NEWCLIP TECHNICS

CASE STUDY

DISTAL RADIUS FRACTURE: MIPO OSTEOSYNTHESIS BY ANTERIOR RADIUS PLATING

PHYSICIAN PROFILE

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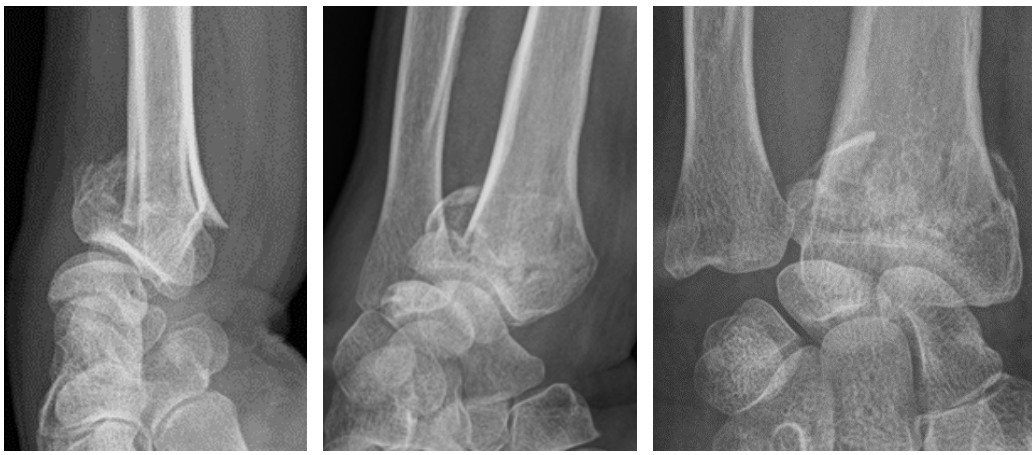
PATIENT HISTORY

The patient is a woman in her late sixties (with osteoporosis comorbidity factor), mostly active for her age (yoga, hiking, biking and swimming), with a normal weight, who suffered an AO C1.2 distal radius fracture. It has been chosen to do an anterior plating osteosynthesis as it is the gold standard for this type of radius distal fracture. The patient had never been operated before this surgery.



Pre-op x-rays

SURGICAL TREATMENT

In order to choose the right type and size of plate, the fracture fragments were assessed by measuring the width of the radius on the frontal X-ray. Given the size of the radius and the weight of the patient, the narrow size 1 volar plate of the Xpert Wrist 2.4 range was chosen.

The patient was operated in delayed emergency (4 days after the trauma), as outpatient surgery, under locoregional anesthesia. The indication was a distal radius fracture osteosynthesis, using MIPO (Minimally Invasive Plate Osteosynthesis). For our minimally invasive approach, a 15 mm line was drawn on the lateral aspect of the FCR tendon, about 20 mm proximally to the tip of the radial styloid. The pronator quadratus was cut transversally and elevated at its distal aspect using a periosteal-elevator, preserving its ulnar and radial insertions.

The anatomical volar locking plate was prepared with four aiming guides and a specific jig at its distal part. The plate was inserted by its proximal part under the pronator quadratus, then the distal part was inserted on its lateral side first, and on its medial side afterwards, ensuring the absence of interposition of noble elements between the plate and the radial epiphysis (flexor tendons in particular) and especially the flexor pollicis longus.

The plate was positioned a bit proximally to the “watershed line” and secured temporarily to the radial epiphysis using two 1.8 mm K-wires : one through the most medial aiming guide and through the most lateral one afterwards. The fluoroscopy ensured the good positioning of the plate.

This step had been repeated until an optimal positioning of the plate was obtained followed by a good reduction on the articulation.

The screws were then inserted: first, the two most distal screws and then the screws replacing the pins. The proximal part of the plate was exposed by maximum flexion of the wrist to take advantage of skin elasticity, and in order to install the last two proximal screws.

Finally, the skin was closed by an intradermal continuous suture of absorbable 3/0 suture thread.

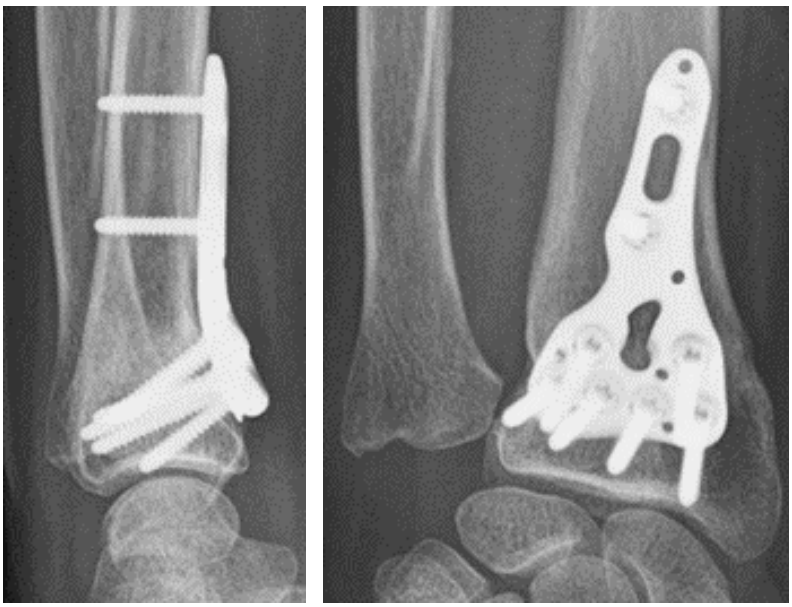
POST-OPERATIVE FOLLOW-UP

After her operation, the patient was not immobilized at all, and was encouraged to use her upper-limb, and work on her wrist mobility, without strength for the first 6 weeks, as soon as the effects of the anesthesia had worn off.

At the 2-weeks post-operative appointment, the dressing was removed and the patient started massaging the scar, intensifying her self-rehabilitation. The X-ray showed there was no secondary displacement at 2 weeks post-operative and that the bone union was fully completed at 6 weeks post-operative. The wrist mobility, grip strength (Jamar), QuickDASH, PSEQ, pain, aspect of the scar were evaluated during the 6 weeks and 3 months follow-ups. During the last appointment (3 months post-surgery), the pain level was 0/10 and the patient had gone back to all her activities. Her QuickDASH was 0/100 and her PSEQ 6/6. In addition, her scar was soft and she had no other complaint.

Wrist	Flexion (°)	Extension (°)	Pronation (°)	Supination (°)	Ulnar tilt (°)	Radial tilt (°)	Grip strength (kg)
Right	100	90	85	85	30	30	22
Left (comparision)	100	80	80	85	30	30	24

Wrist mobilitie's figures of the patient



3 months post-op x-rays

3 months post-op mobility

3 months post-op scar

PHYSICIAN CONCLUSIONS

The surgical treatment of this fracture allowed for a better reduction, a reduced risk of secondary displacement, and the possibility for the patient to start using her wrist immediately after the operation, thus reducing the risk of stiffness. Newclip Technics offers an external guide to help with the MIPO procedure and the insertion of the plate under the pronator quadratus muscle. The Xpert 2.4 range offers a wide choice of plates to suit patient's anatomy.

Benefits of the Newclip implants include the increased width and screw options at the distal radius metaphyseal level for fragment specific fixation, if needed. The increased width assured that there would not be any escape of the dorsal fragments that may have not been captured by the volar screw fixation. Color coding of implants and instruments along with instrument that works together without having to open multiple trays, makes the system easy to use. This system allows an easy identification by the scrub technician, who was not previously familiar with this specific system. The presence of the representative during the operation adds a certain comfort, allowing the surgeon to have additional explanations about the instrumentation.

Intended purpose : The implants of the Xpert Wrist range are intended for fixation of hand and forearm fractures, osteotomies and arthrodeses in adults.

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