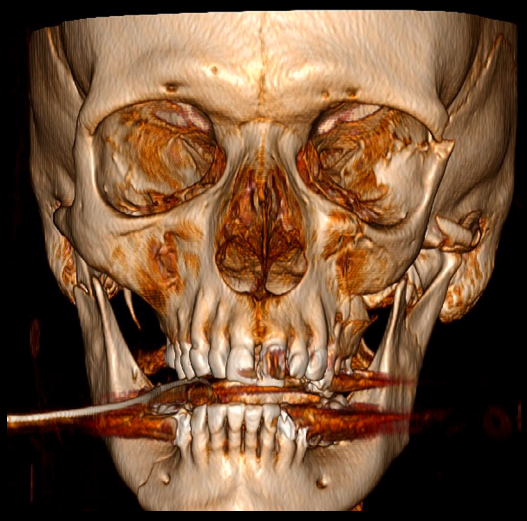
Study protocol

# Complex panfacial comminuted fracture

Cranio-maxillofacial surgery (CMF)



**System**
Cios Spin mobile C-arm

## Case description

**Patient history**
Elderly female, age 61-75 years, involved in a bike accident. Initially the patient presented with a Glasgow Coma Scale (GCS) score of 3 and a malocclusion.

**Diagnosis**
Complex panfacial comminuted fracture (Figs. 1-3)

**Surgical procedure**
Using an extraoral, intraoral, transconjunctival, and upper eyelid approach, the fracture was repositioned and osteo-synthesized with miniplates after mandibulomaxillary fixation.

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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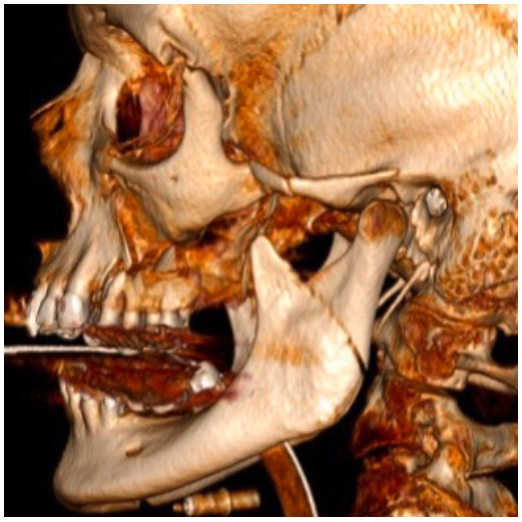
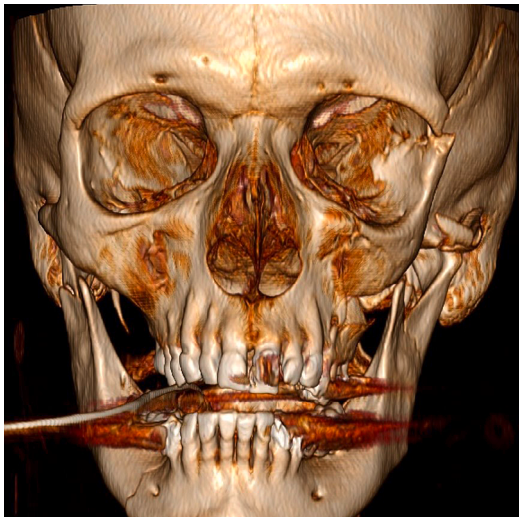
# Clinical images

**Fig. 1**



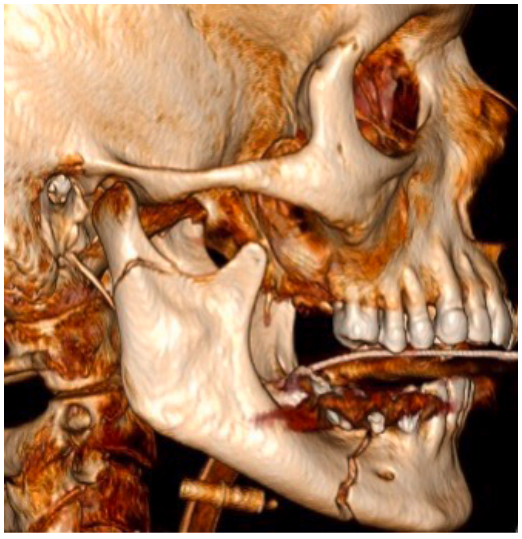
Preoperative image: CT of patient's head reconstructed in a 3D model

**Fig. 2**



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

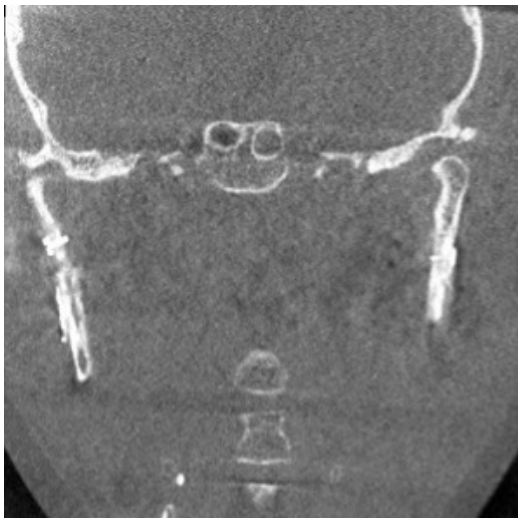
**Fig. 3**



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

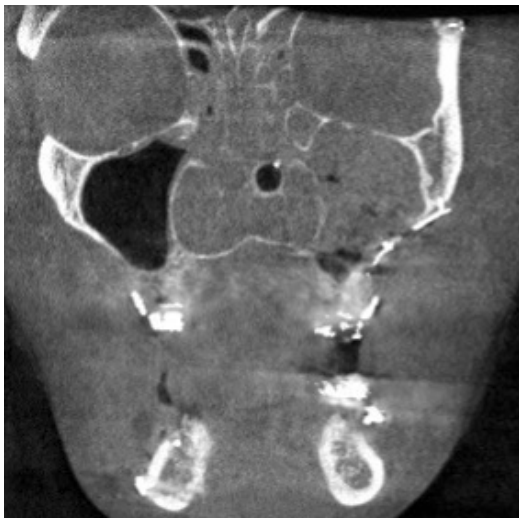
# Clinical images

**Fig. 4**



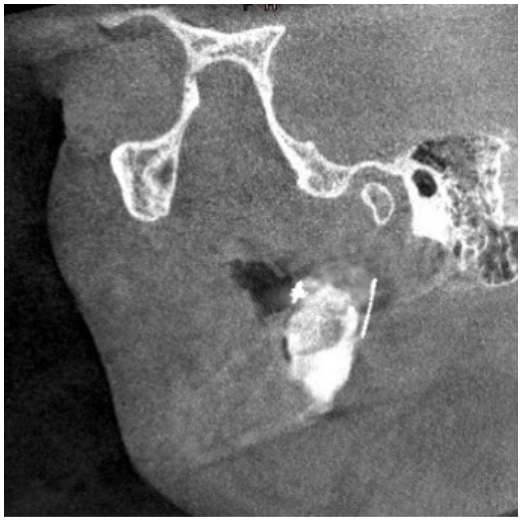
Intraoperative cone beam CT with Cios Spin: coronal plane

**Fig. 5**



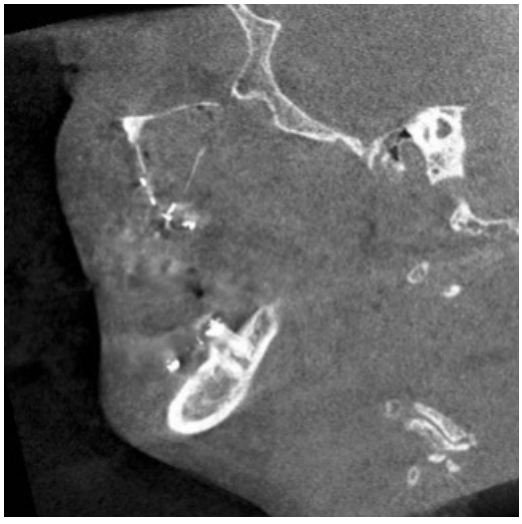
Intraoperative cone beam CT with Cios Spin: coronal plane

**Fig. 6**



Intraoperative imaging: sagittal view

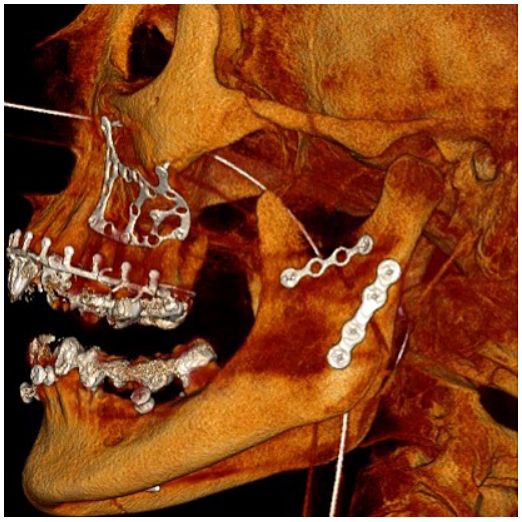
**Fig. 7**



Intraoperative imaging: sagittal view

# Clinical images

**Fig. 8**

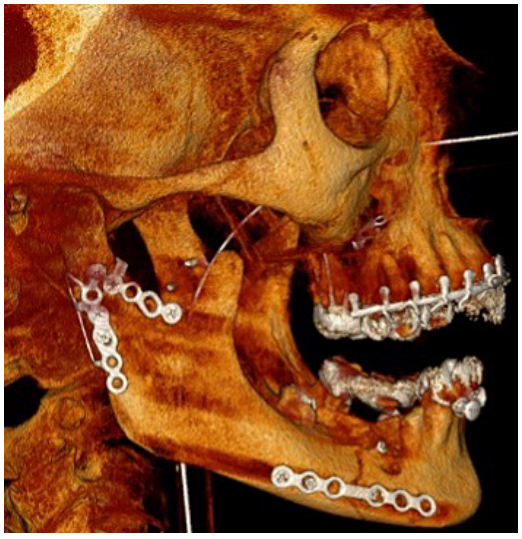


Intraoperative imaging: 3D view

**Fig. 9**

Intraoperative imaging: 3D view

**Fig. 10**



Intraoperative imaging: 3D view

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