Study protocol

# Fixation of distal humerus fracture

Ortho/trauma surgery

## Case description

**Patient**
Male, aged between 18 and 30 years
BMI range: 30–35

**Diagnosis**
Distal humerus fracture
AO classification: 13C3
Complete and multifragmentary articular fracture
(Figs. 1–4)

**Surgical procedure**
Fixation of distal humerus fracture: after preoperative CT imaging assessment of the fracture, an olecranon osteotomy was performed to improve surgical access. Temporary transfixation was achieved using multiple K-wires, followed by definitive fixation with precontoured plates and angular stable screws. Lastly, the olecranon osteotomy was repaired using wire cerclage.

**Benefits of CIARTIC Move**
No C-arm technologist was needed, the surgeon operated the system from within the sterile field using **Smart Control**.

With **Position Assist** it is possible to store up to 12 procedure-specific positions, making surgical workflows more efficient.

With the help of the Position Assist functionality, **collimation** can be stored individually for each position.

**3D imaging** played a vital part in confirming the success of the surgery. The dose area product was 245.75 µGy*m$^2$ and the radiation time was 198.3 seconds.

**Courtesy of**
BG Trauma Center Ludwigshafen, Germany

**System and software**
CIARTIC Move, VB10A

SIEMENS Healthineers

# Clinical images

**Fig. 1**

**Preoperative CT imaging:** displaced, multifragmentary distal humerus fracture

**Fig. 2**

**Preoperative CT imaging:** displaced distal humerus fracture

**Fig. 3**

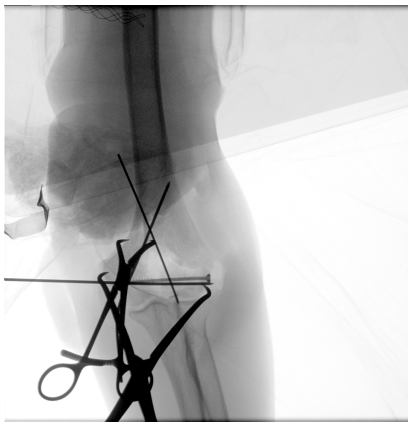

**Preoperative X-ray imaging:** displaced, multi-fragmentary distal humerus fracture on the right in anterior-posterior view

**Fig. 4**


**Preoperative X-ray imaging:** displaced, multi-fragmentary distal humerus fracture on the right in lateral view

# Clinical images

**Fig. 5**



**Intraoperative image:** repositioning of fracture and temporary fixation using Kirschner wires. Fixation of individual fragments using reduction forceps. Small fragment screw inserted from the ulnar side.

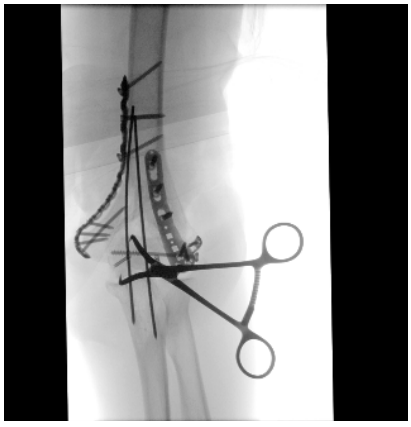
**Fig. 6**

**Intraoperative image:** insertion of radial and ulnar plates

**Fig. 7**

**Intraoperative image:** double-plate osteosynthesis with correctly positioned screws in lateral view

**Fig. 8**

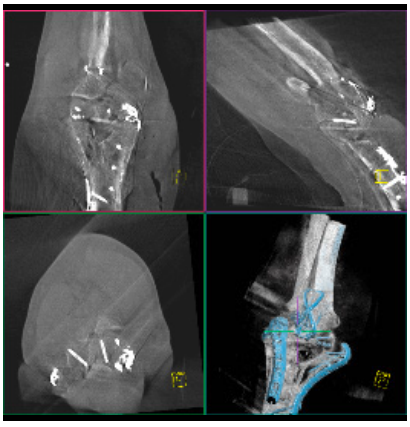


**Intraoperative image:** repositioning using reduction forceps and fixation with Kirschner wires. Subsequent fixation of olecranon using wire cerclage. Anterior-posterior view

**Fig. 9**

**Intraoperative final image:** double-plate osteosynthesis of the distal humerus with correct plate and screw positioning. Lateral view

**Fig. 10**



**Intraoperative 3D scan:** correct plate and screw positioning. Due to the confined space, a shortened orbital scan was used to enable intraoperative 3D imaging of the patient in the prone position.

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**Siemens Healthineers Headquarters**
Siemens Healthineers AG
Siemensstr. 3
91301 Forchheim, Germany
Phone: +49 9191 18-0
siemens-healthineers.com

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