

**Name**

Anilkumar Vidyadharan

**Email**

pgtakv@gmail.com

**Title**

An innovative method of closed reduction and stable mode of percutaneous pinning for distal radius fracture

**Purpose**

None of the available mode of per-cutaneous pinning is stable by itself. I had achieved a stable mode of pinning through a series of modifications in the configuration and technique in more than 700-cases for the last 19-years Objectives- Can we do an innovative method of closed reduction and percutaneous pinning for fracture distal end Radius which is stable by itself to neutralize the deforming forces. The fixation should be done without skin incision, with no implants outside the skin and without interfering the movement of the Radio-carpel joint.

**Methods**

It is a prospective study of 200 cases over a period of 4 years in 3 age groups (18-45, 45-60, 60-84). Closed reduction done by traction-counter traction with 2-assistants in 2-stages. Fixation done by creating 2-triangles in 2-plains with 6-k-wires through a SELF DEVELOPED K-WIRE JIG for distal end Radius. K-wire jig allows the surgeon to select the point of entry and angle of penetration of the k-wire for the creation of the 2 triangles in different plains. 1st wire from R-styloid to proximal fragment 2nd wire from the lateral side of proximal fragment to radio-lunar facet 3rd wire from the ulnar head to R-styloid through DRUJ. This triangle encircles the compressed comminuted metaphyseal fragments. The k-wire jig can be dismantled in to 4 pieces to remove after fixation without disturbing the inserted k-wires.

**Results**

The results are evaluated on the basis of clinical scoring system of Green and O'Brien Overall result (excellent & good) comes to 93% with a split up of 96% for group-1, 91% for group-2, and 81% for group-3. The patients can return to the original work in restricted form by 3 months without any restriction by 6 months and perfectly normal by 1 year.

**Conclusion**

The 2-sets of 3-K-wires in 2-plains add strength and stability by providing at least 2-k-wires for each inter-fragmentary fixation and 6-point k-wire crossing, by which (1)-it prevent metaphyseal collapse, similar to steel scaffoldings in cement concreting. (2)-maintain the palmar tilt. The 2-transverse pins passing through an intact ulna act as the fulcrum for countering the deforming force of brachioradialis muscle and maintain (1)-negative ulnar variance (2)-Radial height Usual Complications of percutaneous pinning are negligible or eliminated Advantages over other surgical methods (1)-This is a patient friendly treatment as no implants outside the skin and the implant removal within 6-8 weeks. It is cost effective also. (2)-the patient can do some personal works including writing from the 1st pop day onwards. Because of this advantage 5 of my patients completed their university examination from the 2nd pop day onwards (3)-No joint stiffness as no implant to interfere the RCJ. (4)-RSD is negligible. (5)-Early return to the original work due to the early consolidation of the fracture callus within 3-months.