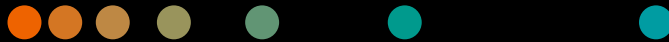


## Study protocol

# Complex panfacial comminuted fracture

Cranio-maxillofacial surgery (CMF)



## Case description

### Patient history

Elderly female, age 46-60 years, jumped from third floor. Initially the patient presented with a Glasgow Coma Scale (GCS) score of 9 and major bleeding from the nose and ears.

### Diagnosis

Complex panfacial comminuted fracture (Fig. 1)

### Surgical procedure

- Extraoral, intraoral, trans-conjunctival, and upper eyelid approach
- The fracture was repositioned and osteosynthesized with miniplates after mandibulomaxillary fixation

- The intraoperative 3D scan performed enabled visualization of all slices from three directions (sagittal, coronal, and axial view).
- The patient was examined using Cios Spin from Siemens Healthineers to confirm correct repositioning of the fracture and alignment of the bone segments.
- By performing an intraoperative 3D scan with Cios Spin (cone beam computed tomography, CBCT) the surgeon could improve the alignment by readjusting the fracture fragments after visualization. (Figs. 4-8)

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### System

Cios Spin mobile C-arm

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## Clinical images

Fig. 1



Preoperative image: CT of patient's head reconstructed in a 3D model

Fig. 2



Intraoperative cone beam CT with Cios Spin: coronal plane

Fig. 3



Intraoperative cone beam CT with Cios Spin: axial plane

Fig. 4



Intraoperative imaging: 3D view

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