

Primary Internal Fixation Of High-Energy Proximal Tibial Fracture With Impending Compartment Syndrome Augmented By Vacuum Assisted Closure

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Introduction

High-energy tibial plateau fractures commonly associated with local soft tissue insult and compartment syndrome. Wound closure following acute ORIF is difficult due to severe tissue swelling and commonly associated with wound complications.¹⁻² Hence, early joint mobilization is difficult, resulting in joint stiffness and reduced functional outcome of knee.

Case report

A 48 years old gentleman, involved in an road traffic accident. Patient sustained closed fracture left tibial plateau (Schatzker VI) (Fig. 1). Left shin was swollen with signs impending compartment syndrome. Left tibia underwent primary ORIF (proximal medial locking plate) and fasciotomy, augmented with VAC. VAC applied for one cycle (7days). Then followed by secondary suturing of fasciotomy wound and split skin grafting.



Fig. 1: Anteroposterior and lateral radiographs of left knee showing Schatzker VI injury.



Fig. 2: Anterior and lateral aspect of left knee and shin during follow-up on 7th week post trauma.

Discussion

Kenneth A. Egol *et al*³ reported that temporary spanning ext-fix and delayed definitive fixation has a downside of residual knee stiffness. Range of motion at final follow-up was 1°-106°. Mean Western Ontario McMaster functional knee score (WOMAC) was 37.9%.

Erik Stark *et al*⁴ reported that high-energy proximal tibial fracture with medial plateau fracture-dislocation may be at higher risk of compartment syndrome after placement of spanning ext-fix when compared with Schatzker type VI injuries.

Herscovici Dolfi Jr. *et al*⁵ reported that VAC may be a viable adjunct for treatment of open high-energy injuries.

Conclusion

In our case, WOMAC index was 13.5% during follow-up on 7th month post trauma with range of motion achieving 0°-110°; ESR 23 mm/hour and CRP 2.7 mg/L. This case has proven that primary ORIF in high-energy proximal tibial fracture with impending compartment syndrome may be possible with VAC as adjunct treatment.

Reference

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