Left Somatosensory Cortex Tumor Presented with Radicular Hand Pain and Paresthesia

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Concurrent lesions in the brain and spinal cord, which can produce similar symptoms are truly confusing situations. Herein, we report on a 56-year-old woman who suffered from an intermittent radicular pain and paresthesia in her right upper limb and mild headache. Imaging showed a cervical vertebral disc herniation and a small round tumor of the somatosensory cortex with clear border, considered as a little meningioma, which could be followed. To deal with these two concurrent lesions, we faced a challenging condition.

Keywords: Cervical vertebral disc herniation • meningioma • paresthesia

Introduction

Brain tumor presenting with pain and paresthesia in the body is not a rare condition. However, it is confusing when another concurrent neurologic lesion could exactly explain the symptoms. Herein, we report on a 56-year-old woman who suffered from radicular pain and paresthesia in her right upper limb. She had two concurrent neurologic lesions—a cervical disc herniation and a brain tumor—both of which could per se cause the symptoms.

Case Report

A 56-year-old woman presented with a radicular pain and paresthesia in her right upper limb. The pain was intermittent, originating from the anterior upper arm and referring to her radial forearm and right thumb and index finger (corresponding to C6 radicular pain). Paresthesia was in the same region. She also complained of a chronic mild intermittent headache. On physical examination, biceps, triceps, and brachioradialis reflexes were +2 and symmetric in both hands. Phalen’s test was negative and Tinel’s sign did not exist. There were no other abnormal physical or neurological findings.

Lateral neck X-ray indicated disc narrowing and a right posterior osteophyte in the C5-C6 space. Oblique neck X-ray indicated narrowing of the C6 foramen. Axial and sagittal neck magnetic resonance imaging (MRI) showed a C5-C6 disc degeneration and a right centerolateral osteophyte with compression effects on the dural sac and right C6 root (Figures 1 and 2). Electromyography (EMG) reported a mild C5-C6 radiculopathy;

Figure 1. Axial T1-weighted MRI from C5-C6 space before the discectomy. It shows compression effect on the right C6 root and dural sac.
nerve conduction velocity (NCV) was normal. Because of her headache, we determined to take a brain computed tomography (CT) and MRI before the operation. Axial brain CT with and without contrast showed a hyperdense lesion with clear border which was located in the posterior left parietal convexity with calcified area. Brain MRI with and without contrast showed a lesion in the left posterior parietal convexity at the somatosensory cortex, which was isodense in T1, hypodense in T2, and enhanced with gadolinium. The diameter of the lesion was about 1.5 cm; no edema or mass effect was detected (Figure 3). In brain angiography, at late venous phase, a small faint blush was observed in the posterosuperior left parietal area which was the sign of a hypovascular tumor.

According to brain CT, MRI, and angiography, we considered the tumor as a small lesion (meningioma) with no edema and mass effect and without any symptoms but a mild intermittent headache. We decided to follow the brain tumor until we could find a definite indication for brain surgery. Because of the evidence of cervical disc herniation and osteophyte on X-ray, MRI, and EMG—which could completely explain the patient’s signs and symptoms—we decided to perform a cervical disectomy. Finally, she underwent a C5-C6 disectomy and an anterior fusion with iliac crest.

She wore a Philadelphia collar and received medical therapy including chlordiazepoxide 5 mg/day, nortriptyline 25 mg/day, and acetaminophen codeine and underwent physiotherapy. However, she still complained of her right hand pain and paresthesia. EMG and NCV, three months and one year after the surgery were reported normal. MRI displayed no mass effects on the C6 root and dural sac (Figure 4). Suspecting the neuropathic pain, she underwent physiotherapy and occupational therapy several times. She was also referred to a psychiatrist and received fluoxetine 20 mg/day and gabapentin 600 mg/day. After all these, no changes occurred in her complaint. Her small brain tumor was followed by MRI six months and one year after the diagnosis. But there was no change in its size and shape, hence, we saw no definite indication for brain surgery.

Two years after the first visit, she was referred to neurosurgery clinic with a recent history of exacerbation of her right hand pain and headache.
On repeat CT and MRI, the tumor had enlarged (Figure 5). Finally, a left parietal craniotomy for resection of the tumor was done. The pathology report confirmed that it was a meningioma. After the surgery, the pain was decreased. Two months after her discharge from hospital, all signs and symptoms including headache and right hand pain and paresthesia were resolved.

**Discussion**

Cervical disc herniation is a condition in which nucleus pulposus protrudes through the surrounding fibrocartilage. This occurs most frequently in the lower cervical region. The signs and symptoms usually include neck ache, radicular pain, and paresthesia experienced in the upper limb in the distribution of the involved root.

Brain tumor has various presentations depending on location and the nature of the tumor, including headache, seizure, nausea and vomiting, loss of consciousness, cognitive dysfunction, weakness, and sensory loss.

There are several reports on brain tumor presenting with paresthesia and pain in the body. Temporomandibular joint pain, glossalgia, dental pain, and cervical radiculopathy are some of these examples. Cervical radiculopathy as a symptom of brain tumor was reported before which is close in concept with our report, but to the best of our knowledge the situation of concurrent brain tumor and cervical disc herniation has not been reported.

Finally, we wish to emphasize that in cases where concurrent causes could be responsible for symptoms, distinguishing between suspected causes is very difficult and even impossible. So, vigilance is recommended.

**References**


![Figure 5.](image_url) Brain axial T1-weighted MRI with contrast, just before the brain surgery, showing enlargement of the tumor and edema in the left parietal somatosensory cortex.