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Transient global amnesia after cerebral angiography still occurs: Case report and literature review

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We report two cases of epithelioid hemangioma (EH) manifested in the thoracic spine with associated clinical, radiographic, and pathological findings. Epithelioid hemangioma is a benign vascular tumor that can involve any bone (including the spine in a subset of patients). Although recognized as a benign tumor by the WHO, it can display locally aggressive features. Within the spine, these features may lead to pain, instability, and/or neurologic dysfunction. The radiographic appearance is most typically that of a lytic, well-defined lesion on plain film or CT. The MRI appearance is typically hypointense on T1WI, hyperintense on T2WI, and avidly enhancing, often with an extraosseous soft-tissue component.

Introduction

Transient global amnesia (TGA) is an amnesic syndrome characterized by the abrupt onset of both anterograde and retrograde memory loss and lasting 2-24 hours. Its clinical features were first described by Ribot and Benon in 1882 and 1909 (1, 2), while Fischer and Adams introduced the official term and proposed diagnostic criteria in the 1960s (3). Key features of TGA include inability to form new memories and retrieve memories of past events, while exhibiting no other cognitive impairments or focal neurological or epileptic signs (4). The condition is self-limiting, with full resolution of symptoms within 24 hours.

While TGA is often preceded by emotional or physical stress (5, 6), its underlying pathophysiology is still unclear. Recent high-resolution MRI neuroimaging has revealed highly focal, transient lesions in the memory-associated CA1 field of the hippocampus in the acute stages of TGA (7, 8). Several possible underlying causes have been suggested, including migraine-related mechanisms, venous-flow abnormalities, hypoxic-ischemic events, epilepsy-related activity, cortical spreading depression, and psychological factors (4).

The following describes a patient experiencing TGA after diagnostic cerebral digital subtraction angiography (DSA). This phenomenon has been reported only a limited number of times, the last time more than 15 years ago (9). With this case report, we wish to renew and increase awareness of this rare complication and its uncertain pathophysiology.

Case report

A 53-year-old man was admitted for a scheduled followup DSA following an episode of subarachnoid hemorrhage (SAH) and subsequent coiling of a basilar-tip aneurysm six months prior (see Figs. 1A and 1B). After coiling of the aneurysm, the patient received standard treatment: 75mg acetylsalicylic acid daily for two months and 60mg nimodipine six times daily until day 21 post-ictus because of light vascular spasms observed during the coiling procedure. The patient was otherwise regarded as healthy, without any other history of disease, and suffered no significant sequelae after the SAH.

The physical examination and vital parameters prior to the followup DSA were unremarkable. The followup DSA was performed under local anesthesia with two injections, each with a volume of 7 ml of nonionic iohexol (Omnipaque ®, GE Healthcare), injected by hand in the left vertebral artery using a 5 fr. JB1-catheter. This demonstrated a normal course and caliber of the left vertebral artery, the

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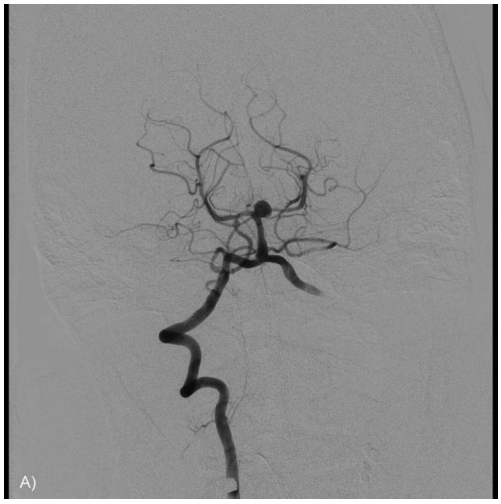

Figure 1A. The patient's cerebral angiogram before the coiling procedure.

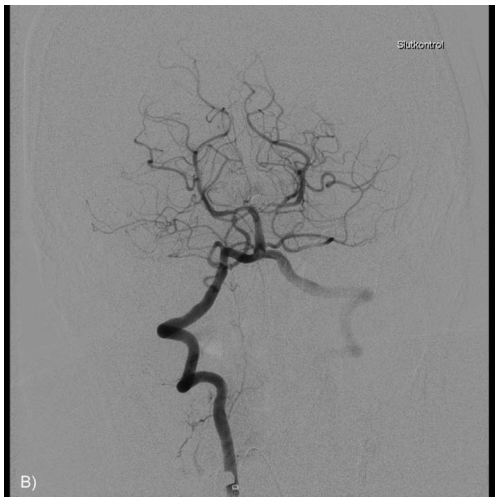

Figure 1B. The patient's cerebral angiogram, immediately after coiling.

distal right vertebral artery, the basilar artery, and the posterior circulation. Coil compaction into the neck of the aneurysm was noted consistent with a Raymond-Roy type B recurrence (see Fig. 1C). No vascular spasms were observed. Conscious sedation was not administered.

Two hours after the procedure, the patient developed sudden-onset global amnesia. A detailed neurological examination revealed that the patient was awake and alert, partly oriented in personal data, but not in location or time. He did not know the reason for his hospital admission, what tests and procedures had been performed, or how or when he had been transported to the hospital.

The patient was unable to acquire and retain new memories and repeated the same questions concerning his situation over and over again. He could state his address and the names of family members, but could not recall his

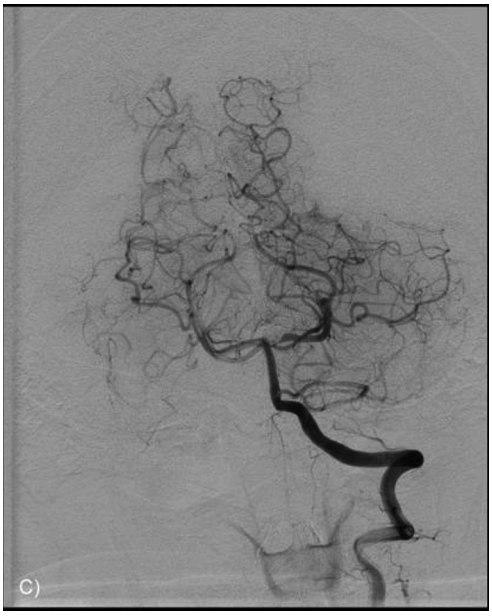

Figure 1C. The patient's cerebral angiogram one year after coiling.

profession or when he had last seen his family. While being fully aware of his memory loss and expressing puzzlement over his condition, he did not show any signs of anxiety. The remaining detailed neurological examination was otherwise unremarkable, without any other focal neurological signs or symptoms. The patient was tentatively diagnosed with TGA and transferred to the neurosurgical semi-intensive unit for further observation. Knowing the self-limiting and benign nature of TGA, no additional neuroimaging procedures were performed. The condition gradually improved and was fully resolved after 22 hours. A clinical control one week after the angiography revealed no cognitive or neurological deficits. During the control, the patient stated that the last thing he remembered before awakening in the semi-intensive unit was being prepped for the angiography.

Discussion

The symptoms presented in the above-described case comply with the diagnostic criteria for TGA proposed by Caplan (10): anterograde amnesia, no clouding of consciousness or loss of personal identity, no other cognitive impairment or focal or epileptic signs, no recent history of head trauma or seizures, and full resolution within 24 hours.

A formal PubMed literature search including (but not limited to) the following terms-- "transient global amnesia," "TGA," "amnesic syndrome," "digital subtraction angiography," and "cerebral angiography" in various combinations--uncovered only 15 case-report observations of isolated TGA following diagnostic cerebral angiography with nonionic contrast agent (9, 1-17) (see Table), the last of which was published in 1997 (9). A prospective analysis of