

Spinal Cord ependymomas: Neurological Impact on Quality of life

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Case Study:

50-year-old with several years history of vague symptoms that progressed to: occipital ridge pain, intermittent numbness and tingling in the extremities, electric storm sensation throughout the extremities, difficulty ambulating on uneven surfaces & unable to sense ability to void.

Objectives:

1. Review the prevalence of spinal Ependymomas
2. Describe the common neurological symptoms
3. Review common treatments
4. Discuss the role of the Advanced Practice Provider

Prevalence:

- ✓ Rare tumors of central nervous system (CNS)
- ✓ 60% of all intramedullary tumors in adults
- ✓ Mostly benign
- ✓ Slow growing
- ✓ Common in 4th and 5th decade of life

Classification:

- ❖ Grade I benign (myxopapillary)
- ❖ Grade II semi- benign “classic” (ependymoma, grade 2)
- ❖ Grade III the most infiltrative & malignant type (anaplastic ependymoma)

Symptoms:

- Back pain- most frequently reported
- Radicular or local pain
- Motor weakness
- Numbness and/or tingling
- Sphincter or sexual dysfunction
- Compression of spinal cord in some cases may led to severe disability
- Cervical spine: spasticity, gait ataxia, sensory loss, paresthesia
- Lumbar spine: incontinence, radicular back pain, leg pain, asymmetric weakness
- Other symptoms- tumors location dependent

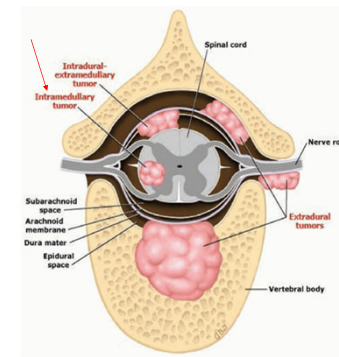
Treatments:

- ❑ Surgery- Goal standard treatment goal of gross total resection (GTR) Although advocated, the risk of permanent disability is approximately between 3-50%.
- ❑ Radiation therapy when GTR is not achieved
- ❑ Intrathecal chemotherapy for recurrent grade III and meningeal progression.
- ❑ A multidisciplinary treatment approach should be taken with spinal ependymoma since it remains challenging and has lasting neurological impact affecting quality of life.

Pre-Surgery Work-up:

- Spinal Ependymoma: MRI of spinal axis (brain, C, T, L) and lumbar puncture for CSF analysis as warranted
- Tumor Specific: MRI of C spine: revealed an enhancing intramedullary C2 lesion

Spinal tumors: Location

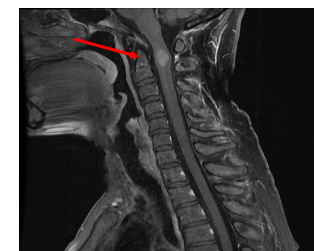


Ependymoma is one of the most common types of intramedullary tumors

Imaging Timeline: Pre-Operative



MRI C spine: pre-surgery C2 lesion, Sag T2

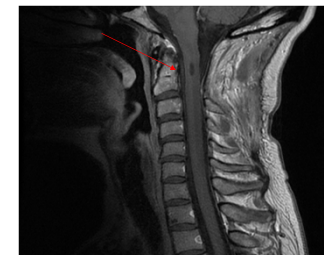


MRI C spine: pre-surgery, T1 contrast C2 enhancing intramedullary lesion

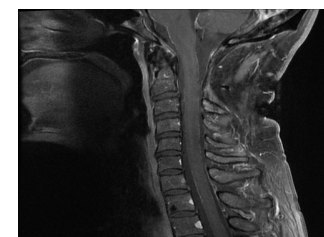
Symptoms Post surgery:

- Ataxia
- Bandlike tightness around waist
- Incomplete tetra-paresis
- Neuropathy right side of body
- Difficulty with bowel and bladder
- Diminished sensation (improving)
- Working a few hours
- One year Post-op:
 - ❖ No longer able to work (temporarily)
 - ❖ Gait Ataxia
 - ❖ Increased sensory symptoms
 - ❖ Fatigue
 - ❖ Headache

Post-Operative Imaging



MRI C spine: Sag T1 Flair contrast 4 months post op



MRI C spine: Sag T1 Flair contrast 2-year post op

Long Term Outcome:

- ✓ GTR 10-year progression free survival of 80-90%
- ✓ Lumbar spine, better neurological outcome than cervical and thoracic
- ✓ Ependymoma peak 4th and 5th decade of life- during active work and social period
- ✓ Post surgical neurological impairment: affect daily life activities: work, sports & recreation
- ✓ Ongoing neurological deficits: impaired ability to work (job modification or change), decreased engagement in activities

Implication for APPs:

- ❖ As advanced Practice providers, we can play a role by optimizing the patient's pre-surgery visit by providing the necessary referrals: Neuro-Oncology, rehab, pain and other services based on neurological symptoms for baseline evaluation.
- ❖ Evaluate for enrollment in the Primary tumor research and outcome network (PTRON) study which collects health related quality of life outcome.
- ❖ Refer to inpatient rehabilitation and community services post-surgery as needed.

References:

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