The Management of Closed Femoral Shaft Fractures

Background and rationale: Femoral shaft fractures are caused by high-energy trauma. There is strong evidence that early reduction and stabilisation, allowing prompt mobilisation, leads to better outcomes and reduces morbidity. Non-operative treatment may result in malunion with significant functional deficit.
Inclusions: Patients with closed femoral shaft fractures who are skeletally mature.
Exclusions: Patients with pathological fractures and periprosthetic fractures.

Standards of Care

1. There must be a documented defined pathway of care for patients presenting with suspected femoral shaft fractures. This includes the emergency transfer of patients with vascular injuries and open femoral fractures.
2. A primary and secondary trauma survey, including ABCD resuscitation protocol, history, and clinical examination, must be performed on arrival and documented in the patient's record.
3. Full-length AP and lateral radiographs of the femur, including the hip and knee joints, without delay after assessment. If access to radiography is not immediately available; imaging should be performed within 24 hours of presentation.
4. Closed femoral fractures should be transferred in an appropriate splint to the definitive treatment hospital as soon as possible, but no later than 3 days after presentation. All hard copy radiographs should accompany the patient; it is acceptable to allow copies to be on a smart phone.
5. At the definitive facility, if there is a possible delay of more than 5 days, skin traction or skeletal traction with a proximal tibial traction pin, should be considered.
6. Patients should be given an explanation of their injury including the treatment plan and the expected outcome.
7. The treatment standard is intramedullary nailing, locked proximally and distally performed within 5 days of the injury.
8. The WHO Surgical Safety Checklist must be completed, and a single dose of prophylactic antibiotics should be given at the start of surgery.
9. If Intraoperative fluoroscopy is not available, or reduction is difficult, an open reduction may be performed. Reduction of the length, alignment and rotation of the limb should be performed, and this can be checked against the contra-lateral limb. Intra-operative images and/or postoperative radiographs should be obtained to confirm reduction and adequate implant position and should be saved in the patient records. These should include images of the femoral neck to exclude an ipsilateral neck fracture.
10. Patients should be allowed to fully weight bear as tolerated, the day after surgery, unless there are specific concerns regarding the stability of the fixation or contraindications.
11. The risk of VTE should be assessed according to local guidelines. If chemoprophylaxis is required, low-dose aspirin is recommended.
12. Patients should be given information on expected functional recovery, possible complications, and rehabilitation, including advice on return to normal activities. This should be in the patient's own language and/ or in an illustrative pictorial format and should be available in both printed and digital formats.
13. Wounds should be reviewed after 2 weeks. Further follow up including radiographs should occur within 3 months or follow local policy. Patients should be able to access advice or follow-up with the treating hospital, if they have concerns, or if there are reported complications.
14. All cases should be audited against the above standards including fracture reduction and reported complications. The audit should be presented at the departmental meeting. This should be performed quarterly and then annually once established.

These standards are developed by professional international consensus from the region, using limited randomised control trials and retrospective cohort studies where available. They are not designed or intended to be comprehensive.