

Chiari Malformation Presenting with Recurrent Ankle Sprain: A Case Report

Tekrarlayan Ayak Bileği Burkulmasıyla Ortaya Çıkan Chiari Malformasyonu: Bir Olgu Sunumu

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ABSTRACT

Chiari type I malformation can present with several clinical signs and symptoms. We describe a 20 year old man presenting with recurrent bilateral ankle sprain who was referred to our clinic to prescribe him an ankle-foot orthoses for the right ankle. Among all the signs and symptoms of Chiari I malformation, our patient presented just with recurrent ankle sprain without any frank neurological signs and symptoms. To the best of our knowledge, it is the first presentation of this disease with recurrent bilateral ankle sprain. So, the careful evaluation of patients with ankle instability and recurrent ankle sprain is suggested to rule out any concomitant neurological disease (*J PMR Sci 2010;13:39-40*)

Keywords: Rehabilitation, sprain, Type I Arnold Chiari Malformation, ankle

ÖZET

Chiari Tip I malformasyonu değişik klinik belirti ve bulgularla karşımıza çıkabilir. Bu makalede rekürren bilateral ayak bileği burkulması nedeniyle başvuran ve sağ ayak bileği için ayak-ayak bileği ortezi yapılmak üzere kliniğimize yönlendirilen 20 yaşında bir erkek hastayı sunuyoruz. Chiari Tip I malformasyonunun aşikâr nörolojik bulgu ve semptomları olmaksızın sadece tekrarlayan ayak bileği burkulması ile ortaya çıkmıştı. Bilgimiz dahilinde rekürren ayak bileği burkulması ile ortaya çıkan ilk olgudur. Bu nedenle ayak bileği instabilitesi ve rekürren burkulması olan hastaların eşlik edebilecek nörolojik hastalıkları dışlamak için dikkatli incelenmesi önerilir. (*FTR Bil Der 2010;13:39-40*)

Anahtar kelimeler: Rehabilitasyon, burkulma, Tip-I Arnold Chiari Malformasyonu, ayak bileği

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Introduction

There are four traditional types of Chiari malformations representing with various clinical and anatomical presentations including varying degrees of involvement of the hindbrain. The Chiari I malformation was described as caudal displacement of the cerebellar tonsils to a level below the plane of the foramen magnum. It is generally not associated with caudal descent of the brainstem, and hydrocephalus is the uncommon presentation in this disease. (1,2) There are a wide spectrum of presentations in this malformation. Here, a patient with Chiari I malformation

presenting with recurrent ankle sprain will be discussed. To the best of our knowledge, this is the first presentation of these concomitant problems.

Case

A 20 year old man was referred to our rehabilitation clinic with a history of 3 years of bilateral recurrent ankle sprain. He experienced the problem for 3 times and 2 times in the right and left sides, respectively. At least, casting was done twice for the right ankle during these years. However, his problem was still intractable and even he developed a new complaint of some

degree of instability in the right ankle during walking. Requested ankle radiography, ankle and lumbosacral MRI and electrodiagnosis were unremarkable. So, he was referred to our clinic to prescribe him an ankle-foot orthoses for the right ankle. In physical examination, there were a little ataxia in the gait, impaired tandem gait, inability to perform heel and tip-toe walking, and inability to hopping. Stability tests of the ankle joints such as 'anterior drawer test' were impaired especially in the right side. There was just subtle weakness in the ankle and toe dorsiflexors (4/5) and the other myotoms were normal. Sensory examination (light touch, pin prick and vibration) was completely normal. Cranial nerves examination was normal as well. Deep tendon reflexes were normal and plantar reflexes were mute bilaterally.

Routine laboratory tests including complete blood count, lipid profile, lactate dehydrogenase, creatin phosphokinase, liver function test, and fasting blood sugar were normal. Brain and cervical MRI were requested; in them small and mild elongated fourth ventricle, tonsillar herniation through foramen magnum without any sign of hydrocephalus was seen. So, the patient with the impression of Chiari I malformation was referred to a neurosurgeon.

Discussion

There are a wide spectrum of signs and symptoms in Chiari I malformation. Even, it may be asymptomatic in 30% of patients. (2) The most common presenting symptom is pain, reported in about 60% to 70% of patients. Pain is generally described in the occipital or cervical region and is generally nondermatomal. Other symptoms may include nonradicular pain in the shoulder, back, chest and extremities that may be described as burning pain, motor and sensory disturbances in the arms and legs, dysphagia, snoring, clumsiness and urinary incontinence (1,2,3).

Signs seen in this malformation are also variable such as upper motor neuron changes in the legs (spasticity, exaggerated deep tendon reflexes and upward plantar reflex). The upper extremities may have an evidence of lower motor neuron involvement (atrophy, diminished or absent reflexes and fasciculations). The nondermatomal sensory loss involves pain and temperature but spares light touch and proprioception.

Ataxia and lower cranial nerve dysfunction may also be seen. Some types of these malformations present with scoliosis because of the underlying syrinx (1,2,3).

On the other hand, recurrent ankle injury occurs in 70% of individuals experiencing a lateral ankle sprain. The cause of this high level of recurrence is currently unknown and may be related to the local ankle ligaments or the spinal or supraspinal levels of motor control. (4, 5, 6) Proprioception and accompanying neuromuscular feedback mechanisms provide an important component for the establishment and maintenance of functional joint stability. Neuromuscular control and joint stabilization are mediated primarily by the central nervous system. Therefore, involvement of the central nervous system may interrupt this control and may affect balance and the stability of the ankle joint (7, 8).

Among all the signs and symptoms of Chiari I malformation, our patient presented just with recurrent ankle sprain without any frank neurological signs and symptoms. As it was discussed previously, it was referred to his impaired balance subsequent to the central nervous system involvement (Chiari I malformation). Based on the results it is suggested that in chronic ankle instability, careful neurological examination should be done to rule out diseases such as Chiari I malformation.

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