

Improvisation in External Fixation in the Management of Fractures at the University of Port Harcourt Teaching Hospital

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BACKGROUND

External fixation is an important modality in fracture management. It is a method of aligning and realigning bones using a combination of pins, wires, clamps and bars or rings. Clamps link a pin or wire to a rod or ring. Sometimes all the components of an external fixator may not be available and there will be a need to improvise. The aim of this study is to report the use of a synthetic cast as an improvised external fixator clamp in fracture management

METHODS

This a prospective study of consecutive patients with open limb fractures at the University of Port Harcourt Teaching Hospital, Port Harcourt between October 2012 and June 2013. A synthetic cast was utilized either partially or wholly as clamps for external fixation. The patient's age, gender, mechanism of injury, affected limb and injury were considered. At the time of initial debridement, the external fixators with the improvised clamps were applied and subsequent soft tissue wound cover was carried out. After soft tissue wound healing the external fixators were replaced with appropriate synthetic casts. Fracture union and further treatment are highlighted.

RESULTS

During the period, five patients were managed with the improvisation. They were aged 16 years to 30 years, consisting of 3 males and 2 females. Four of the injuries were due to road traffic accidents and one from gunshot injury. The injuries were Gustillo type 3B open fractures in four and type 3C in one. The involved bones were the left tibia/fibula in two, right tibia/fibula in two and left humerus in one. The duration of hospital stay ranged from 4 weeks to 5 months. Three of the fractures united, with a malunion and nonunion in one patient each respectively. One patient subsequently had a distal limb amputation for gangrene. Two patients had skin grafting while the wounds healed by secondary intention in 2 other patients.

CONCLUSION

The improvisation of synthetic cast for external fixator clamp is effective in the acute management of open limb fractures as well as during subsequent care.

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