Indian Journal of Trauma and Emergency Pediatrics
Volume 6 Number 1-2, January - June 2014

# Type-I Chiari Malformation with Syringomyelia: Accidental Detection in Near-Hanging

**Chhaya Divecha*, Milind S. Tullu**, Chandrahas T. Deshmukh***, Rajwanti K. Vaswani*****

**Abstract**

Chiari malformation type-I (CM-I) is a congenital disorder characterized by caudal displacement of the cerebellar tonsils through the foramen magnum. It usually presents in the second or third decade of life; however, it may be incidentally found on magnetic resonance imaging done for other purposes. A previously asymptomatic Chiari malformation type-I can become symptomatic subsequent to a trivial cervical injury. We describe a case of an 11-year-old girl with near hanging injury where a Chiari malformation type-1 (CM-I) with syringomyelia was incidentally detected on neuroimaging. Despite a difficullt prolonged stay in the hospital, the patient showed a near normal neurological recovery. We emphasize the need for the physician to be sensitized to the potentially disastrous consequences of minor trauma in undetected or asymptomatic congenital spinal anomalies. With increasing detection of such disorders in younger age, the physician should be updated about the basic work-up and appropriate referrals in such cases.

**Keywords:** Cervical; Children; Chiari Malformation Type-I (CM-I); Minor Trauma; Hanging; Magnetic Resonance Imaging; Spine; Syringomyelia.

## Introduction

Chiari malformation type- I (CM- I) is a congenital disorder characterized by caudal displacement of the cerebellar tonsils through the foramen magnum, with/ without syringomyelia.[1,2] It is the mildest form of Chiari complex; however, a previously asymptomatic Chiari malformation type- I can become symptomatic subsequent to a cervical injury.[1] Herein, we report a case of asymptomatic syringomyelia associated with a Chiari malformation type- I, accidentally diagnosed during a hospital admission for a near hanging injury.

## Case Report/ Summary

An 11-year-old girl was brought to our institution with history of attempted suicide by hanging due to a familial discord. After emergency management in a hospital elsewhere, she was transferred to us for mechanical ventilation. On admission, she was unconscious with a Glasgow Coma Score (GCS) of 5 ($E_1V_1M_3$), with heart rate of 110/min and blood pressure of 110/70 mm of Hg. She had labored breathing and required continued mechanical support. There was a ligature (strangulation) mark around her neck. Her pupils were mid-dilated, with sluggish pupillary reflex; and the fundus examination was normal. She was hypertonic with brisk deep tendon reflexes and extensor plantar reflexes. Other systemic examination was normal.

Her airway was secured and after cervical immobilization, fractures and soft tissue injuries were ruled out [by radiographs of neck and Computed Tomography (CT) scan of brain with cervical spine]. She had an episode of generalized tonic-clonic convulsion subsequent to admission and was treated with intravenous fluids, mannitol, dexamethasone and anticonvulsants. Due to only minimal improvement in neurological status even after 5 days ($E_2V_1M_3$), a magnetic resonance imaging (MRI) of brain and spine were done. It showed symmetric areas of abnormal T2 hyperintense signal involving bilateral thalami with associated edema and restricted diffusion in bilateral frontal cortices likely to represent hypoxic changes (*Figure 1*). It also

**Author Affilation:** *Assistant Professor, **Professor-Additional, ***Professor, Department of Pediatrics, Seth G.S. Medical College & KEM Hospital, Mumbai 400012, Maharashtra, India. Both Dr. Chhaya Divecha and Dr. Milind S. Tullu are designated as First Authors of the paper

**Reprint request: Milind S. Tullu,** "Sankalp Siddhi", Block No.1, Ground-floor, Kher Nagar, Service Road, Bandra (East), Mumbai 400051, Maharashtra, INDIA.

Email: milindtullu@yahoo.com