

Correction of adult knee flexion contracture using Ilizarov technique- A report of two cases

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Background

- Severe Knee flexion contracture is disabling deformity which constitute a major impediment to functional weight bearing and ambulation.
- Acute correction whether operative or non operative can lead to undesirable complication
- Methods available for gradual correction include the use of monolateral external fixator to circular
- The ilizarov external fixator is gaining widespread acceptance in the correction of this deformity
- We evaluate the use of Ilizarov circular ring fixator in the correction of severe knee contracture in two young female adult secondary to incision and drainage of pyomyositis of the thigh.

Patients and Methods

Joint contractures (2cases)

Case 1

25 year old female patient who presented with 4 years history inability to extend the left knee following an operation of incisional and drainage of left pyomyositis done at private hospital 5 years prior to presentation.

She was first seen at the plastic surgery unit .

A diagnosis of Fixed left knee flexion contracture with hamstring muscles fibrosis was made.

She had soft tissue release and serial cast application without significant improvement.

X ray of left knee shows fibrous ankylosis without bony involvement .
(Figure 1

Figure 1



Patient and methods (contd.)

The orthopedic unit applied ilizarov frame.

The construct was made up of two rings of equal sizes applied proximal and distal to the knee joint. With at least two finger breath clearance gap from the thigh and leg.

The most proximal ring in the thigh and distal most in the leg were connected to two posterior distraction rods. (figure2).

Figure 2:



The distraction was commenced on the fourth day post using the rule of triangle to give a rate of 1mm per day at the knee. Anterior rods was applied 8weeks later to effect arthrodiastasis . This was done for 10days to achieve a 1mm joint diastasis. To allow for continued posterior distraction. Serial radiograph was done and appropriate adjustment made to the frame.

Full extension was achieved at the 11weeks 4days. The frame was kept in situ for 3weeeeks and was subsequently removed at 14weeks 6days post application. A full leg synthetic cast was applied for a period of 4 weeks.

The patient had equinus foot deformity during the distraction for which percutaneous Achilles tenotomy was done and foot ring was applied to maintain plantigrade foot (fiugre3). Patient was ambulating with bilateral axillary crutches. 11weeks post discharge form the hospital she walks without aid but with short limb gait.

(Figure 4 and 5)

Figure 3 show a foot component in situ after percutaneous tenotomy



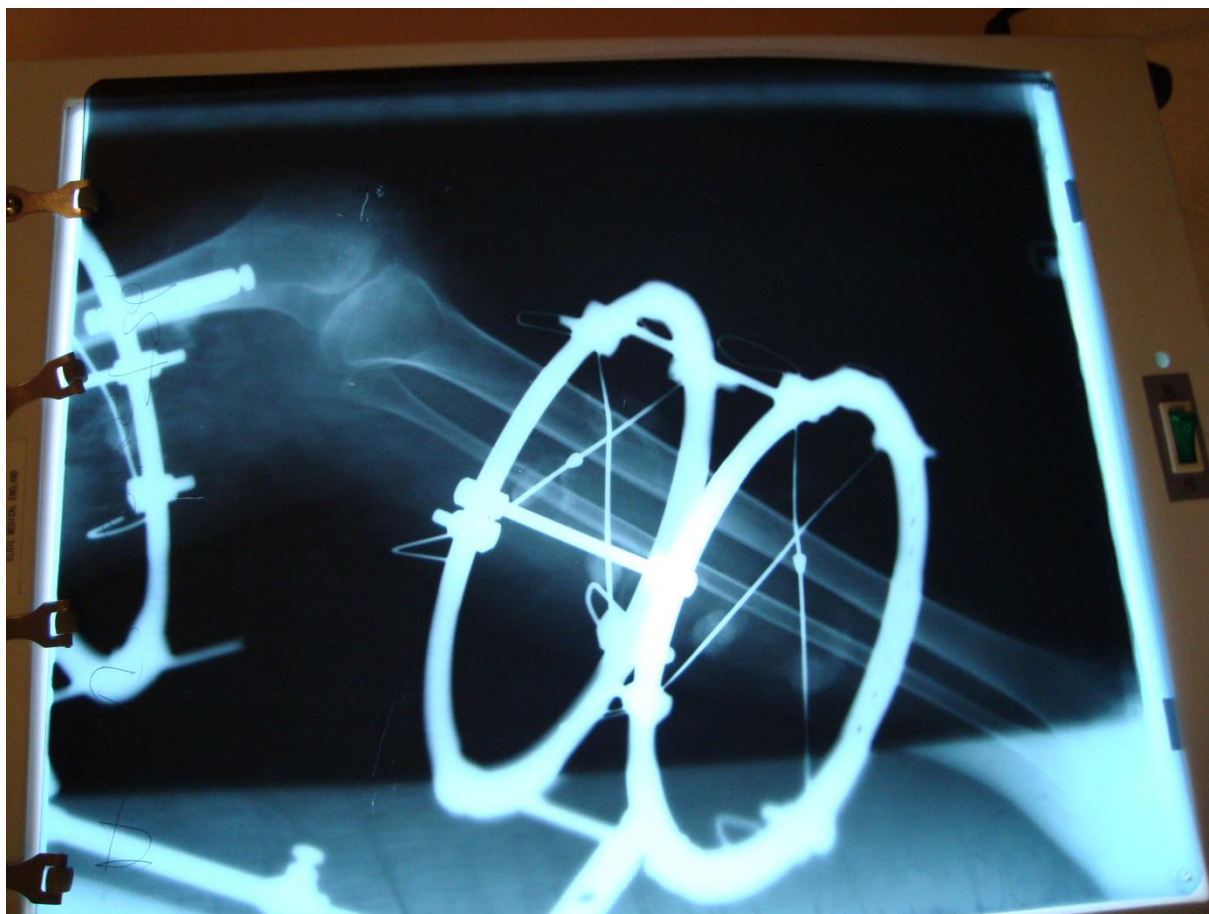


Figure 4: Side view of the patient standing unaided



Figure 5: front view of the patient.



Case 2

- Miss RA 22 yr old presented with complaint of progressive inability to walk on the left lower limb following incision and drainage operation to drain pus on her left thigh when she was 32days old. She initially seen at the plastic surgical unit where a diagnosis of left knee joint contracture was the plan was serial manipulation under anesthesia and splinting, had soft tissue release done with limb splinting . A reviewed by the orthopaedic unit showed a left knee flexion contracture at about 90degrees with shortened limb, valgus knee, hypoplastic and atrophic thigh muscle with external rotation at the hip.. X ray showed no bony ankylosis. Figure 1



Preop x rays





Case 2 contd

The ilizarov frame was applied in a manner akin to case 1 . Distraction was commenced on the 4th day post op from the posterior rods. Figure 2

She mobilized out of bed 7th day post operatively. Ambulation in on Zimmers frame was commenced by the physiotherapy unit 21st post operatively.. The full extension was achieved at 5weeks 1 days post distraction.(Figure 2)

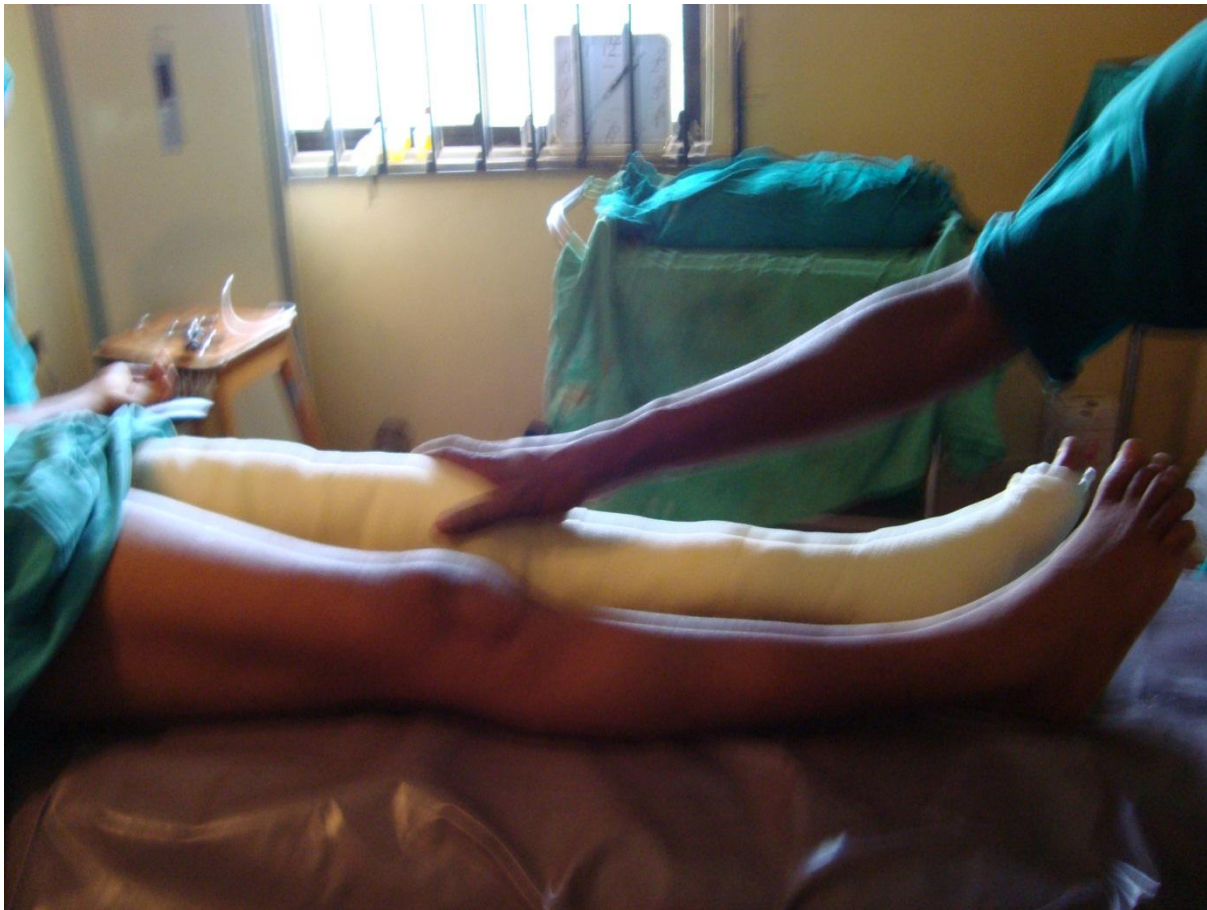
And frame was removed 3 weeks after.

Figure 2



Above knee synthetic cast was applied to correct the varus due to ligamentus laxity and kept in place for 4weeks. Figure 3

Figure 3



- 9week post cast removal Patient ambulate with the Zimmer frame. There is residual deformity which was due to developmentally slow growth with shortening and compensatory equinus at foot figure 4.

Figure 4



Complications of this procedure

- Pin tract infection
- Night pain
- Knee subluxation
- Equinus foot deformity

conclusion

- Ilizarov is a versatile tool in the correction of knee flexion contracture.