

A case of isolated trigeminal sensory neuropathy secondary to radiologically-suspected metastatic brain tumor

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Received 11 March 2014; received in received from 17 March 2014; accepted 21 March 2014

Abstract

Hemifacial sensory disturbance may be caused by a lesion in the marrow of the central nervous system. In that case, other neurologic symptoms such as four extremities, the trunkal sensory disturbance or cerebellar ataxia are often present. However, hemifacial sensory disturbance rarely appears in isolation. We report on a 70-year-old woman who showed only hemifacial sensory disturbance. It was suspected that the symptom was caused by a metastatic brain tumor. A characteristic of the case was that the metastasis to the pons produced hemifacial sensory disturbance. During the process of diagnosis of the hemifacial sensory disturbance, a cancer is not rarely detected. The possibility of a metastatic brain tumor should be taken into consideration for the diagnosis.

Keywords: hemifacial sensory disturbance, metastatic brain tumor. MRI, blink reflex

Introduction

Hemifacial sensory disturbance may be caused by a lesion in the marrow of the central nervous system. In that case, other neurologic symptoms such as four extremities, the trunkal sensory disturbance or cerebellar ataxia are often present. However, hemifacial sensory disturbance rarely appears in isolation. The responsible lesion is a small lesion rolling up the trigeminal nuclei and trigeminal nerve fibers. Most existing reported cases have been associated with cerebrovascular disorder and autoimmune disease. We experienced a case that presented only hemifacial sensory disturbance. It was suspected that the symptom was caused by a metastatic brain tumor.

Case report

The patient was a 70-year-old woman. She was admitted to Tokushima National

Hospital suffering from sensory loss of the right side of the face. She had a history of rheumatoid arthritis (1960) and hypertension (2008), and a surgical history of the right femoral head prosthesis (1998). In the family history, there was nothing of particular medical concern. At getting up on March 26, 2013, she noticed the sensory loss to the parietal region of the right side of her face. The sensitivity of the right side in the oral cavity decreased, too. Because the sensory loss did not completely disappear, she was admitted to Tokushima National Hospital on April 10, 2013. In general physical examination, a transformation of the joints of the four extremities was shown. Neurologic findings demonstrated that in regard to consciousness she was lucid and there was no highly advanced functional disorder. The left eye showed miosis, and disappearance of the light reflex was shown. The oculomotor activity was normal. The sense of touch and sense of pain decreased from the right forehead over the parietal region. There were not the masseter muscle and no paralysis of

the facial striated muscle. The articulation and the deglutition were normal. There was no muscle weakness or muscle atrophy of the four extremities. The triceps jerk and the Achilles reflex had disappeared on both sides. The other deep tendon reflexes were enhanced. The Babinski sign was negative. There was a slight drop in pallesthesia in the lower limbs. There was no coordination disturbance. The independent gait was possible.

Clinical course

The left miosis and opposition areflexia were regarded as due to glaucoma. The abnormality of the deep tendon reflexes of the four extremities was regarded as due to osteoarthritis of the spine complicated by rheumatoid arthritis. The hypopallesthesia of the lower limbs distal part could be explained as a merger of the polyneuritis. We

thought that the right trigeminal disorders had developed acutely alone. In head MR imaging carried out on April 10, 2013, the right dorsolateral part of the bridge showed a small lesion, which had a high signal in diffusion-weighted images. This part accorded to the right principal sensory nucleus of the trigeminal nerve. We judged that it was the culprit lesion, and had resulted from brainstem infarction (Figures 1A - 1C). The blink reflex test result suggested a disorder of the main sensory nuclei (Figure 2). In head MR imaging carried out on April 24, 2013, multiple contrasting lesions appeared in both cerebral hemispheres (Figures 1D - 1F). The relatively large lesion was contrasted in the shape of a ring. A metastatic brain tumor was doubted from these MRI findings.

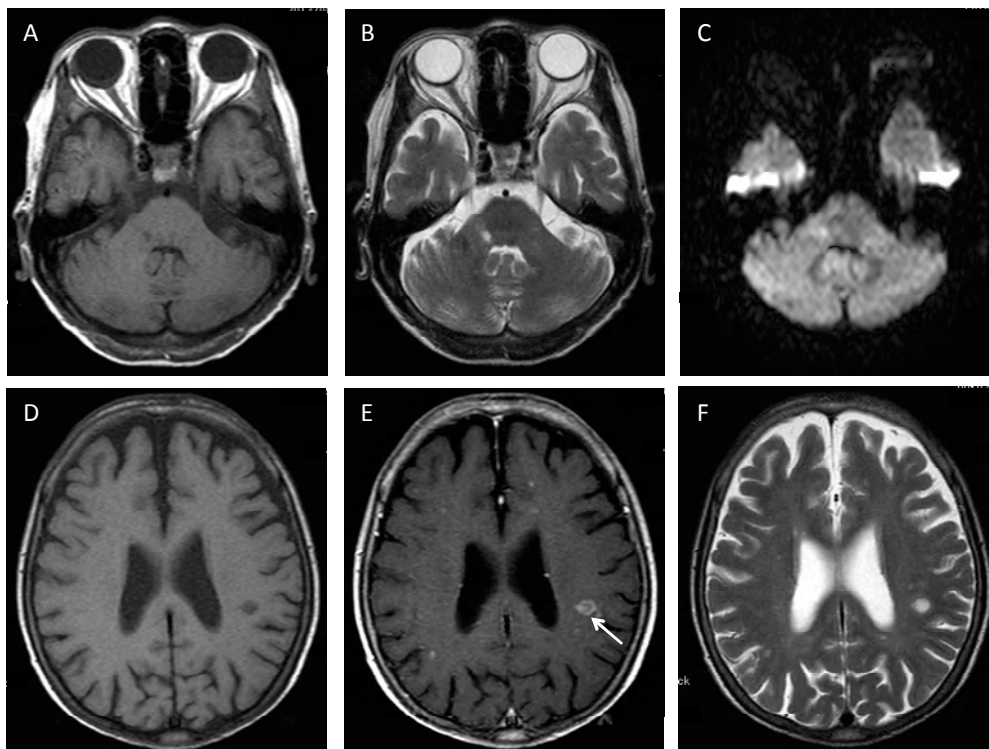


Figure 1. Head MRI. A-C. Images of April 10, 2013. There was a low signal domain in the bridge right side back outside in T1-weighted images, high signal in T2-weighted images, high signals in diffusion-weighted images. There were no supratentorial findings of particular interest. D-F. Images of April 24, 2013. Lesions enhanced with gadolinium occurred frequently supratentorially. Relatively large lesion showed low signals in T1-weighted images and high signals in T2-weighted images. The lesion was contrasted in the shape of a ring (Arrow).

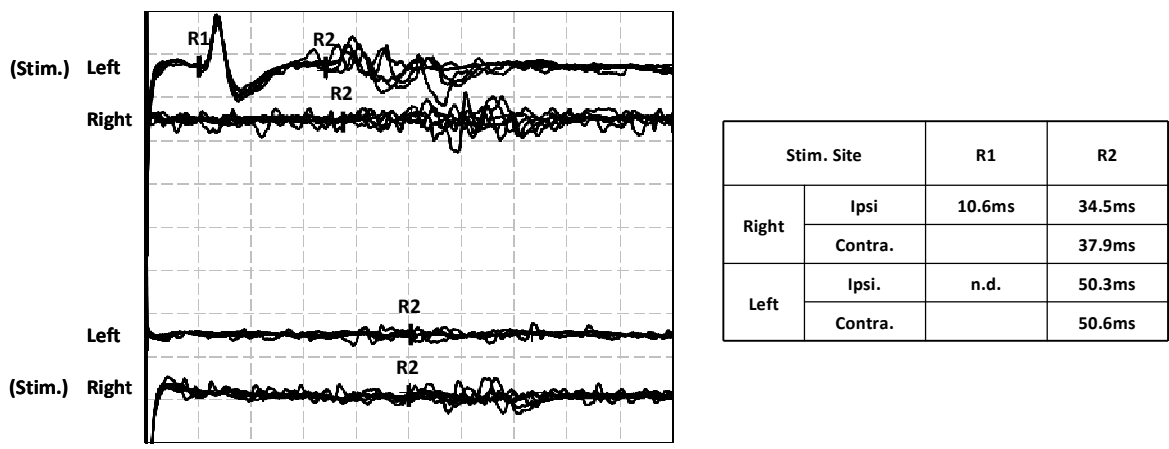


Figure 2. Blink reflex. In the left stimulation, the derivation of ipsilateral R1 and R2 was normal. Contralateral R2 had poor derivation. In the right stimulation, ipsilateral R1 was not derived. The latency of R2 was late and derivation was poor. Contralateral R2 had poor derivation, too.

Discussion

When hemifacial sensory disturbance develops alone, a localized lesion is suspected to the trigeminal nerve. The trigeminal nerve is often affected in the following parts; from the cerebellopontine angle trigeminal ganglion, the ophthalmic nerve branching from the trigeminal ganglion, the maxillary nerve, and the mandibular nerve [1]. In the dorsolateral part of the existing bridge of the trigeminal nuclei and trigeminal root entry zone, localized lesions are rare. So far, it has been reported that these lesions develop due to cerebral infarction, cerebral hemorrhage and multiple sclerosis [2-5]. In the present case, acute sensory disturbance of the right side of the face occurred. It was thought that a lesion of the right dorsolateral part of the bridge which was present in the first head MR imaging was due to cerebral infarction. However, because the cerebral infarction of this part is rare, the second head MR imaging was performed 14 days later to exclude an inflammatory lesion. The contrasting lesion, which occurs frequently in the cerebrum, was then detected. Therefore, a metastatic brain tumor was suspected. It seems that the lesion of the bridge dorsolateral part was a metastatic focus. A metastatic brain tumor

affects the trigeminal nerve, and hemifacial sensory disturbance may be caused. In this case the trigeminal nerve is often affected because of metastases to the Meckel cavity, or the temporal bone vertebral body or the mandible. Intracerebral metastasis is rare [6]. A characteristic of the present case was that the metastasis to the pons produced hemifacial sensory disturbance. During the process of diagnosis of the hemifacial sensory disturbance, a cancer is not rarely detected. The possibility of a metastatic brain tumor should be taken into consideration for the diagnosis.

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