Case Report

Anomalous Branch of Extra-Cranial Internal Carotid Artery: Reason for Confusion in Duplex Mapping Diagnosis

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Abstract

The aim of this case report is to make attention for existence of anatomical variation in extra-cranial internal carotid artery (ECIC) that can confuse the duplex mapping diagnosis by simulating the presence of ulcerated plaque.

Keywords: Anomalous Branch; Ulcerated Plaque

Introduction

There are few case reports of anomalous branches from extra-cranial portion of internal carotid artery. Occasionally there are reports of anomalous origin of the ascending pharyngeal artery and occipital artery [1,2]. Other articles indicate the presence of persistent proatlantal artery [3]. Duplex mapping is the most widely method used for diagnosis and follow-up of patients with carotid artery disease. [4] Knowing that may be encountered anomalous branches in ECIC can help sonographer to make more accurate diagnosis in carotid disease. We did not find any published article that describes diagnostic confusion by presence of anomalous branch ostium in ECIC simulating atheroma ulceration. That is our aim, describe a case, which for duplex was diagnosed as an ulcerated plaque in ECIC but for CT angiography it was an ostium of anomalous branch in ECIC.

Case Report

Patient male, caucasian, 58 years old, asymptomatic, in routine follow-up tests for monitoring hypercholesterolemia was submitted to carotid and vertebral color duplex examination which verified presence of non-calcified plaque with ulceration on the origin of the left internal carotid artery without significant hemodynamics repercussions (figure1). Patient was referred for vascular surgery evaluation that indicated a diagnostic workup with angiography by multislice computed tomography (CT). Detailed study in the transverse cuts and 3D reconstruction detected it was not a plaque with ulceration but an anomalous branch arising from the left internal carotid ostium site (figure 2). Patient was enrolled in clinical treatment with follow-up including cholesterol levels and remains asymptomatic.

Discussion

The presence of anomalous branch in ECIC is an anatomical variation that should be conceived by sonographers and vascular surgeons [5] since, as demonstrated in this case, may lead to plaque ulceration wrong diagnosis and can make an useless intervention.

Figure 1: Doppler ultrasound with ulcerated plaque image.

Figure 2: CT angiography with anomalous branch in internal carotid.
References


