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Podcast

Intrathecal iodinated contrast mimicking subarachnoid hemorrhage in a patient with neurological symptoms

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Subarachnoid Hemorrhage; Intracranial Hemorrhage; Neuroimaging; Computed Tomography Angiography

Subarachnoid hemorrhage (SAH) is a critical condition, but radiological findings can sometimes mimic it, leading to diagnostic challenges.

We present the case of a 67-year-old woman with a medical history of diabetes mellitus (DM) and hypertension (HTN), who presented with a month-long history of gait instability and choreic movements of the extremities. She did not report any headache. On examination, the patient was alert and fully oriented, with normal speech, preserved muscle strength, and no signs of meningism. Laboratory findings were normal.

A head computed tomography (CT) was performed, revealing diffuse hyperattenuation of the subarachnoid space primarily affecting the basal cisterns, Sylvian fissures, and anterior interhemispheric fissure, raising suspicion of SAH (Figure 1A). However, the patient's neurological symptoms appeared inconsistent with this diagnosis. Subsequent CT-angiography of the supra-aortic trunks and intracranial arteries excluded aneurysms and other vascular anomalies (Figure 1B-C).

A review of the patient's history revealed that an epidural catheter had been placed the previous day for pain control in the lower extremities due to peripheral arterial disease. The procedure was done under radiologic guidance, using iodinated contrast to ensure correct placement in the posterior epidural space.

The absence of compatible symptoms and the recent epidural catheter placement suggested an inadvertent dural puncture (wet tap).

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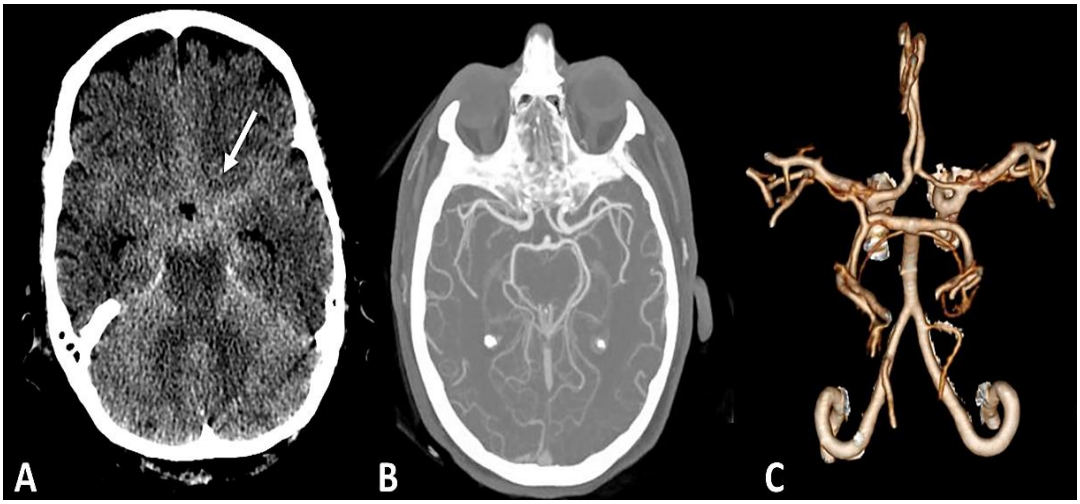

Figure 1. A) Axial non-contrast-enhanced head computed tomography (CT) image showing diffuse hyperattenuation of the subarachnoid space, primarily affecting the basal cisterns, both Sylvian fissures, and the anterior interhemispheric fissure (arrow), raising suspicion of subarachnoid hemorrhage (SAH); B) Axial maximum intensity projection CT angiography; C) Three-dimensional (3D) CT images of the intracranial arteries excluding aneurysms and other vascular anomalies

Evaluation of the epidural catheter showed no cerebrospinal fluid (CSF) leakage, and an epidural test dose was negative for intrathecal or intravascular placement leading to the decision to keep the catheter in place. Clinical observation was conducted, and subsequent CT and magnetic resonance imaging (MRI) confirmed normalization of the initial findings within a few days (Figure 2).

Pseudo-SAH is characterized by apparent hyperattenuation in the basal cisterns that mimics true SAH on imaging. It can result from several causes, including cerebral edema, viral or pyogenic leptomeningitis, leptomeningeal carcinomatosis, idiopathic intracranial HTN (IIH), spontaneous intracranial hypotension (SIH), intrathecal contrast administration, or high-dose intravenous (IV) contrast leakage into the subarachnoid space.[1-3] The patient's history is essential in determining the cause. MRI is useful in these cases to identify signs of SIH or infection. In uncertain cases, CSF sampling through lumbar puncture or external ventricular drainage serves as the confirmatory test of choice.[3]

These clinical images underscore the importance of considering alternative diagnoses to SAH when clinical symptoms do not align with imaging findings and highlight the need to correlate clinical history with procedural details.

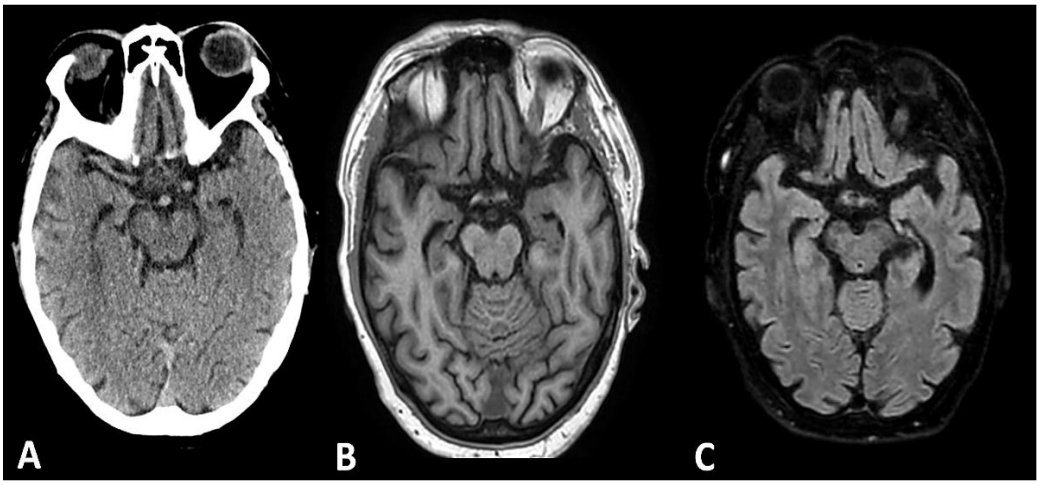

Figure 2. A) Axial non-contrast-enhanced head computed tomography (CT); B) Axial T1-weighted magnetic resonance imaging (MRI); C) Axial fluid-attenuated inversion recovery (FLAIR) MRI images showing normal basal cisterns without abnormal content

Conflict of Interests

The authors declare no conflict of interest in this study.

Acknowledgments

None.

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