A Case of Arnold Chiari Malformation Type 1 Admitted with Hypoesthesia

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Abstract

Arnold Chiari malformation type I is a developmental pathology characterized by herniation of the cerebellar tonsils towards the spinal canal through the foramen magnum. The herniation of the cerebellar tonsils can also compress or stretch anatomical structures in the brainstem, leading to various symptoms. This condition is rarely seen, due to common and non-specific complaints, it may be confused with other diseases, and patients may get misdiagnosis. In this article, a patient who applied to hospital with the complaint of hypoesthesia and diagnosed as Arnold Chiari malformation type 1 is reported.

Introduction

Arnold Chiari Malformation (ACM) type 1 is a clinical condition in which cerebellar tonsils extends to the upper cervical spinal canal through the foramen magnum. This form of ACM is considered to be adult type [1]. Older children or adults usually constitute patient population and patients are often asymptomatic [2]. Patients with ACM may present subtle and varying symptoms such as headache, extremity pain or weakness, vocal cord paralysis, vertigo, hypoesthesia. Non-specific symptoms may cause delay in correct diagnosis [3]. Symptoms seen in ACM type 1 are well described in previous studies. In this case, a patient with ACM type 1 who applied with hypoesthesia is presented.

Case

33 years old female patient was applied to hospital with sensory loss of right upper extremity. Patient mentioned this condition evolved in the last 10 years. It was learned from medical history that patient was experiencing headaches and loss of balance from time to time. The patient reported that she had received analgesic treatment for her complaints, with diagnosis of cluster headache. But patient also reported that she had not seen any benefit from treatment and had not applied to hospital until she got worsen. On physical examination, vital signs were within normal range, for her age, her weight was found to be normal. In neurological examination, positive rowsing test and hypoesthesia of right upper extremity was noticed, patient was not able to walk on a straight line and not able to make sequential movements. In examination of the eye muscles, bilateral difficulty in elevating bulbous oculi was found. Fundus examination revealed that there is no papilledema. Patient’s complete blood count and biochemical tests were normal. Ferritin, folate and vitamin B12 levels were within normal limits. The patient underwent electroencephalography test. However, no pathological finding was observed in this test. Cranial and cervical Magnetic Resonance Imaging (MRI) was performed due to findings of neurological examination. In MRI, cerebellar tonsils were found to be protruded ( herniated) caudally through the foramen magnum and mild brain stem compression was observed (Figure 1).

In addition, extensive dilatation of the central canal ( hydromyelia) and bifid spinous process of 7th cervical vertebra was noticed, vertebral canal was found to be larger than normal (dural ectasia) (Figure 2).

Patient was diagnosed as ACM type 1 due to existing complaints, physical examination and cervical magnetic resonance imaging findings. The patient was referred to neurosurgery for decompression. The patient refused to have brain surgery due to complications might be seen after the procedure.

Discussion

With or without Syringomyelia, due to unspecific clinical findings, definitive diagnosis of symptomatic ACM is often made lately. In the period of time, until correct diagnosis, patients usually get diagnosis of multiple sclerosis, muscular dystrophy or other degenerative diseases [4]. Previously, current case was diagnosed as cluster headache and given analgesic treatment.
Cervical Magnetic Resonance Imaging. When diagnosed in adults, symptoms of this malformation such as headache, loss of sensation and neck pain are common complaints. Due to common and unspecific symptoms, ACM Type 1 may be confused easily with other disorders. For this reason detailed examination and skeptical approach is important in differential diagnosis. We think that detailed examination of patients who presented with ongoing or increasing unspecific symptoms over the years, may contribute us to make accurate diagnosis.

References