Abstract

Case Description: Patient is an 81 year old right handed woman who presented with right foot drop for 3 months. Patient's symptoms were mild at first and slowly progressive, associated with chronic lower back pain with shooting pain radiating down her right lower extremity. MRI revealed severe L4-L5 lumbar spondylopathy and was diagnosed with L5 radiculopathy. EMG nerve conduction studies were not done and she was treated conservatively and was given an AFO. Patient's symptoms progressed with further weakness in her right lower extremity and had a CT scan of her head which revealed a left parietal mass consistent with meningioma with moderate amount of edema in the left parietal white matter. Patient underwent craniotomy with resection of the mass. Postoperatively patient was transferred to begin acute inpatient rehabilitation.

Discussion: Patient was transferred to acute inpatient rehabilitation and despite tumor resection, daily leg weakness did not return. EMG of the right lower extremity showed no findings of radiculopathy. Early diagnosis and localization of neurologic weakness as early diagnosis is imperative, whether it be a peripheral lesion such as radiculopathy or CNS lesion such as a brain tumor. Delay in diagnosis can result in permanent neurologic loss.

Conclusion: This case is an example of how careful physical exam, utilization of differential diagnosis, and use of EMG can help rule out L5 radiculopathy, as MRI is useful in diagnosis, but can be too sensitive. MRI diagnosed spinal lesions are very common in the elderly. Central causes, although rare, need to be considered in the differential diagnosis of foot drop. This case confirms that good results can be achieved when correlative central causes of foot drop are recognized unfortunately in this case her symptoms are permanent.

Introduction

Meningiomas are one of the most frequent primary benign brain tumors. They arise from the meninges, the protective membrane of the brain and spinal cord. Although they are known to be benign, depending on the location of the tumor, they can cause serious morbidity and mortality and a variety of symptoms.

Radiologically:
- Meningiomas account for about one-third of all primary brain and central nervous system tumors.
- Currently, the estimated prevalence in the United States is 70,000 people with meningiomas.
- Occur most commonly in people between the ages of 40 and 70.
- Much more common in women than in men; female-to-male ratio is almost 3:1 in the brain.

Spinal meningiomas, which comprise about 10% of all meningiomas, the female to male ratio is even higher, approximately one to one.

Meningiomas are very rare in children, with pediatric cases accounting for only 1.5% of the total.

Risk Factors:
- Ionizing radiation therapy that involves radiation to the head increases the risk.
- Hereditary: meningioma type.
- Dental X-ray exposure.
- Cell phone use.
- Trich 2 mutation.
- Hormonal Factors - since the incidence is higher in postmenopausal women.
- Aromatic Bomb Exposure.
- Head Trauma.
- Age.

Most commonly meningiomas arise from the surface of the brain or the convolutes of the reflections of the dura mater (falc cerebri, tentorium cerebelli, venous sinuses). Less common sites include the optic nerve sheath, choroid plexus, 10-20% of the time they can arise from the spinal cord. It is very rare to occur at extracranial sites. Symptoms correlate with rate of growth and site of the mass (see Table 1).

By inflating the underlying cortex, meningiomas can cause seizures. Seizures were present preoperatively in approximately 25-40% of patients with meningioma. Meningiomas are prone to grow supratentorial meningiomas located in the convexity as well as masses associated with perfused edema. Localized or non-specific headaches are common. Compression of the underlying brain can give rise to focal or generalized cerebral dysfunction such as focal weakness, dysphasia, apathy, and/or somnolence.

<table>
<thead>
<tr>
<th>Table 1: Symptoms and Signs Associated with Meningiomas in Specific Locations</th>
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<tbody>
<tr>
<td>Symptom &amp; Sign</td>
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<tr>
<td>Paraplegia</td>
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<tr>
<td>Vaughn's</td>
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<tr>
<td>Wallerian degeneration</td>
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<tr>
<td>Contraindications</td>
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<td>Cerebellar signs</td>
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<td>Cranial nerve involvement</td>
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<td>Spastic gait</td>
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Table 2: Symptoms and Signs Associated with Meningiomas in Specific Locations

Treatment

The mainstay of treatment is surgical resection in symptomatic meningiomas. asymptomatic meningiomas that are expanding, and meningiomas associated with edema. The patient may undergo radiation therapy postoperatively as well. Depending on the characteristics of the meningioma, the patient may only undergo radiation therapy alone. The use of corticosteroids preoperatively and postoperatively has significantly decreased the mortality and morbidity rates associated with surgical resection. Antiplatelet drugs should be started preoperatively in supratentorial surgery and continued postoperatively for three months. A number of studies have demonstrated that patients who have been treated early with resection of the brain tumor have had good neurologic recovery.

Bibliography