

## Soft Tissue Contracture of the Knee Treated with Serial Casting in Adult

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### INTRODUCTION:

Serial casting is a widely acceptable treatment for soft tissue contracture in cerebral palsy patient especially in the paediatric age group (1). However, there is paucity of literature reporting successful treatment of knee contracture with serial casting in adult post trauma.

### REPORT:

Patient X, a 43 years old gentleman with a history of polytrauma sustained on June 4<sup>th</sup> 2023, presented with complex array of injuries, including severe head trauma, right pneumothorax, pelvic ring injury and a closed distal third left femur fracture. The patient underwent supraacetabular external fixation and right sacroiliac joint screw placement for stabilization of the pelvic ring injury, along with plating using distal femur locking plate to address the femur fracture.

At the 4-month follow-up, Patient X exhibited significant impairment in mobility, primarily confined to bed due to fixed flexion deformity of the left knee, which was observed to be at 90 degrees. Additionally, the patient presented with fracture related infection involving the left distal femur.

Diagnostic imaging, including x-ray examination of the knee, was performed to assess for potential subluxation or bony block that could impede the knee extension.

Plate retention treatment was decided for this patient which include surgical debridement and insertion of antibiotic beads to manage the fracture related infection affecting the left distal third femur fracture. While receiving intravenous antibiotics in the ward setting, the patient underwent serial casting on a weekly basis. Each session involved the removal of previous plaster followed by gradual extension of the knee to the maximum tolerable range before application of a new one. To minimize discomfort during the procedure, the patient received oral pain medication 30 minutes prior to each session.



**Figure 1:** Before serial casting applied



**Figure 2:** The last serial casting POP applied

Following the serial casting sessions, close monitoring of the patient's left lower limb was conducted to assess for any signs of vascular or neurological compromise. After 4 consecutive sessions, the patient demonstrated remarkable improvement, achieving full extension and flexion of the knee. With the restoration of the functional range of motion, the patient was able to ambulate with the assistance of walking frame while hospitalized.

### CONCLUSION:

In cases where adult patients presented with fixed flexion contractures and are not suitable candidates for Ilizarov or Hexapod external fixation, serial casting represents a viable therapeutic option. By gradually elongating soft tissues and promoting joint mobilization, serial casting can effectively address contractures and improve functional outcome.

### REFERENCES:

1. Milne, N., Miao, M. and Beattie, E., 2020. The effects of serial casting on lower limb function for children with Cerebral Palsy: a systematic review with meta-analysis. *BMC pediatrics*, 20, pp.1-23.