengthening regenerate.

(P) Clinical photo of the patient with mini Ilizarov after 3 months.

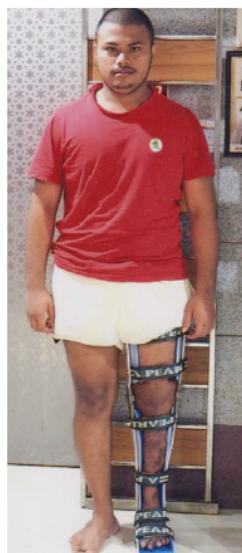
(Q) Radiograph of left leg after 3 months with good regenerate.

(R) Clinical photo of the left ankle with almost corrected 1st metatarsophalangeal joint.

Results, clinical photos and radiographs



S



T



U



V



W

(S) Stress radiographic view of lower limb after correction of the ankle equinus, left 1st metatarsophalangeal joint 90° deformity correction with equalization of 7 cm LLD.

(T,U) Clinical appearance of the patient with brace (Front and back view).

(V,W) Final standing clinical appearance of the patient with ankle equinus and 1st metatarsophalangeal joint correction.

Avoiding and managing problems

Doing lengthening of tibia equinus may happen and to prevent that we are correcting simultaneously the equinus deformity also by distracting the posterior two hinges in the calcaneal region.

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Conflicts of interest

All authors declare no conflicts of interest.

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