

Headache as a Symptom of Carotid Web

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Abstract - Headache is a frequent symptom in emergency department, especially in patients with hypertension. Carotid web, also known as the variant of fibromuscular dysplasia (FMD), is a rare disorder, found in only 1- 1.2 % of patients undergoing angiography, and it should be searched for in patients with cryptogenic stroke. We present a female hypertensive patient presented to emergency department with headache and visual symptoms, in whom further work-up revealed carotid web. A 46 years old female patient presented to the ED with headache occurring few days before the examination. It was a constant left temporal headache accompanied with flashes in the right half of the visual field. History taking revealed well-controlled hypertension with calcium channel antagonists. The first manifestation of hypertension was eclampsia during pregnancy. In emergency department normal neurologic status was obtained, brain CT scan was normal. Neurosonological examination revealed right carotid web, confirmed by MSCT angiography.

Key words: carotid artery diseases; fibromuscular dysplasia; headache; hypertension

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Introduction

Fibromuscular dysplasia (FMD), a non-atherosclerotic and non-inflammatory disease that can lead to stenosis and/or aneurysm of medium-sized arteries, is rare disease that mainly affects the distal extracranial internal carotid and renal arteries. FMD most commonly affects middle-aged women [1]. Cerebrovascular FMD is often unrecognized due to non-specific symptoms such as migraines, headaches, dizziness or tinnitus, while in more severe presentations such as TIA or stroke due to dissection of a craniocervical artery or aneurysm rupture, it is more often recognized

[2]. Recently, the carotid web has been recognized as a cause of stroke as well as its recurrence [3].

Subjects and methods

The 46 years old female patient, presented to the emergency department because of a headache that occurred a few days before the examination. It was constant, localized left temporally, in the form of pressure and initially with accompanying flashes in the right half of the visual field. Several years ago, during pregnancy, she was diagnosed with preeclampsia but since then the blood pressure values have been well regulated by antihypertensive therapy. Apart from that, the rest of the medical history was inconspicuous. The patient is on permanent therapy with amlodipine, she is a non-smoker and has no drug allergies. During examination in the emergency department no abnormalities were observed in neurological status. Patient complained of a, previously mentioned, headache and high blood pressure values were measured

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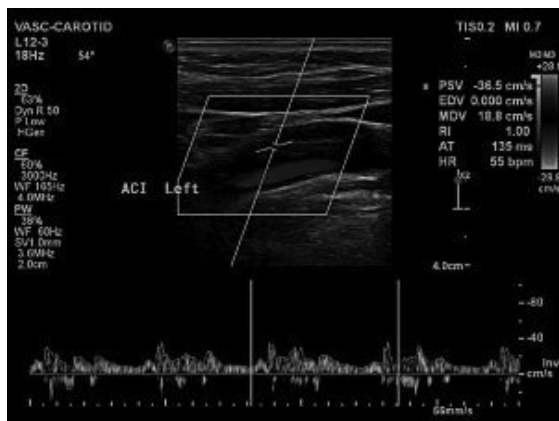


Figure 1. Suspicious dissection of the left internal carotid artery on the colour Doppler

(200 / 120 mmHg). Complete laboratory tests and emergency CT scan of the brain were performed. All findings were within normal values, including CT scan of the brain. The patient was admitted to the hospital for further treatment. Colour Doppler of carotid and vertebral arteries was performed the same day and the initial finding aroused the suspicion of dissection of the left internal carotid artery (Figure 1), but on further examination, on a transverse section, it was observed that there was actually no double lumen but a certain narrowing. Furthermore, CT angiography was also performed and it verified the bulging of the wall in the left internal carotid artery, the so-called carotid web, which is a rare form of FMD (Figure 2). During the hospitalization, the patient received antihypertensive therapy with acetyl salicylic acid 100 mg. An ultrasound of the renal arteries was also performed but did not show any abnormalities in the appearance of blood vessels or flow rates. The headaches completely regressed, blood pressure was within normal values and the neurological status was without abnormalities so the patient was discharged with amlodipine 5 mg and acetylsalicylic acid 100 mg and regular neurological follow-up.

Discussion

Word web was first used in 1973 to describe an intravascular finding on angiography. Today carotid web represents nonatherosclerotic fibrous bands that arise along the posterior wall of the carotid artery. These structures

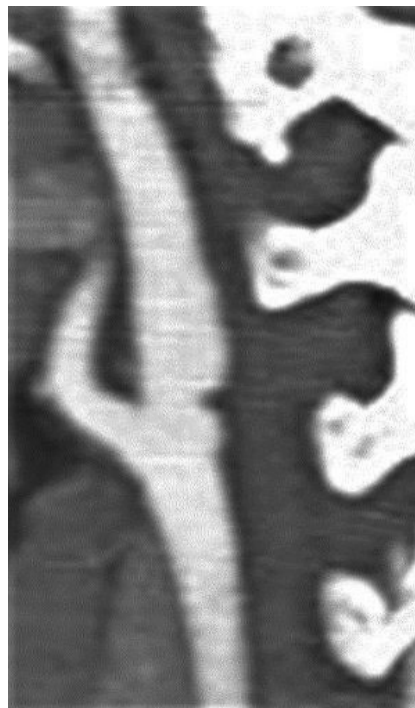


Figure 2. CT angiography with visible carotid web

are essentially fibroelastic thickening of the arterial intima that appear on radiological and ultrasound imaging modalities as shelf-like or triangular-shaped intraluminal formations. Carotid webs also have been known as an atypical variant of FMD, where the tunica intima is dominantly affected not the media, common classic variant [4]. The prevalence of carotid web is estimated to be approximately 1,2 %, but it is probably often overlooked. This data is important because carotid web can be an important cause of ischemic stroke, especially in patients with no other clear mechanism of stroke. According to research, most patients are women aged around 50 years and most of the detected patients had stroke, around 60 %. Also, high percentage of stroke recurrence is recorded but for example patient that underwent carotid endarterectomy remained stroke-free during the follow-up [3]. Because carotid web is intimal variant of FMD in most cases

other diagnostic procedures should also be performed, more specifically, other blood vessels should be examined and patients should be monitored regularly [3]. The imaging method of choice in non-invasive detection of carotid webs is CT angiography [4].

The carotid web may be an important cause of ischemic cryptogenic stroke and may present a high risk of recurrent stroke. Intimal variant FMD may be the pathologic diagnosis in most cases. The purpose of this the case was to present rare form of FMD but also rare neurological findings. It is necessary to explore this potential cause of ischemic stroke

References

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especially in younger patients an importance is manifested precisely in the increased risk of stroke recurrence.

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Conflict of interest

None to declare.

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