

DVT-basierte Navigation in der MKG-Chirurgie

DVT based navigation in Cranio-maxillofacial Surgery

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The digital volume tomography (DVT) provides low radiation dose imaging of hard tissue structures. Compared to conventional CT scans the irradiation dose is five times less. The preferable use of this imaging technique is preprosthetic and preimplantologic diagnostics. We expanded the range of indications to facial trauma. Especially the use of virtual models in preoperative planning and intraoperative navigation achieves predictable results in complex periorbital reconstruction. For the first time the use of DVT data sets allowed computer assisted surgery without loss of quality.

Alltogether 5 navigational assisted orbital reconstructions have been performed. The procedures ranged from orbital floor reconstruction to osteotomies of the lateral midface. Using non invasive dental splint referencing the intraoperative navigation was performed with virtual templates, which have been created preoperatively. Mirroring and modifying of DVT data sets had been the base for the virtual model used intraoperatively.

The use of DVT in computer assisted surgery offers a low radiation dose alternative to CT scans. Bony reconstructions and bone surgery can be performed with the same quality. DVT based computer assisted surgery will decrease the need for CT data in oral implantology, traumatology and orthognathic surgery in the nearest future. Is there a need for soft tissue imaging, the CT scan will still be the first choice.