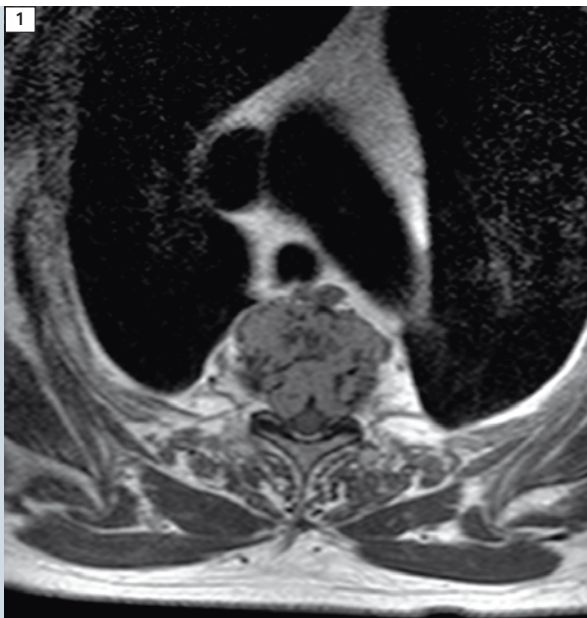
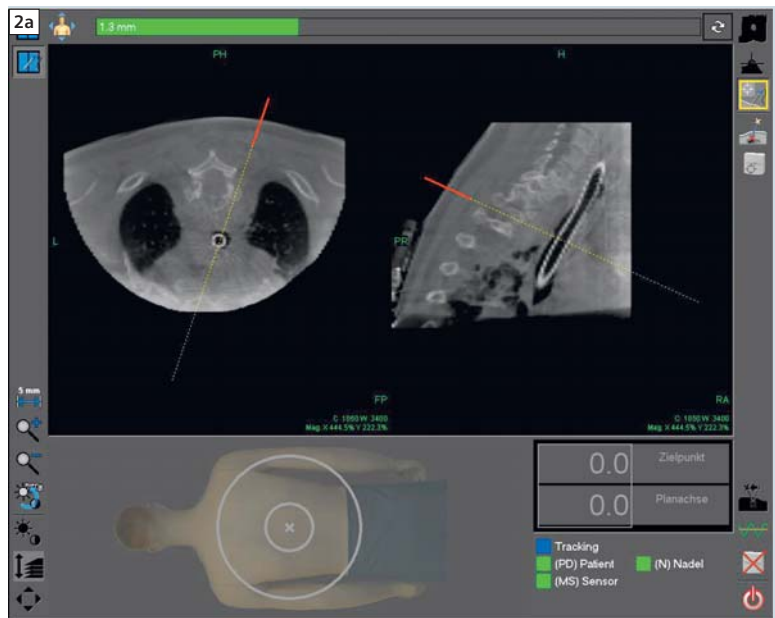


# Radiofrequency Ablation of a Large Vertebral Metastasis Using iGuide CAPP Electromagnetic Needle Guidance

Prof. Martin Skalej, MD, Oliver Beuing, MD, Anja Lenz, MD  
Department of Neuroradiology, University of Magdeburg, Germany



**1** T1-weighted image without gadolinium enhancement demonstrates large metastasis with intraspinal growth and extension to the lungs, the aortic arch, the trachea and the esophagus.



**2 a+b** The electromagnetic tracking shows progression of the needle into the soft tissue mass.

## Patient history

68-year-old female with known renal cell carcinoma first diagnosed in 1996 with worsening pain in the upper thoracic spine. Patient showed discrete paresis of the left arm, but no other neurologic deficit.

## Pre-treatment Imaging

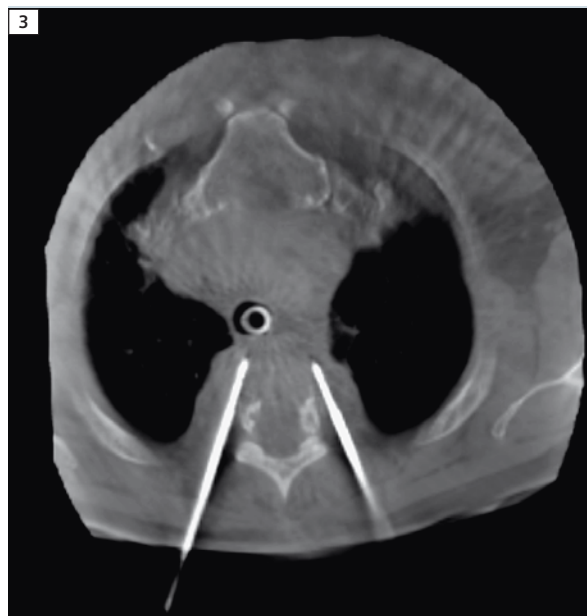
MRI of the spine revealed a large metastasis with destruction of the second thoracic vertebra and extensive intraspi-

nal and paravertebral infiltration and slight compression of the myelon (Fig 1). The lesion extends to the trachea and the aortic arch ventrally and the lungs laterally. No other spinal metastases were detected.

## Treatment

The patient was considered inoperable concerning tumor resection and vertebral body replacement. Thus radiofre-

quency ablation and subsequent radiation therapy was planned. For radiofrequency ablation, first imaging with *syngo* DynaCT was performed. The electromagnetic tracking system *iGuide CAPP*, which superimposes the puncture needle on the *syngo* DynaCT data set, was used for precise placement (Fig. 2 a + b). Then the electrodes were introduced through the puncture needle. The final position achieved



**3** Documentation of the final position of the electrodes with *syngo DynaCT*. The image was reconstructed at a *syngo X Workplace*.

according to the electromagnetic tracking system was confirmed by another *syngo DynaCT* run (Fig. 3) and the ablation was conducted with a total energy of 40 kJ. The patient tolerated the intervention without any complication, pain improved immediately after the procedure.

### Comments

The electromagnetic tracking system in combination with *syngo DynaCT* allows precise placement of electrodes or biopsy devices even in regions that are difficult to evaluate with fluoroscopy or where critical anatomic structures not visible with fluoroscopy alone must be avoided. The tracking system provides excellent depiction of the progression of the needles and anatomic detail is provided by *syngo DynaCT*. Also no fur-

ther imaging is necessary during the intervention. X-ray exposure to the examiners is reduced when compared to interventions performed under CT-fluoroscopy guidance. If wanted, a control scan can be performed to document the final position.

### Contact

vera.juennemann@siemens.com