CASE STUDY.

NEWCLIP-TECHNICS

Dr Prieur
DU PLESSIS

XPERT WRIST 2.4:

Management of a comminuted distal radius fracture with a dual approach fixation : volar and dorsal locking (double-locked) with the k-lock.

Physician profile.

Dr. Prieur DU PLESSIS

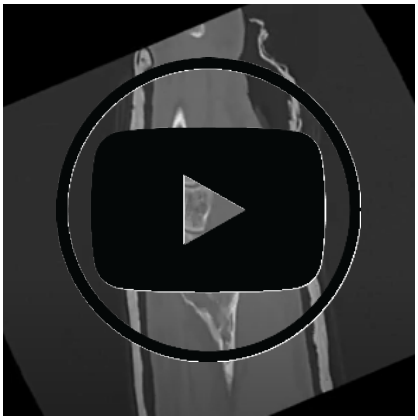
Traumatologist surgeon, Wairau Hospital, Blenheim, New Zealand

Patient history.

The patient is a woman in her late seventies, highly active for her age, with a normal weight and a mild hypertension, who suffered an intra-articular comminuted distal radius fracture caused by a fall from her e-bike.

Before deciding which treatment was the best for this lady given this patients's level of activity and function all options for management of this fracture were considered. This included conservative management with casting or manipulation and K-wires. Subsequently, based on CT scans and 3D reconstructions, an open reduction internal fixation was selected. The chosen construct provides stability for early mobilization and hand therapy, aiming to optimize functional recovery and minimize the need for immobilization and assistance in daily activities.

Pre-op lateral x-ray



Click on the image to watch pre-op CT-scan video

Surgical treatment.

Firstly a volar approach was made and an initial reduction was done and held with temporary K-wires. A volar plate was then placed as a buttress and stabilizing the volar fragments. Then a dorsal approach is made between the 3rd and 4th dorsal compartments (the dissection under the 4th compartment was done subperiosteally). The shallow dorsal fragments were reduced.

Often the crucial instability and displacement is in the ulnar column with unstable dorsal lunate fossa fragments. This also often involves the sigmoid fossa of the DRUJ. A K-lock (a special locked wire) was then advanced through the chosen volar plate hole to exit through (and capture) the dorsal fragments.

A small dorsal plate was then placed with the distal hole over the wire in order to have a dual-plating construct. A compression screw was then placed in the oblong hole. Due to the buttress effect of the dorsal compression screw, control is gained of the ulnar column. A clamp could be used to compress the "sandwich construct" if required prior to locking the K-lock dorsally at first and volarly second. Before locking the k-lock, the wire can be used as a joystick to fine tune reduction of palmar tilt.

The defect resulting from reducing the fragments and caused by the comminution was filled with a bone graft substitute.

Final x-rays

Post-operative follow-up.

No cast was applied, only a bandage and a removable splint. The patient was encouraged to move the hand and wrist as much as possible and to use the splint only for driving or engaging in a heavier activity. Almost full light use was encouraged but heavy loading was limited initially. Within the first week, the patient began hand therapy.

The patient was delighted to be able to function independently from immediately post-op. Her pain was lower after surgery compared to before and resolved completely within days. She drove her car in the 2nd week post-surgery and did not limit her normal daily activity for living. You will find below, a video and a X-ray taken at 4 weeks post-surgery.

The patient had her bone well consolidated 6 weeks after the surgery.

Click on the image to watch the video

X-ray -
4 weeks post surgery

Physician conclusions.

This technique of managing comminuted fractures with a double locked wire was described in a recent publication in OTAI. We have treated over 35 cases with this technique, and they have had similar outcomes in all of these severely comminuted fractures.

The K-lock is an extremely versatile fragment specific adjunct to the Xpert wrist set and locking the wire in both plates creates a strong load bearing and load sharing construct allowing for confident early mobilization in these, sometimes, catastrophic fractures.

This set and technique is unique to Newclip Technics.

newcliptechnics.com

Manufacturer : Newclip Technics - Case Study EN - Xpert Wrist 2.4 - ED2- 06/2025 - Medical device EC: class IIb – CE1639 SGS BE - US Class: II
Results from any case studies reported in this presentation may not be predictive of results in other cases.
Read labelling and instructions before the use of Newclip Technics medical devices.These products must be handled and/or implanted by trained and qualified staff who have read the instructions before use.