

Spontaneous resolution of obstructive hydrocephalus from blood in the cerebral aqueduct

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Abstract

Obstructive hydrocephalus is a neurological emergency that needs to be immediately identified and treated. It very rarely resolves without treatment. We report about an 86-year-old man with right frontal stroke who developed obstructive hydrocephalus caused by blood in the cerebral aqueduct. The patient had sudden and immediate clinical improvement and a repeated head computed tomography (CT) scan showing spontaneous resolution of hydrocephalus. Spontaneous resolution of obstructive hydrocephalus is possible when the cause is minimal blood in the cerebral aqueduct without any blood in the fourth ventricle.

Introduction

Obstructive hydrocephalus is a well known complication following intracerebral hemorrhage, leading to increased mortality and morbidity.¹ Patients with hydrocephalus should be diagnosed and treated immediately to prevent irreversible brain injury.² It is unlikely for obstructive hydrocephalus to resolve without intervention.

Case Report

We present an 86-year-old man with hypertension and congestive heart failure admitted for left sided weakness. On exam, he was awake, alert, oriented to time, place and person. He had left homonymous hemianopsia, right gaze preference, left sided hemiplegia, and left hemineglect. Initial head computed

tomography (CT) showed an acute infarct of the right frontal lobe. Two days later, he vomited and became lethargic, did not follow commands and opened his eyes only to deep painful stimuli. A repeated head CT showed hemorrhagic transformation of the infarct with hemorrhage in the cerebral aqueduct causing obstructive hydrocephalus (Figure 1). The neurosurgery team was contacted for Extra-ventricular drain (EVD) placement. While the patient was prepped for EVD placement, the patient's symptoms resolved suddenly and completely (8 hours from onset). A repeated head CT showed spontaneous resolution of the hematoma in the aqueduct and hydrocephalus (Figure 1).

Discussion

There are few reports of spontaneous resolution of acute hydrocephalus in children,²⁻⁴ but only one case was reported in an adult.⁵ Obstruction of cerebral aqueduct resulted in non-communicating hydrocephalus resulting in increased intracranial pressure. The elevated pressure in the lateral and third ventricles pushed the blood clot from the cerebral aqueduct downwards, resulting in spontaneous resolution of the hydrocephalus. This likely occurred because there was only a small amount of blood in the cerebral aqueduct and no blood in the fourth ventricle, which made it

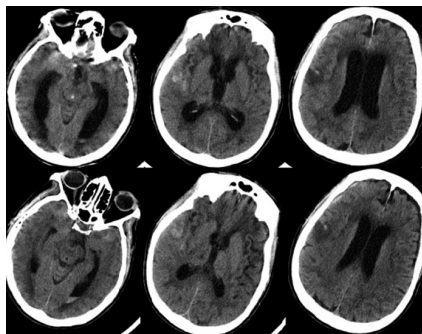


Figure 1. Upper images: obstructive hydrocephalus with dilated anterior and temporal horns of the lateral ventricles and evidence of blood in the cerebral aqueduct. Lower images: resolution of hydrocephalus with no evidence of blood in the cerebral aqueduct.

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easy for the above pressure to relieve the obstruction. Our case demonstrates that spontaneous resolution may occur in acute obstructive hydrocephalus when it is caused by minimal blood in the cerebral aqueduct, with no blood in the fourth ventricle. However, this should not be a reason to delay treatment, which should be initiated immediately to prevent irreversible brain injury.

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