

## 2. Inability to achieve or maintain stable reduction (13 cases).

All patients were followed radiologically and clinically until fracture healing at a median follow-up of 20 months.

**Results:** Of the 20 cases, the radius was nailed in 17 cases while the ulna was nailed in 3 cases. Average time interval between the injury and nailing procedure was 4.2 days. Median operating time was 35 min. Median hospital stay was 2 days. All fractures were radiologically united at a median of 6.7 weeks (6–9 weeks). Patients were followed up for an average of 20 months (range 6–30 months). No complications were found in this series.

At follow-up, full range of movement of elbow and wrist were found in all cases. No rotational deformity was found in any case.

**Conclusion:** In our experience single bone fixation with flexible intramedullary nails seems to be safe and effective in the management both bone forearm fractures in children between 6 and 14 years.

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### Ender's nail fixation of tibial pilon fractures—A safe, minimally invasive approach for high risk patients in a small district general hospital

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**Purpose:** To assess the results of treatment of complex tibial pilon fractures using percutaneous Ender's nails at a district general hospital in a high risk patient group.

**Introduction:** Closed fractures of the distal tibia (pilon/plafond) represent a notoriously difficult fracture subset to treat in order to gain satisfactory radiological and clinical outcomes. Open fractures present added potential complications. Treatment plans must encompass injury severity, patient's medical status and expectations, and surgical experience.

**Method:** Five consecutive patients (4F:1M), average age 67 years, with AO 43 fractures (see table) were treated using a minimally invasive approach, primarily using Ender's nails to stabilise the fracture.

Open fractures were debrided/lavaged and stabilised according to BOA/BAPS guidelines within 6 h of presentation. Two tibial and one fibula Ender's nails were used in all cases. The fibula wire was left proud of the skin in all but one case and subsequently removed. Soft tissue defects underwent delayed split skin grafting. All were placed in a below knee POP and mobilised non-weight bearing until fracture consolidation.

**Results:** Average fracture union was 15.4 weeks (range 10–20). Full weight bearing took an average of 10.75 weeks (10–15). Average follow-up is 39.4 weeks (16–105) and X-ray appearances at latest follow-up show satisfactory joint surface reduction in all patients. Clinically, average ankle dorsiflexion is 7 degrees (0–10) and plantarflexion 21 degrees (15–30). Complications include fibula pin-site infection in two cases which resolved with wire removal and oral antibiotics

**Conclusion:** Given the satisfactory radiological and clinical outcome in this small case series we feel that a minimally invasive approach using percutaneous Ender's nails is a safe and effective treatment modality for a complex injury in a complex patient group.

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### Minimally invasive locking plate osteosynthesis of distal tibia fractures: Our early experiences with 20 patients

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**Aims:** We report our early experiences with minimally invasive locking plate osteosynthesis, for distal tibia fracture fixation, with consideration to fracture union, infection and soft tissue healing.

**Patients and methods:** Twenty patients were treated with minimally invasive locking plate osteosynthesis for open and closed distal tibia fractures; they were treated between March 2003 and December 2004. Case notes, radiographs and clinic notes were reviewed for all patients. Fractures were classified according to the AO system and open fractures via the Gustilo and Anderson classification.

Patient	AO # classification	Open/closed/other	Fixation type
1	43 C1.2	Open (grade II)	Enders nails + screws
2	43 A2.1	Closed (large ulcer)	Enders nails
3	43 C2.2	Closed	Enders nails + screws
4	43 C3.2	Open (grade IIIB)	Enders nails
5	43 C2.2	Open (grade IIIB)	Enders nails