External Fixator in Elderly Patients with Hip Fractures
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ABSTRACT
Introduction: Fragility fractures around the hip are common in the elderly and are associated with significant morbidity and mortality. Early stabilization and mobilization reduces mortality associated with prolonged recumbence. In patients who are not fit for general anesthesia, external fixation under local anesthesia will help early mobilization.

Methods: A retrospective study of hip fractures treated between 2002 to 2009 was undertaken. Out of 242 hip fractures, 13 patients with inter-trochanteric fractures had undergone external fixator application under local anesthesia. There were 9 females and 4 males; five were on right side and 8 on left side. As per the system of American Society of Anesthesiologists (ASA), 10 were of grade III, 2 of grade IV and 1 of grade E. The age of the patient ranged from 60 to 92 years (average 80 years). The average delay in surgery was 8.2 days for cases presenting soon after the injury.

Results: Follow up was done at 6 weeks, 3 months and 6 months with the average follow up of 4.7 months. All the fractures (n=13) united and the average time to radiological union was 3 months. Three patients had grade I pin tract infection which was easily controlled with local care. The average Harris hip score at final follow-up was 92.

Conclusion: External fixator can be a valuable tool for the treatment of hip fractures in high risk elderly patients with concomitant medical co-morbidities.

Keywords: external fixation; elderly; Hip fracture.
IV and I was grade E. All cases were done under local anesthesia. The average delay in surgery was 8.2 days. One case presented to our center with a painful nonunion 7 months after sustaining an inter-trochanteric fracture. We managed the case with external fixator which was removed after 7 weeks and she is well mobilizing without pain in the hip.

All our 13 cases were done under local anesthesia with sedation due to co-morbid conditions precluding general or spinal anesthesia. 10 ml (213 mg) of injection xylocaine with adrenaline (2%) was diluted with 40 ml of distilled water and injected on the fracture site and the pins site. We waited for about 10 minutes before inserting the pins. An image intensifier and fracture table was used. Following reduction, the fracture was stabilized with 2 or 3 Schanz pins each proximal and distal to the fracture connected by a simple AO tubular rod.

The patients were made to sit up immediately post-operatively, graduating from bed to chair, chair to walker and limited non-weight bearing ambulation for up to 6 weeks after which gradual increase from toe-touch to full weight bearing was instituted. Emphasis was given during the entire post-operative period to physiotherapy including chest physiotherapy and anti-thrombotic measures including daily prophylactic low molecular weight heparin and thromboembolic deterrent stockings. Patient’s family was also educated for the physiotherapy and pin tract care so that they will continue so after discharge.

RESULTS
The average follow up was 4.7 months ranging from 3 months to 12 months. All fractures have radiological union at 3 months. Two patients had died 3 to 4 months post-operatively due to causes unrelated to external fixator application. The average Harris hip score at 6 months was 92. In three patients, collapse of the fracture into varus was noted but this did not cause any inconvenience with their activities of daily living. Three patients had grade I pin tract infection which were easily controlled with local dressing with normal saline. The average duration of hospital stay was 11.63 days (range 6 to 25 days).

DISCUSSION
Hip fracture is a leading cause of death and disability among the elderly. Delay in operation is associated with an increased risk of morbidity and mortality. The fundamental principle of management is thus aimed at early restoration of the anatomic alignment of the fracture, maintenance of the fracture reduction and early rehabilitation. Although the sliding hip screw is the gold standard for fixation of these fractures, it may not always be possible to undertake this procedure in the face of major co-morbidities precluding general, spinal or regional anesthesia. In such circumstances, external fixation is a good alternative for fracture stabilization allowing for a quick, cheap and effective stabilization that can be undertaken under local anesthesia. Some authors have even advocated an external fixator over a sliding hip screw in view of the shorter operative time, less blood loss, less pain and shorter duration of hospital stay. Complications related to external fixator include pin tract infection which can easily be controlled with meticulous local care. Collapse of the fracture into varus is commonly found but this seems to be well tolerated by the elderly, possibly because of their low demands in activities of daily living or due to associated co-morbidities restricting excessive ambulation. In their study of 154 cases over an 8 year period, Dhal et al. noted an average union time of 16 weeks, good return to function in all cases, late displacement in 9 cases and deep pin track infection in 6.
CONCLUSION

In conclusion, External Fixator is useful in fixation of intertrochanteric fractures in elderly people with concomitant medical co-morbidities who are deemed unfit for general or spinal anesthesia. It can be carried out as a quick and safe procedure with minimal blood loss under local anesthesia, enabling the patients to ambulate early, thus, preventing or mitigating the problems associated with recumbence in the precarious scenario of a concomitant hip fracture.

REFERENCES


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