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Case Report

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### A case with Chiari malformation 2 diagnosed with vertigo

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### Introduction

Chiari malformations (CM) are a congenital anomaly in which posterior fossa structures are displaced from foramen magnum to the upper cervical spinal canal at different degrees [1]. (1) If there is accompanied by spinal dysraphism, it is defined as type 2. Symptoms occur as a result of pressure on the cerebellum like as vertigo, ataxia, vision problems, headache. In some cases, medical therapy can be used to manage symptoms. Surgery is only treatment for decrease compression or stop progression. This malformation is frequently accompanied by syringomyelia, cystic spaces occur vertically in the spinal cord. In this article, a case with CM type 2, syringomyelia and multilacuner infarction with vertigo was discussed.

### Case Report

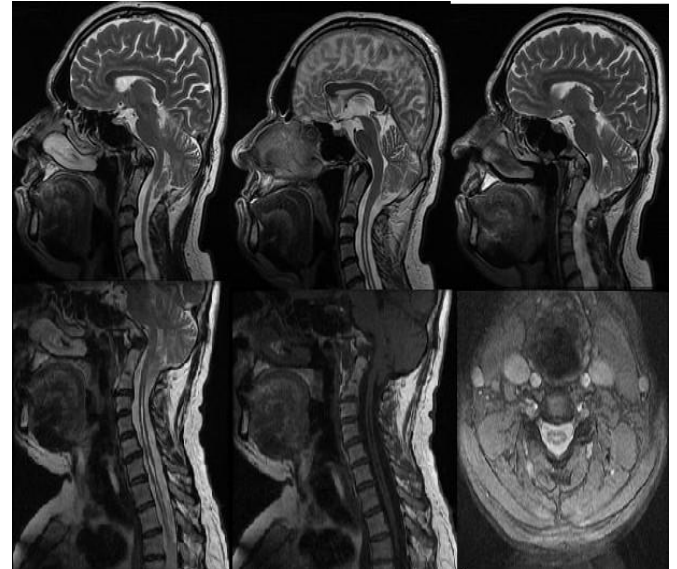
A 49-year-old male patient was admitted to hospital had vertigo for last 6 months. His symptom could be positional and lasting for hours. He noted that sometimes his vertigo disrupt the patients's daily life activity like as bend over. There was no nausea and vomiting,

hearing loss, and tinnitus. Also the patient had moderate headache for 3 years. Headache was localized nape of the neck and had no spread. There was no trigger and accompanying factor. Headache was not treated with analgesic medical therapy. In his past medical history, he had head trauma history at the age of 7. Also, he was diagnosed with hypertension for 2 years. When he was treated with 2 antihypertensive therapy with ramipril 5mg and amlodipine 10mg, he was normotensive. His neurological examination and laboratory tests were normal. Dix-Hallpike maneuver was negative. His audiogram and hearing test were normal. Cranial MRI revealed that multilacuner infarcts in periventricular area and cervical syrinx cavity in cervical area with sagittal section. (figure 1) Cervical MRI was performed and long-segment syringomyeliosis (up to T2 vertebra) was observed in the spinal canal. (figure1) The patient was diagnosed with CM type 2. Surgical treatment was not advised and followed with symptomatic therapy.

### Discussion

CM type 2 is thought to be due to defective occlusion and open neural tube [2]. The

malformation is characterised by a displacement of brainstem, fourth ventricle and cerebellum through the foramen magnum. It is usually accompanied by corpus callosum anomalies. Asymmetric dilatation of lateral ventricles, aqueduct stenosis or atresia, larger occipital horns than the frontal may be seen. Our patient had no cranial anomaly except cerebellar herniation. Common symptoms of CM type 2 are upper cervical canal symptoms, brainstem, and cerebellar symptoms. Nape pain, scoliosis and tethered cord syndrome are important findings in adults [3]. The patient had non-specific symptoms like as vertigo and headache. These symptoms may also be seen in hypertensive headache, but he was normotensive with medical therapy. His neurological examination was normal, so symptoms can be incidentally. The treatment of CM 2 varies according to symptoms and comorbid diseases. Shunt and decompressive surgery are important in cases with hydrocephalus and brainstem compression symptoms. No surgical treatment was needed in our patient. Syringomyeliosis is most seen in the lower cervical region, but may occur in the all spinal cord. Atrophic spinal cord and relative large central canal are present. Syringomyeliosis have different symptoms and progressive clinical course. Pain, paresis, paresthesia, hydrocephalus and brainstem findings can be seen. Patients benefit from surgical approach [4]. Syringomyeliosis was detected as long segment involvement on T2 vertebra on his MRI. Lacunar infarcts occur as a result of hypoperfusion or ischemia of perforating arteries, basal ganglia, white matter of capsular interna and pons localized lesions. Silent lacunar infarcts are often seen in hypertensive patients and result of lipohyalinosis. Collagen accumulation in muscle cells deteriorates wall elasticity [5]. Similarly, our patient had hypertension. His brain MRI showed multilacunar infarcts. We emphasized the importance of identifying the etiology with MRI, when patients present with common symptoms in neurology practice like as vertigo and headache which is localized, persistent and not treated with analgesic therapy.



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