

Post traumatic genu valgum with valgus deformity of left lower femur and upper tibia valgus and procurvatum deformity with 10cm L. L. D and puckering of skin around knee with bad scar

Abstract

Post-traumatic femoral valgus and upper tibia valgus and procurvatum deformity with 10cm LLD were corrected with Ilizarov Technique. The lower femur deformity correction and deformity correction of upper tibia and lengthening were carried out simultaneously. This case demonstrates an approach to large complex post-traumatic deformity in the left knee region with puckering of the skin and bad scar.

Keywords: valgus, deformity, LLD, Ilizarov apparatus

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Bari MM,¹ Islam Shahidul,² Ashraf Mohammad Tanvir,³ Bari AM Shayan⁴

¹Prof. Ph.D, Chief Consultant, Bari-Ilizarov Orthopaedic Centre, Visiting and Honored Prof., Russian Ilizarov Scientific Centre, Bangladesh

²Dr. Md. Shahidul Islam, MD; FCPS, Prof., Bari-Ilizarov Orthopaedic Centre, Bangladesh

³Mohammad Tanvir Ashraf, D(Ortho), MS (Ortho), Consultant, Orthopaedics, NITOR, Bangladesh

⁴AM Shayan R Bari, Medical officer, Bari-Ilizarov Orthopaedic Centre, Bangladesh

Correspondence: Bari MM, Bari-Ilizarov Orthopaedic Centre, 1/1, Suvastu Shirazi Square, Lalmatia Block E, Dhaka-1207, Bangladesh, Tel +8801819211595, Email bari.ilizarov31@gmail.com

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Clinical history

A 14 years old boy sustained motor vehicle injury in the left inferior extremity at the age of 8. He was treated at Combined Military Hospital, Dhaka at that time because father is an Army personnel. Now, he was referred to Bari-Ilizarov Orthopaedic Centre for further

management, that is for correction of deformity and L. L. D. Plain X-ray and clinical findings showed his left lower extremity with distal femur valgus deformity, proximal tibia valgus and procurvatum deformity. He was complaining left knee pain and his gait was awkward. His father was anxious regarding his deformity correction and lengthening of left lower limb.¹⁻⁵



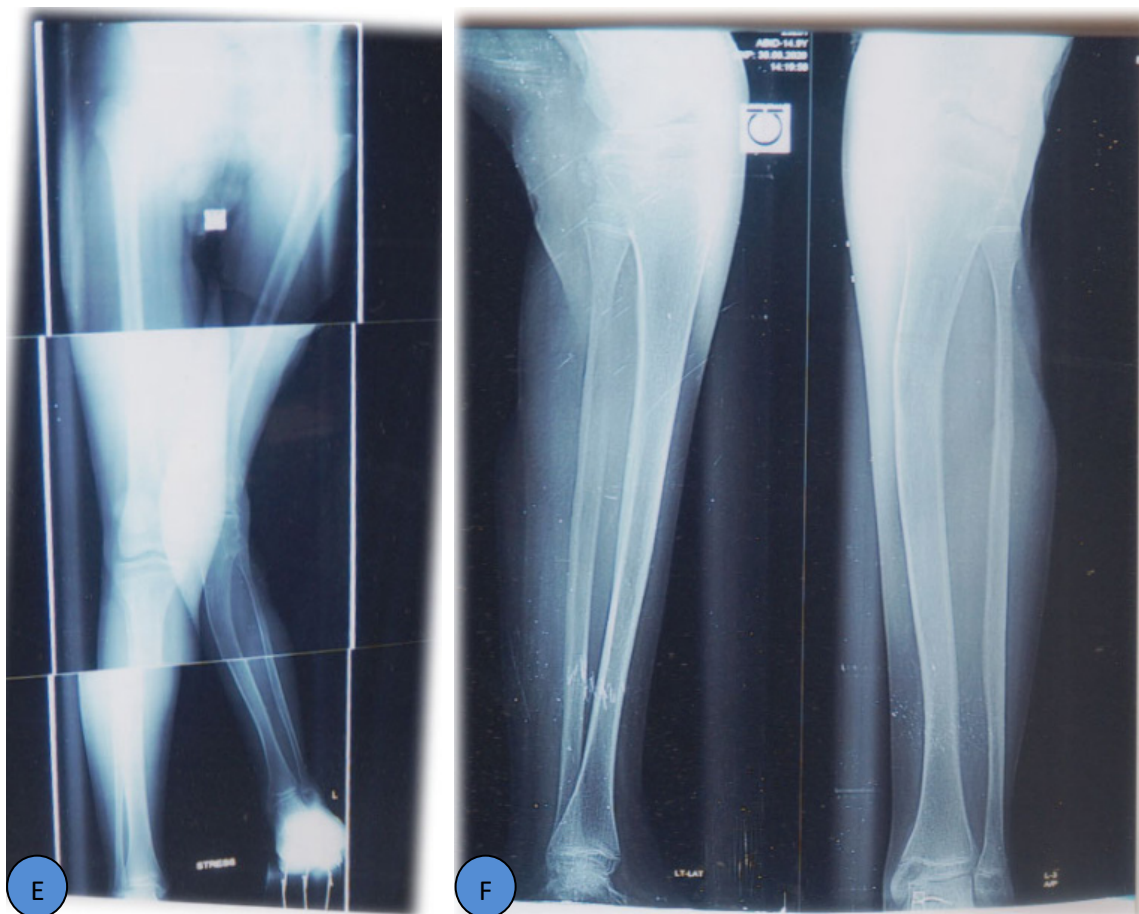




Figure 1 A-J 14 years old boy, Post Traumatic Genu Valgum with Valgus Deformity of left Lower Femur and Upper Tibia Valgus and Procurvatum Deformity with 10cm L. L. D and Puckering of Skin around Knee with Bad Scar.

- (A) Front view of the patient with wooden block, 10cm L.L.D.
- (B) Back view of the patient with wooden block.
- (C) Tilting to the left (Front view).
- (D) Tilting to the left (Back view).

- (E) Bipodal full length X-ray shows his left extremity valgus deformity of lower femur, valgus and procurvatum deformity of left upper tibia.
- (F) Radiograph of tibia valgus and procurvatum deformity.
- (G) In lying condition, valgus of the knee.
- (H) Back view left thigh, popliteal region.
- (I) Puckering of the skin with bad scar, backside.
- (J) Backside with wooden block.

Problems before surgery

1. Valgus deformity distal femur.
2. Valgus deformity upper tibia.
3. Tilting to the left.
4. In the back puckering of the skin is very prominent with bad scar.

Treatment plan

Two steps of surgeries were calculated.

1. Gradual lateral opening wedge osteotomy in the lower femur with Ilizarov techniques.

2. Gradual correction of left upper tibia valgus and procurvatum deformity by osteotomy in true apex of the deformity and followed by lengthening.

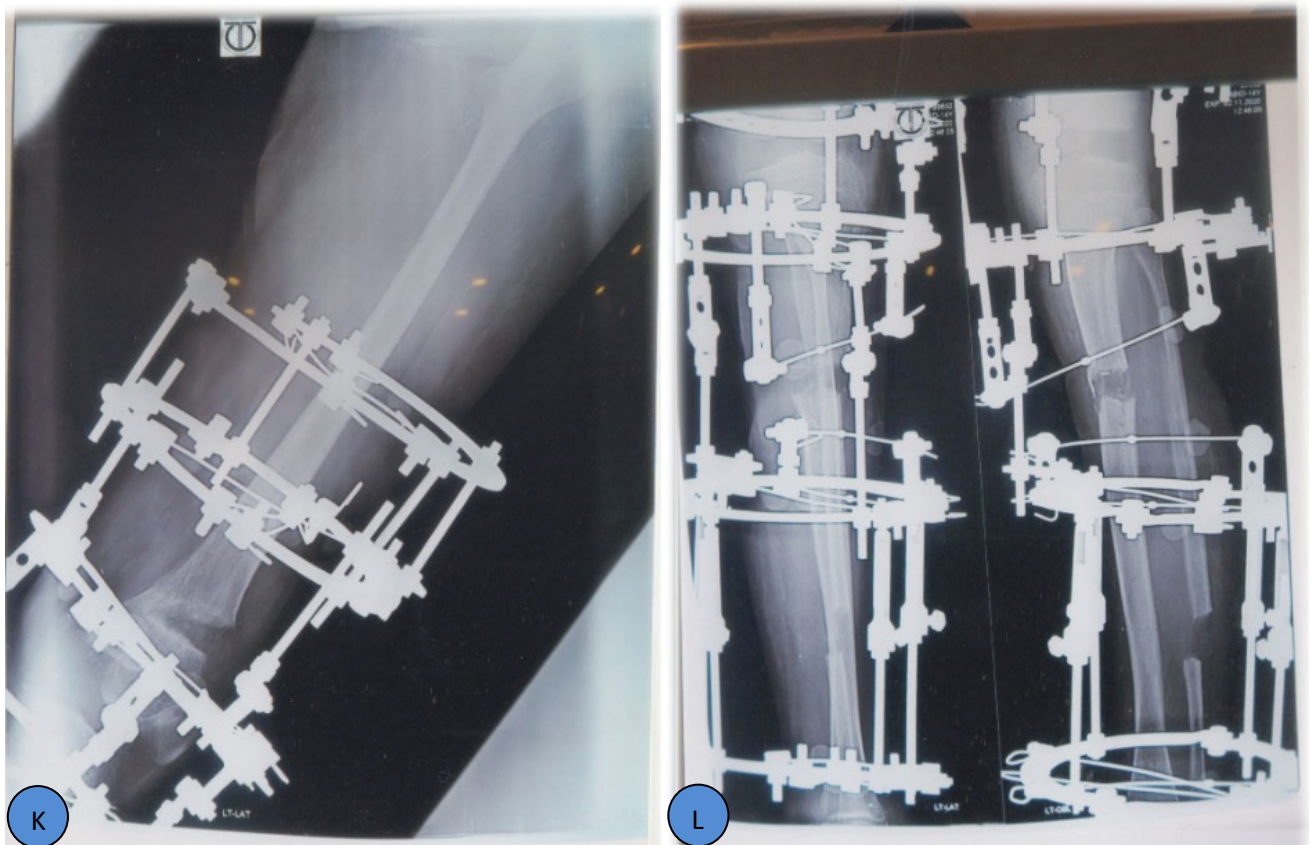
Ilizarov basic principles and philosophy

Everything must be done gradually. In Ilizarov technique gradual distraction is always preferred when amount of deformity is large and bone lengthening is necessary. Here the skin is very bad with bad scar and puckering is obvious.^{6,7}

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

1. Limb length discrepancies - Bony and joint deformities
2. Soft tissue contractures
3. Bone loss
4. Delayed and non-unions
5. Infections
6. Transverse distraction
7. Ischaemic limbs

During treatment images, radiographs and follow up:





M



N



O



P



Figure I K-T

- (K) Radiograph of opening wedge of left lower femur after 26 days, placement of hinges.
- (L) Radiograph of left upper tibia with correction of valgus and procurvatum deformity and placement of hinges.
- (M) Measuring the L.L.D by Prof. M. M. Bari.

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- (N) Radiograph of bilateral inferior extremity after 26 days.
- (O) Front view of the patient with Ilizarov Ex-Fix after 26 days.
- (P) Radiographic view of lower femur after 2 months.
- (Q) Patient with Ilizarov Ex-Fix after 2 months.
- (R) Radiographic view of lower femur after 3 months with good regenerate.
- (S) Radiographic view of upper tibia after 3 months with good regenerate.
- (T) Front view of the patient before dismounting the Ilizarov apparatus.

Technical pearls

1. In Femur: 2 rings in the left middle femur, one ring in the lower femur, in between the 2nd and 3rd ring opening wedge osteotomy with application of hinges.
2. In the tibia: One ring in the left upper tibia and two rings below the true apex of the deformity in the 1st and 2nd rings hinged applied to correct the deformity.

Results, clinical photos and radiographs



Figure I U-X

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- (U) With long leg plaster immobilization after dismantling the Ilizarov apparatus.
- (V) Radiographic view of full length X-ray of inferior extremity after deformity correction.
- (W) No deformity, no L.L.D (Front view of the patient).
- (X) No deformity, no L.L.D, no puckering (Back view of the patient).

Acknowledgments

None.

Conflicts of interest

The authors declare no conflicts of interest.

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