

Twice Bent Excellence: Achieving Success in Reduction Dia- Metaphysis Fracture Using Double Pre-Bending Technique of Intramedullary Nail

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INTRODUCTION:

Addressing an unstable distal radius fracture in paediatrics through cast immobilization may prove inadequate. Plating on the other hand is more invasive. Presenting a successful reduction of distal radius fracture using double pre-bending technique of a titanium elastic nail (TENS).

REPORT:

This is a case study of 14 years old boy with a closed distal radius and ulna fracture who presented to us following failed conservative treatment.

TENS was used for fixation. The procedure was commenced with ulna fracture fixation, by employing TENS with single pre-bending technique followed by radius fracture fixation by employing double pre-bending technique.

In the double pre-bending technique, the nail was first pre-bent to 45° at a location 1cm proximal to fracture. The second pre-bend, about 2-3cm distal to the first kink, was created by bending the nail in opposite direction. The nail was then inserted until the first and second kink positioned proximal and distal to the fracture respectively. A good reduction was achieved and maintained throughout the fracture healing.

DISCUSSION:

Ideal osteosynthesis for dia-metaphysis fracture of radius remains controversial. Minimal invasive technique, especially using TENS, has now been preferred especially in paediatric population¹. The classical single-bent technique is unsuitable due to lateral displacement of distal fragment². Theoretically nail should be inserted medial to radius to achieve good reduction, however this is

impractical. The double pre-bending technique offers optimal reduction and stability by providing 3-point fixation².



Figure 1: Xray pre TENS reduction;



Figure 2: Xray post TENS reduction

CONCLUSION:

A double pre-bending technique has proven to achieve good reduction by providing 3 points support intramedullary in dia- metaphysis radius fracture.

REFERENCES:

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2. Krohn C. Double Pre-Bending of an intramedullary nail is the minimal invasive osteosynthesis solution for dia-metaphyseal fracture of the radius in children[Internet]. 2022 Apr 18;9(4):579.