

# **Einsatz der Navigation bei der ventralen Resektion und Stabilisierung von Wirbelsäulenmetastasen und Spondylodiszitiden**

## **Aspects of navigation in anterior spinal surgery of malignant and inflammatory thoracolumbar metastases**

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### **Objective**

Image guided spine surgery is reported to be useful for different instrumentation techniques and minimal invasive procedures in the treatment of spinal fractures. Patients with spondylodiscitis or vertebral metastases have not only a local problem of the spine. In this group the whole organism is involved in the disease, the vital functions and defence mechanisms are decreased. Especially these patients could benefit of less invasive technique. This analysis was performed to assess the clinical feasibility of image guidance for minimal invasive decompression and instrumentation of malignant and inflammatory regions of the spine.

### **Material and Methods**

All patients with image guided surgery for spinal malignant and inflammatory metastases were recorded prospectively. The BrainLab®VectorVision® (5.0) system allowed computed tomography based navigation for endoscopically assisted minimal invasive anterior and combined procedures.

### **Results**

From May 2002 until March 2004 7 patients were recruited. In 4 cases spondylodiscitis and in 3 cases malignant spinal metastases were operated with image guided assistance. Isolated anterior minimal invasive approach was used in 4 patients. In 3 cases additional dorsal instrumentation and decompression was performed. With computed tomography based navigation both exact resection of the pathological deformed vertebral and disc tissue as well as anterior instrumentation was possible by minimal invasive approach.

#### Discussion

Intraoperative navigation has become increasingly accepted and practised in posterior instrumentation of thoracolumbar fractures. There are few data available for spinal navigation in tumor surgery. Our first experiences in navigated surgery of inflammatory and malignant spinal metastases demonstrate that exact resection is possible using minimal invasive approaches. In addition, the reduced surgical trauma of this procedure allows a faster postoperative mobilisation.