

## A simple collapse, agitation and pathological crying in a young woman? - Atypical onset of a basilar thrombosis

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### Abstract

**Background**—A collapse and agitation in a young person comprises many differential diagnoses, but usually does not include a life-threatening basilar thrombosis.

**Methods and Results**—We report the case of a 19-year old woman who presented mainly with a collapse and agitation. CT and CT-angiography yielded distal basilar thrombosis which was successfully treated by intraarterial thrombolysis. MRI confirmed multiple small ischemic lesions in the vertebrobasilar territory. The patient improved quickly and returned to her normal daily activities of life after a few months.

**Conclusions**—Posterior circulation ischemia should be included among the possible differential diagnoses of any acute onset of an agitated or confusional state.

**Conflicts of interest/Disclosures**—None to declare.

**Ethics**—Written informed consent of the patient has been obtained.

### Key words

stroke; basilar thrombosis; collapse; agitation; thrombolysis

### Introduction

A collapse and agitation in a young person comprises many differential diagnoses, but usually does not include a life-threatening basilar thrombosis. We report the case of a young female with a collapse and agitation in who careful history, thorough clinical examination and urgent brain imaging resulted in successful thrombolysis of basilar thrombosis.

### Case Report

One morning, a healthy 19-year old saleswoman collapsed in her bathroom, lost urine and vomited. On arrival in the emergency department, she was agitated, cried in an inarticulate and stereotyped manner and communication was not possible. Her spontaneous movements appeared purposeless; she had foamy white saliva at her lips and apparently could not swallow. She did not open her eyes, but after passive eye opening she showed spontaneous horizontal conjugated eye movements and

slightly meiotic pupils. Doubtful bilateral Babinski sign was found but no other focal neurological deficit; on noxious stimuli limb movements were non-localizing. The mother reported that she found her daughter lying on the ground and though being awake, initially she could not move or talk but shortly after she started crying and moving heavily. Laboratory test including drug screening was unremarkable. After further sedation with midazolam, CT scan excluded intracranial bleeding but yielded hyperdense basilar artery sign (Figure 1).

CT-angiography confirmed distal basilar thrombosis (Figure 2) being successfully treated by intraarterial thrombolysis (Figure 3).

MRI showed multiple small ischemic lesions in the vertebrobasilar territory including pons, midbrain, right basal thalamus and cerebellum bilaterally (Figure 4).

Further diagnostic (ECG, holter-ECG, transoesophageal echocardiography, neurosonography, cervical MRI, lab-

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Figure 1. Brain CT on admission showing hyperdense basilar artery sign (arrow)

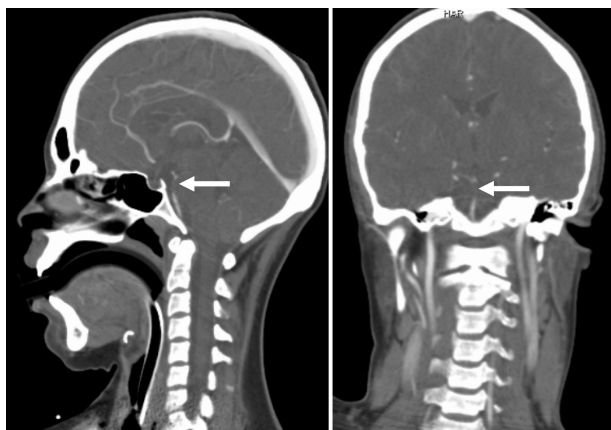


Figure 2. CT-angiography (left = sagittal view, right = coronar view) confirming distal basilar thrombosis (arrow)

oratory screening including testing for hypercoagulability and vasculitis, no family history of stroke or miscarriages) disclosed no specific stroke etiology [1]. Secondary prophylaxis with acetyl salicylic acid was started. The patient improved quickly and was transferred for further rehabilitation with only a mild right hemiparesis. At the last follow-up after three months she had no fur-



Figure 3. Angiography revealing occlusion of distal basilar artery prior to thrombolysis (left) and successful perfusion after thrombolysis (right)

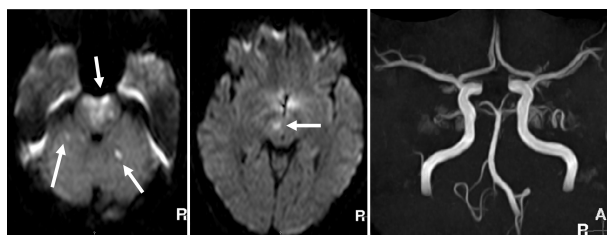


Figure 4. MRI diffusion weighted images demonstrating small ischemic lesions (arrows) of brainstem and cerebellum (left, middle) and contrast MR-Angiography showing patent basilar artery (right)

ther deficits and had already returned to her normal daily activities of life.

## Discussion

Retrospectively, our patient initially sustained a transient tetraplegia and anarthria during mid-basilar artery occlusion which spontaneously resolved after a few minutes. The subsequent dominant clinical feature with agitation and stereotyped crying constituted the distal basilar artery occlusion. Supportive evidence is provided by the resolution of these symptoms following successful recanalization and the temporal relationship of these symptoms with the onset of the basilar occlusion [2]. The neuroanatomical substrate of these symptoms remains unknown. In one similar case of pathological crying in top of the basilar artery occlusion, an involvement of brainstem serotonergic nuclei and their projections, a disruption of the ascending reticular activation system or a loss of tonic inhibition of a crying centre was discussed [3].

The patient's history, the lack of any obvious explanation for her symptoms and the clinical signs raised the suspicion of brainstem dysfunction. The presence of a hyperdense basilar artery sign on unenhanced CT like in our patient is a strong predictor of basilar artery thrombosis if considered in patients with clinical signs of posterior circulation stroke [4].

An agitated, excited or confusional state in young persons usually encompasses a broad spectrum of disorders like intoxication, metabolic encephalopathy, encephalitis, non-convulsive epileptic or postictal state and psychiatric disorders. An ischemic stroke in a young and previous healthy person without any risk factors is usually not included in the primary differential diagnosis of an acute agitation. Though basilar thrombosis usually manifests with unilateral or bilateral paralysis of limbs or hypaesthesia, affection of cranial nerves, abnormalities in eye movement or other eye signs, reduced consciousness or a combination of these symptoms [5], it may occasionally present only or mainly with acute onset of agitation [6].

In conclusion, inclusion of posterior circulation ischemia among the possible causes of acute onset of an agitated

or confusional state may be vital as the rate of disability and death without urgent thrombolysis is almost 80% [7].

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