

Cranioplasty

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2024.03.08

Indications

- ▶ All patients who have undergone craniectomy for whatever reason and are fit for a cranioplasty surgery
- ▶ Restoration of normal blood flow, CSF flow, and improvement of cognitive functionality
- ▶ Protection of brain
- ▶ Cosmetic reasons

Modes

- ▶ **Autologous bone graft**
 - ▶ Storage in vivo (subcutaneously in the abdomen)
 - ▶ Storage ex vivo -70 -80 degrees of Celsius
 - ▶ Storage ex vivo in titanium containers and nutritious fluids (not used)
- ▶ Allograft ?
- ▶ **Titanium mesh**
- ▶ **3D printed assisted flaps**
- ▶ **Free hand cement formation** (PMMA, hydroxy apatite)
- ▶ Endoscopic Cranioplasty?

Timing of surgery

- ▶ 3-4 weeks after craniectomy if patient is fit for surgery
- ▶ In general, as soon as possible if patient is fit for the restoration of the cognitive function and a better and faster rehab and recovery
- ▶ If hydrocephalus present, VPS and cranioplasty is preferred compared to a stage approach

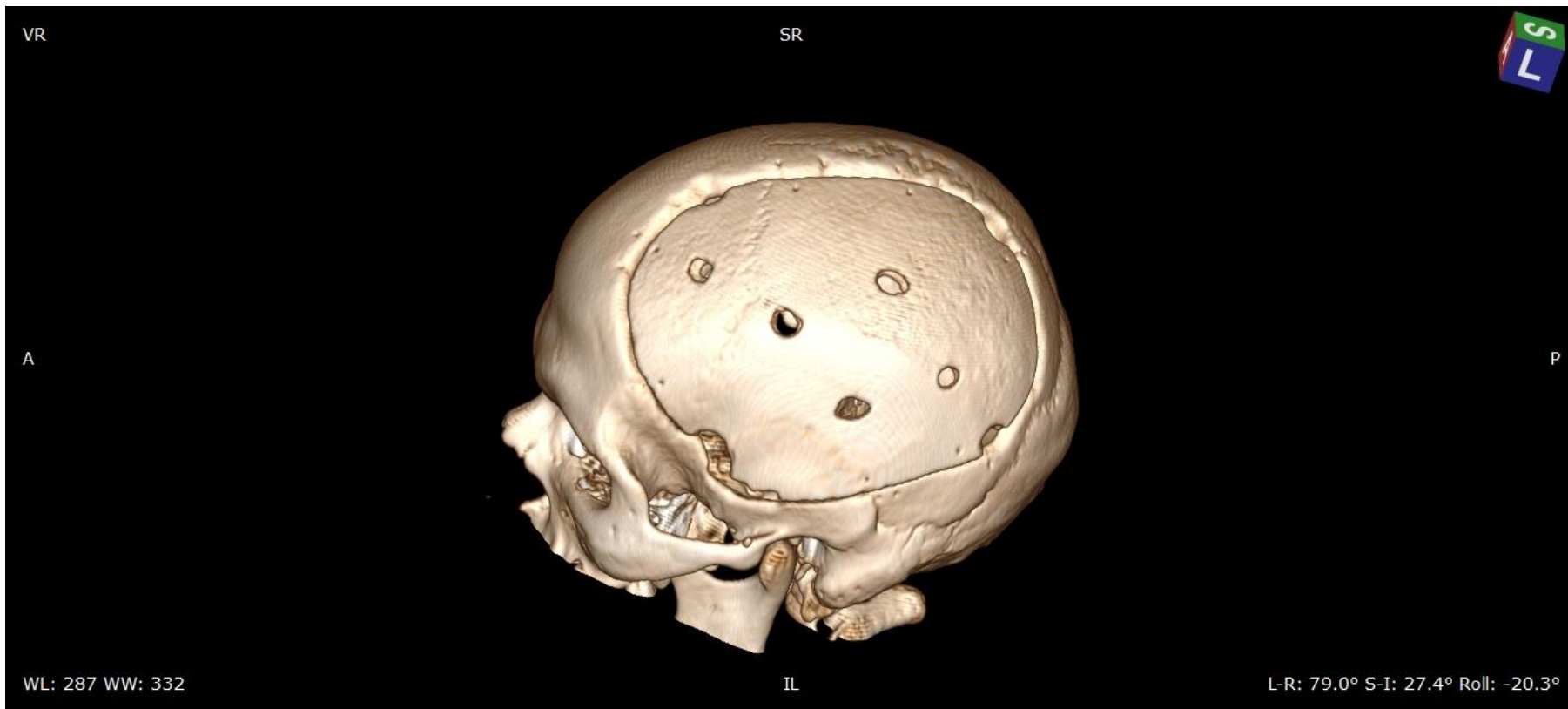
Complications

- ▶ Rebleeds
- ▶ Infections
- ▶ Bone reabsorption
- ▶ Wound healing complications
- ▶ Graft migration

Case1

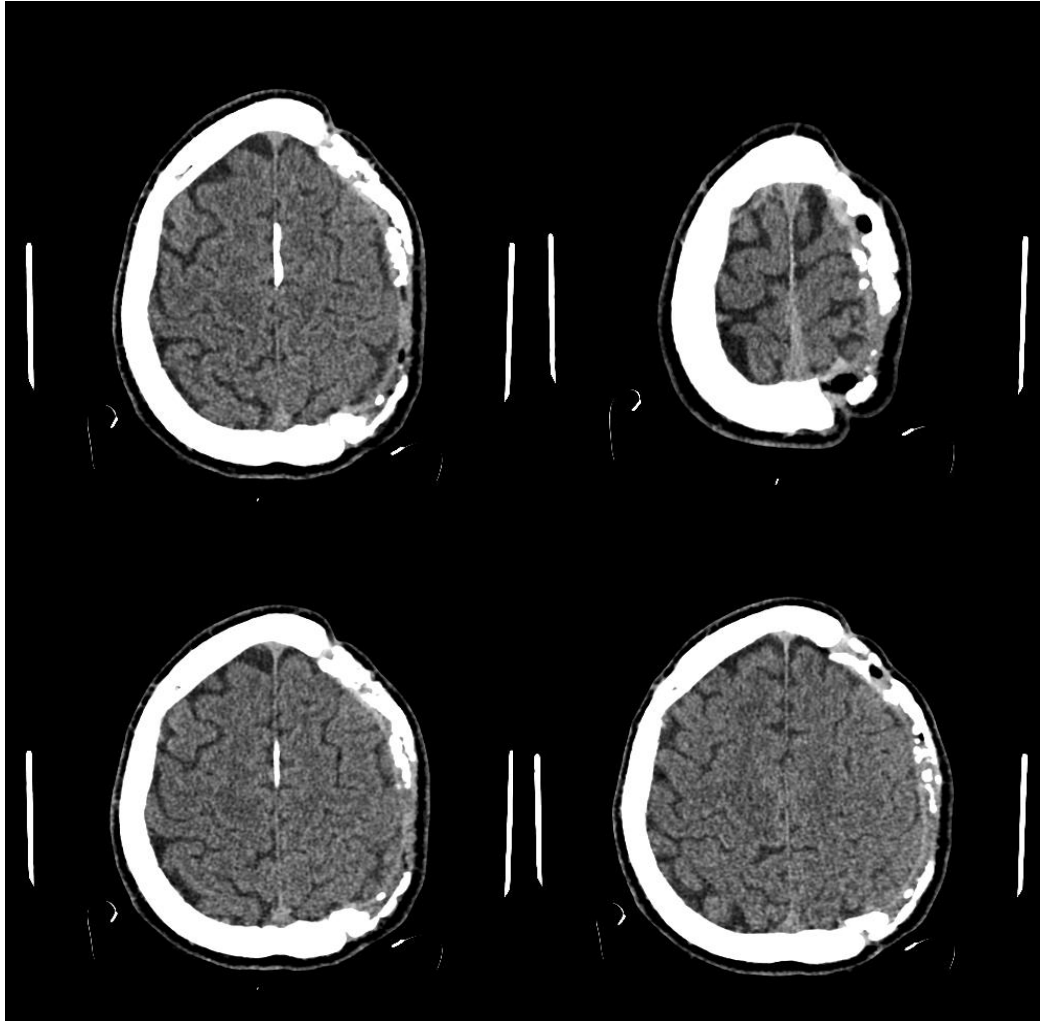


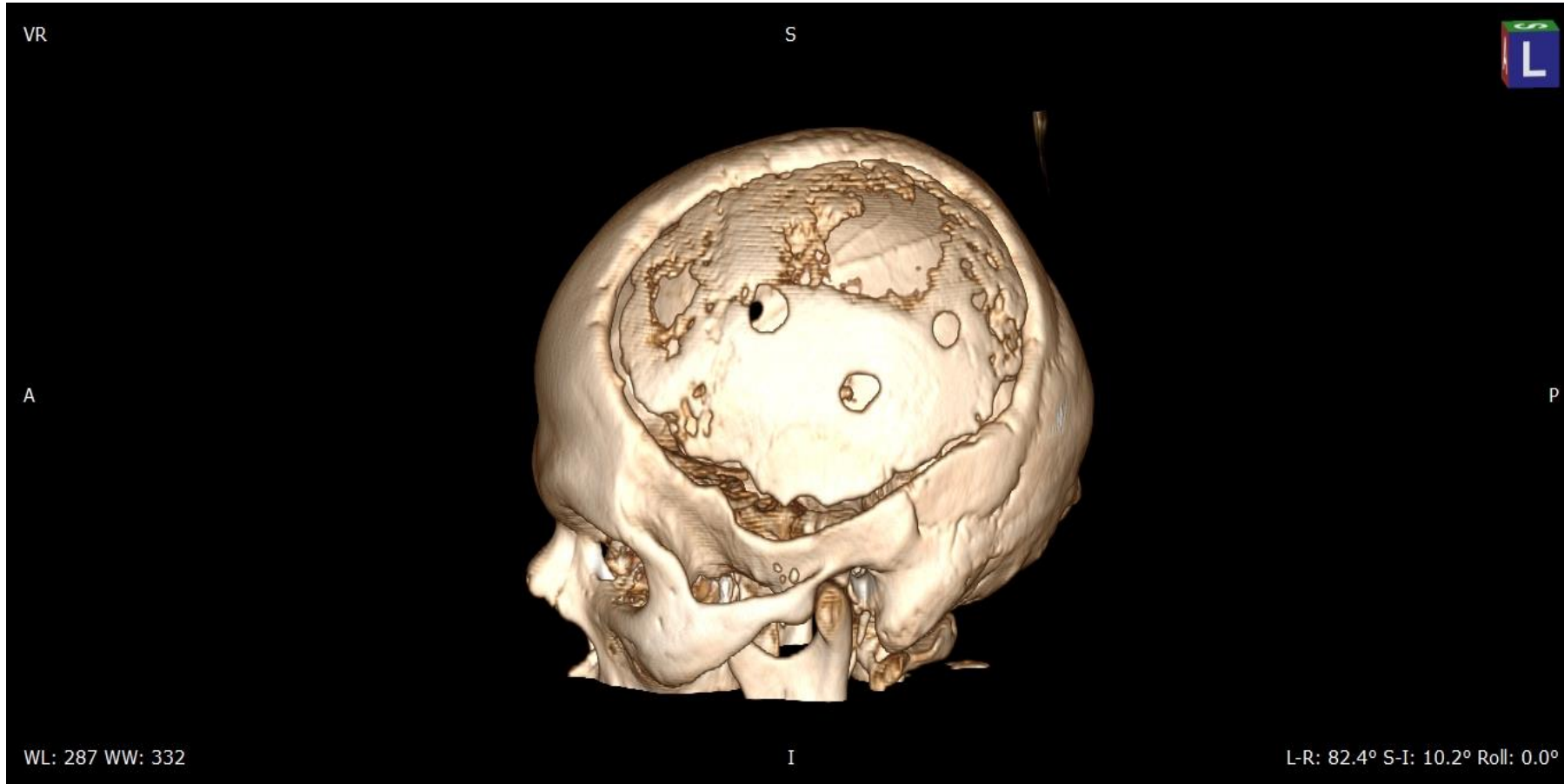






Bone Resorption

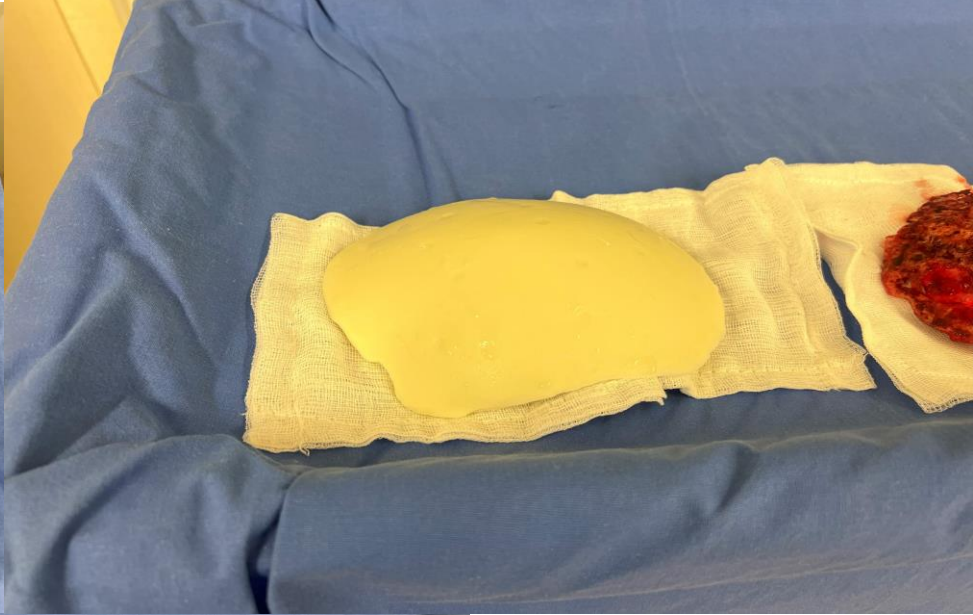
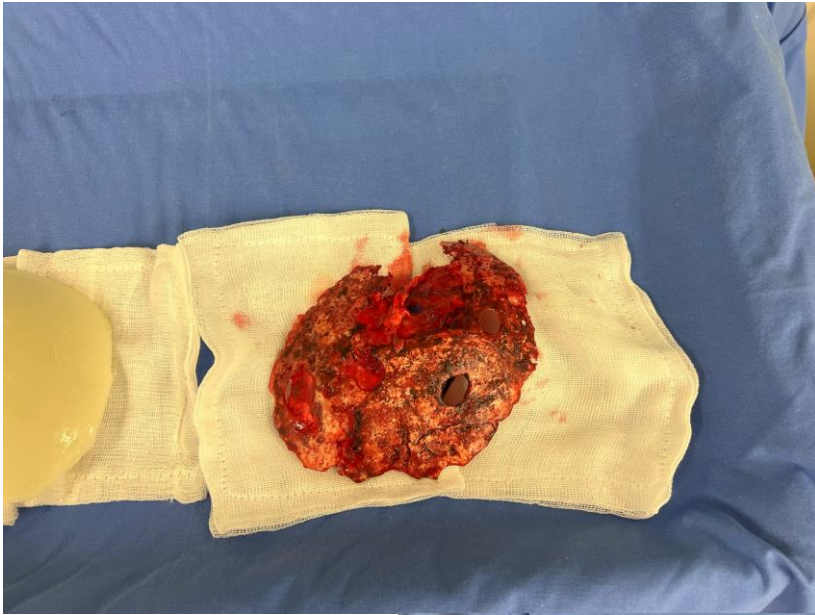


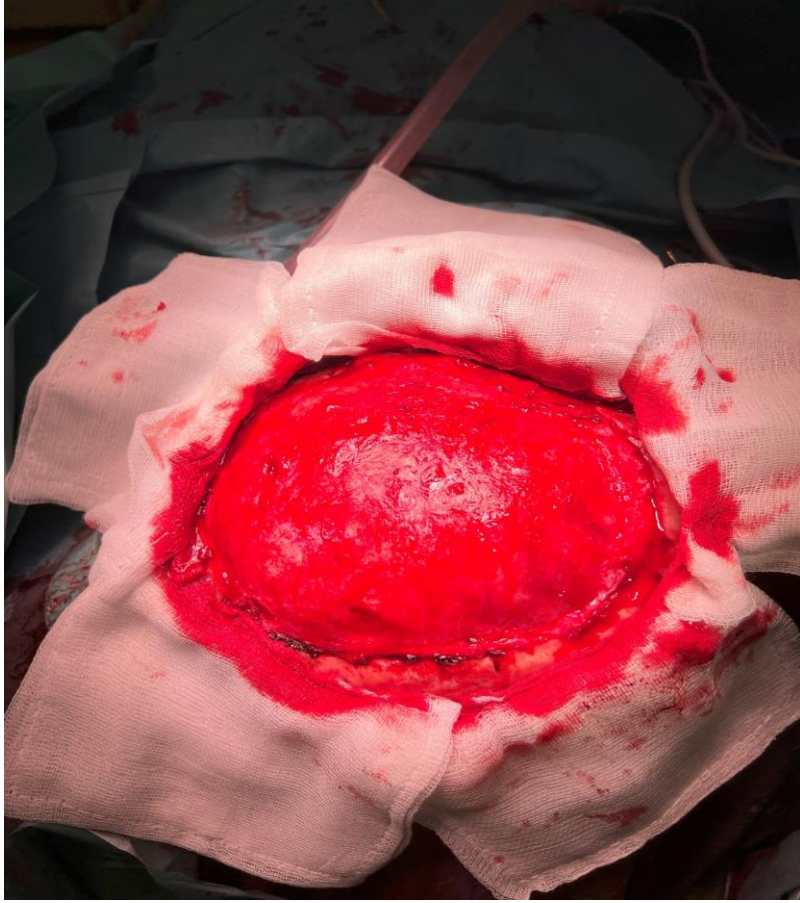


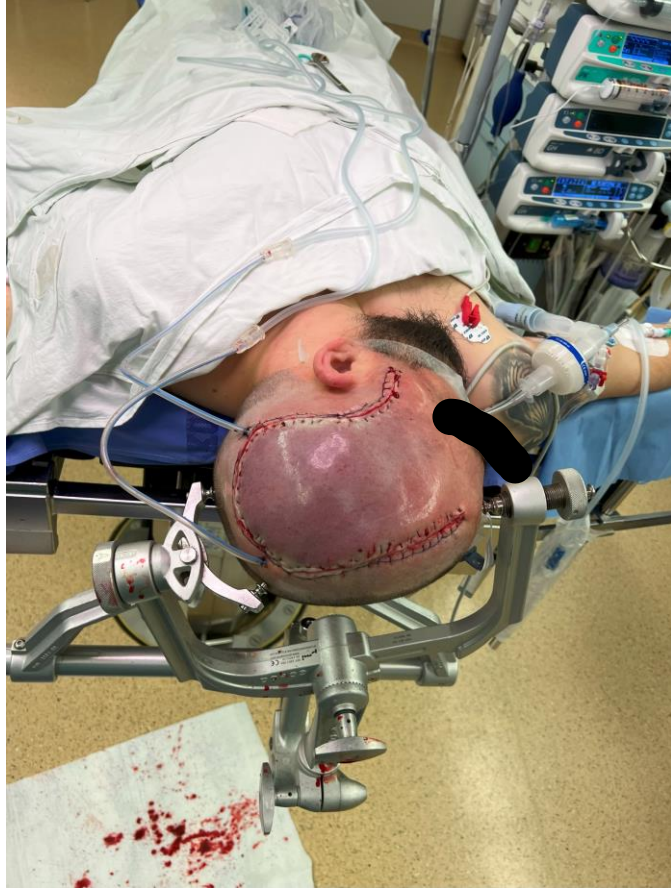


3D Printing



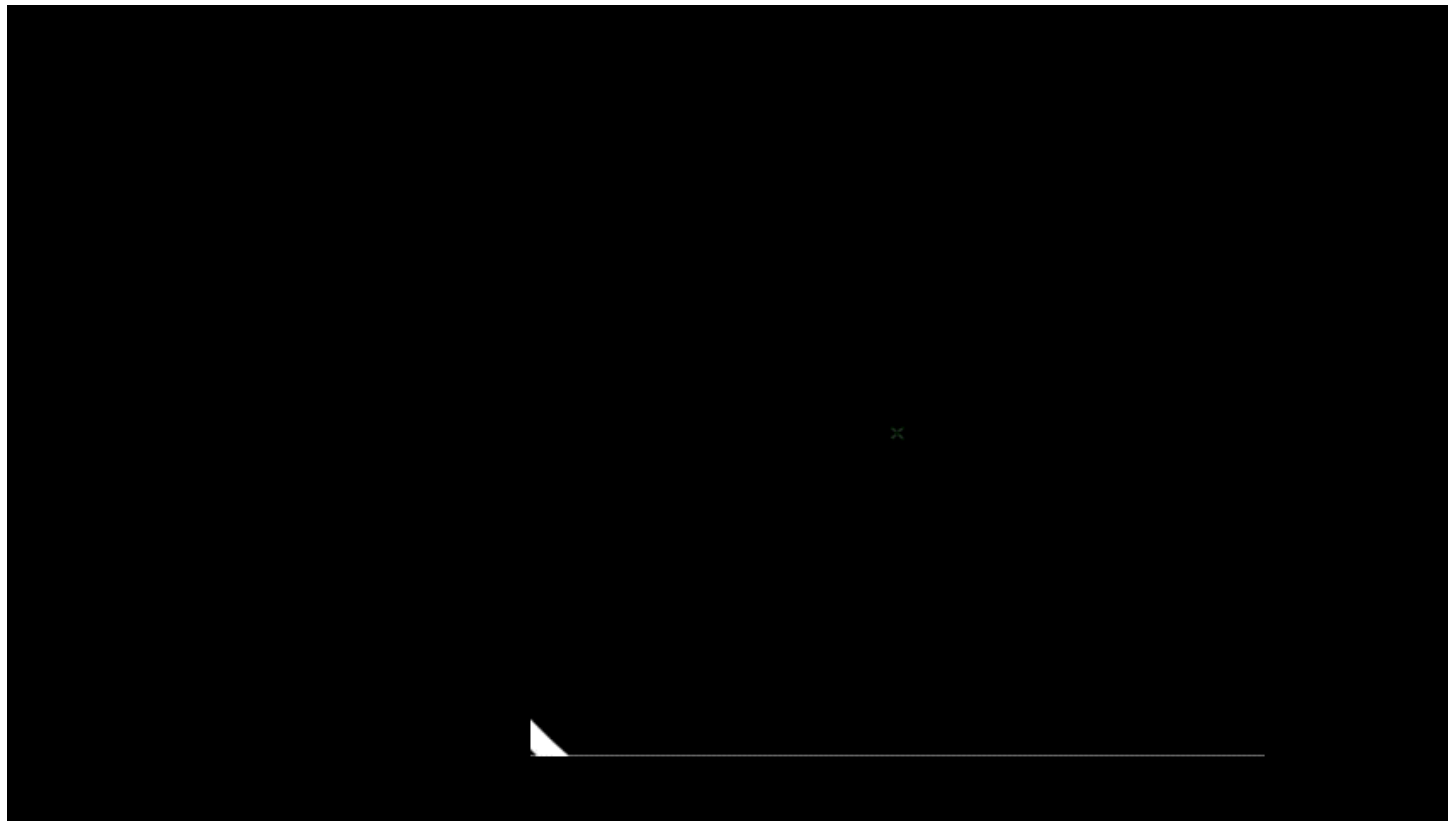




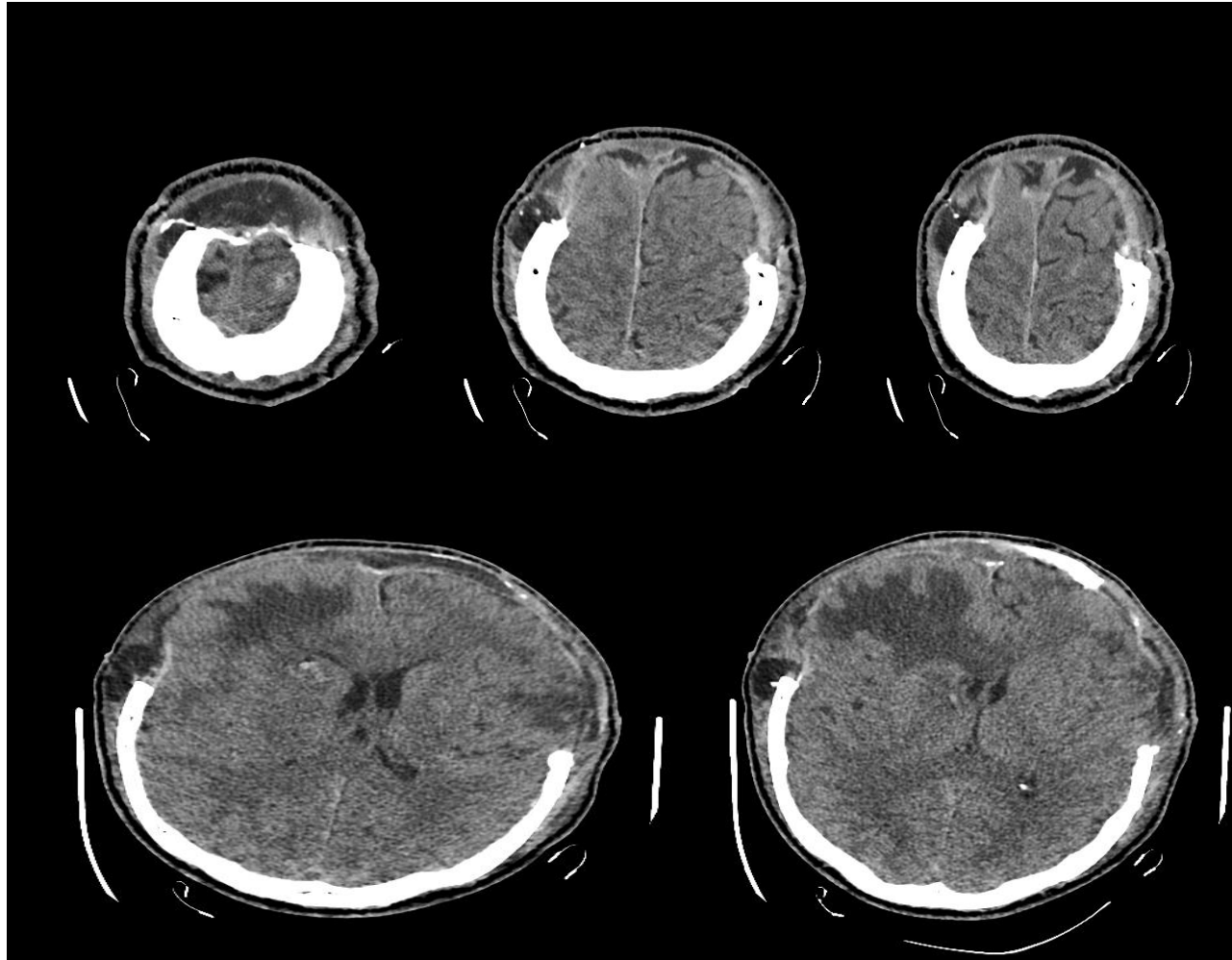


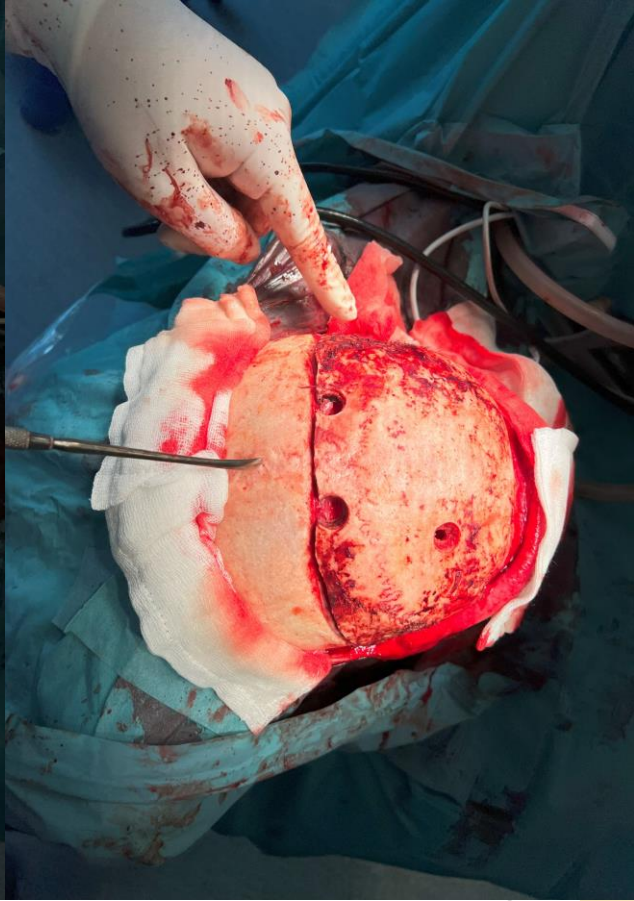
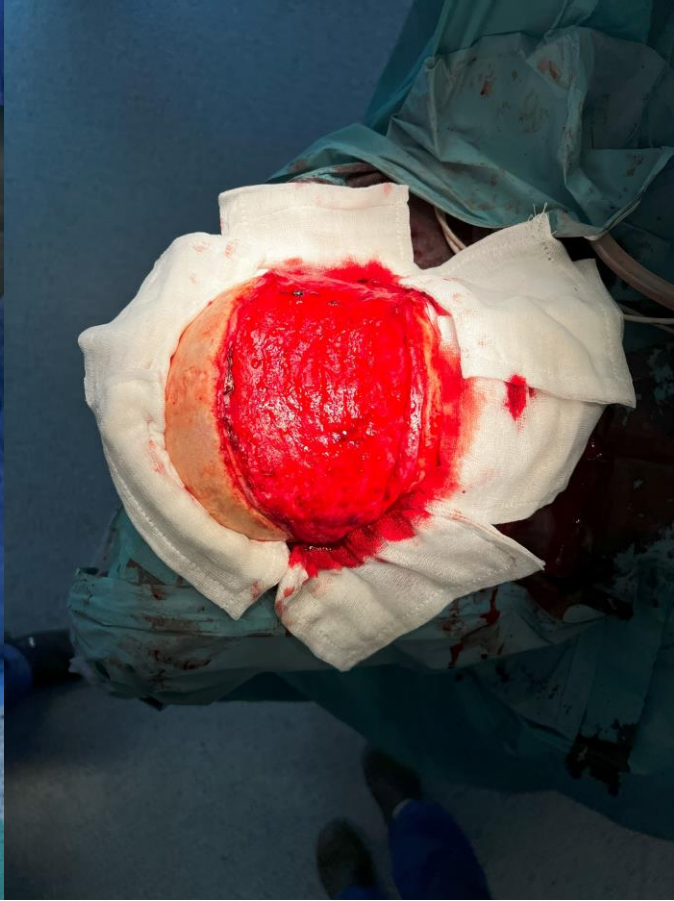
Case 2

Video



Case 3









Disclaimer

- ▶ All cases are courtesy of Dr. Tahaei Arad and University of Szeged, Department Of Neurosurgery

Thank you for your Attention