ACCURAY

CASE STUDY

C5 MALIGNANT PERIPHERAL NERVE SHEATH TUMOR

CYBERKNIFE
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DEMOGRAPHICS	
Sex:	F
Age:	56
Histology:	Malignant peripheral nerve sheath tumor (MPNST)

CLINICAL HISTORY	
Referred by:	Sheba Medical Center, Israel
Past Medical History:	Surgery, Radiotherapy, Chemotherapy

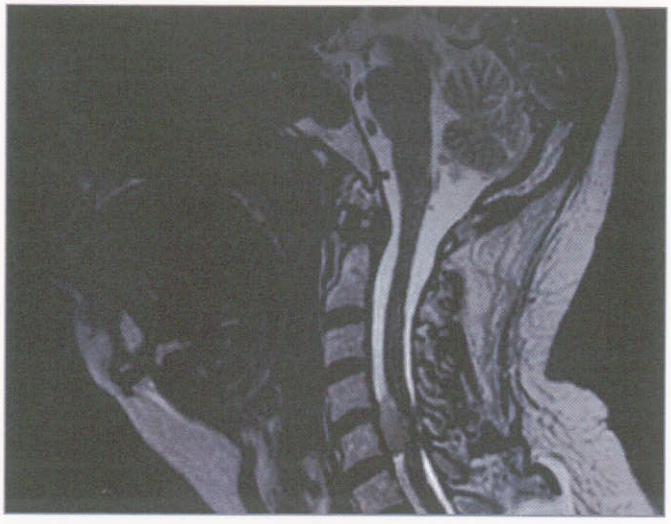
Case History

Malignant peripheral nerve sheath tumors (MPNST) are rare spindle-cell sarcomas derived from Schwann cells or pluripotent cells of the neural crest. The estimated incidence of MPNST in patients with Neurofibromatosis Type 1 (NF1) is 2-5% compared with 0.001% in the general population. MPNST originate from peripheral nerve root trunks, extremities, and the head and neck region. The tumor can be located intraspinally, foraminally, and extend extraforaminally. These tumors pose specific therapeutic challenges as they recur locally after surgery. Adjuvant conventional radiation therapy improves survival rate or local control in some series but not in others.[1,2,3]

We present here a rare case of a recurrent spinal non-NF1 MPNST treated by spinal radiosurgery. This 56-year-old female patient was transferred for progressive gait disturbances accompanied by severe neck pain. She was on morphine medication for 8 weeks. Incomplete surgery for a cervical non-NF1 MPNST at the level of C5 was performed 6 months prior to admission. After surgery the patient underwent a course of conventional fractionated radiotherapy (40 Gy) covering the whole spinal canal. Magnetic resonance imaging (MRI) of the cervical spine on admission revealed a large contrast enhancing extradural mass compressing the ventral spinal cord at C5.

CyberKnife® Treatment Rationale

There were no further treatment possibilities as surgery, conventional radiation therapy and chemotherapy were already attempted without preventing tumor growth. It was hoped that additional robotic radiosurgery targeting only the tumor mass could help to prevent further tumor progression and to reduce cervical pain.



T2-weighted pre-treatment MRI scan. The lesion is clearly visualized at C5 significantly compressing the ventral aspect of the cervical spinal cord resulting in severe neck pain.