Posterior MIS Treatment of Thoraco-lumbar Spinal Neoplasms
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Introduction: The treatment of patients with neoplasms affecting the axial spine, both benign and malignant, can be approached in a variety of ways, each with its own risks and benefits. In an effort to reduce patient morbidity, blood loss and hospital length of stay, we have employed several posterior less-invasive techniques to decompress and stabilize the thoraco-lumbar spine in patients with a variety of spinal neoplasms.

Methods: The author has retrospectively reviewed the charts of 28 patients treated with one of three posterior less invasive methods (MIS) of decompression including: micro-tubular decompressive laminectomy and facetectomy, micro-tubular transpedicular partial or complete corpectomy, or micro-tubular costo-transverse partial or complete corpectomy. In these patients anterior column reconstruction was performed, where necessary, using either Polymethyl-methacrylate (PMMA) or VBR cage insertion. Three-column fixation was performed using percutaneous pedicle screw insertion and augmented with PMMA where indicated. Results were compared with a separate cohort of patients treated with “open” posterior decompression and stabilization procedures.

Results: The mean age of the MIS group was 54 years as compared to 47.5 years of the “open” group. A variety of disparate pathologies were treated including benign (schwannoma, neurofibroma, meningioma, giant cell tumor), and malignant (breast, prostate, GI, renal cell, and thyroid metastases, multiple myeloma and sarcoma) tumors. All lesions resulted in preoperative pain and neurological deficits. There were no cases of new postoperative neurological deficits; deficit stabilization or improvement was seen in all patients. There was one case of hardware failure in each group, requiring reoperation within one month postoperatively. The mean postoperative length of stay was significantly less in the MIS group (3 days) as compared to the “open” group (9.4 days). Additionally, mean blood loss was significantly less in the MIS as compared to “open” group, 736 cc’s vs. 2500 cc’s, respectively.

Conclusions: Posterior less invasive techniques of decompression and stabilization of the thoraco-lumbar spine should be considered as a treatment option for patients with both benign and malignant neoplasms involving the spine. Length of hospitalization and blood loss is significantly less in the MIS as compared to open group.