

Modified Kirschner wire pin entry point placement method in displaced pediatric distal forearm fractures

Tepeneu N. F. ^{1),2)}

¹⁾ "Victor Babes" University of Medicine and Pharmacy, Timisoara

²⁾ Klinikum Klagenfurt am Wörthersee, Austria

Introduction

- In completely displaced pediatric distal metaphyseal forearm fractures, achieving satisfactory reduction with closed manipulation and maintenance of reduction with casting is difficult
- The majority of these fractures requires closed or open reduction of the fracture and osteosynthesis of the radius or radius and ulna

Material

23 pediatric patients with displaced distal metaphyseal forearm fractures

Age: 6 to 14 years

Treatment : closed reduction and K wire fixation with modified radial entry points

11 cases – Kirschner wires were left outside the skin

12 cases- Pins were buried under the skin

- In all patients 2 radial Kirschner wires were used for osteosynthesis of the radius

Postoperative immobilization was enforced for 3 to 6 weeks with a short arm plaster of Paris cast, after which time the K-wires were removed

Patients were followed for a minimum of 3 months

Results:

- Mean patient age was 9.5 years
- Achievement of near-anatomical reduction - in all fractures
- On follow-up, there was no loss of reduction
- Remanipulation was not performed in any case
- 1 pin-related complication, where the pins were left outside the skin
- All fractures healed, and full function of the wrist and forearm was achieved in every case.



Preoperative X-ray: displaced distal metaphyseal radius fracture with a greenstick distal metaphyseal ulnar fracture.



Conclusion

The obtained results with the current method of K-wire fixation with modified radial entry points were good and, from study of the literature, comparable to other methods, like the Willenegger and the Kapandji technique

The described method of K-wiring is useful in achieving and maintaining reduction in displaced distal metapyseal forearm fractures

Near-anatomical closed reduction can be easily achieved

With no fear of redisplacement, the casting period can be reduced

When no clinical deformity is present, the follow-up period can be shortened

A limitation of the current study is perhaps the small number of patients, a randomized controlled trial in which the different fixation methods of distal forearm fractures in children is compared would be ideal.