Case Studies

Neuroimaging of Takayasu Arteritis in a Patient with Ulcerative Rectocolitis

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Background: Takayasu arteritis (TA), also known as aortoarteritis and pulseless disease, is an autoimmune, idiopathic, large-vessel vasculitis that primarily affects the aorta and its major branches, the coronary arteries, and the pulmonary arteries. *Methods:* This is a peculiar clinical and radiological pattern of TA in a young female Caucasian. Her medical history included diagnosis of ulcerative rectocolitis at the age of 14. Because of the occurrence of anemia and exacerbation of rectocolitis, she had started infliximab associated with low doses of cortisone and mesalazine. Three months before admission, therapy with infliximab was discontinued because of the onset of fever, sore throat, and the increase in the neck pain. Imaging is crucial to achieve a proper diagnosis and the main differential diagnosis of this setting is arterial dissection. Magnetic resonance angiography (MRA) and color Doppler sonography (CDS) have been able to demonstrate rare but possible arteriovenous fistula in TA patients. This is the first report on arteriovenous fistula of cervical venous plexus in TA patients. *Conclusion:* (1) TA has to be suspected in young woman with neck pain, even without neurological symptoms. (2) Magnetic resonance imaging and CDS can depict wall thickening and abnormal caliber in the involved vessels. (3) MRA and CDS are able to demonstrate rare but possible arteriovenous fistula in TA patients. (4) Rectocolitis therapy could be a trigger factor of wall vessel involvement. **Key Words:** Takayasu arteritis—vasculitis—ultrasonography—magnetic resonance—computed tomography.

Introduction

We describe an arteriovenous (AV) fistula of the neck in a patient with Takayasu arteritis (TA) and ulcerative rectocolitis. Color Doppler sonography (CDS) and magnetic resonance findings led to differential diagnosis with dissection.

Case Report

A 29-year-old female Caucasian presented at our institution in October 2015 with a 9-month history of progressive right-sided neck pain. Her medical history included diagnosis of ulcerative rectocolitis, treated with infliximab, low doses of cortisone and mesalazine from

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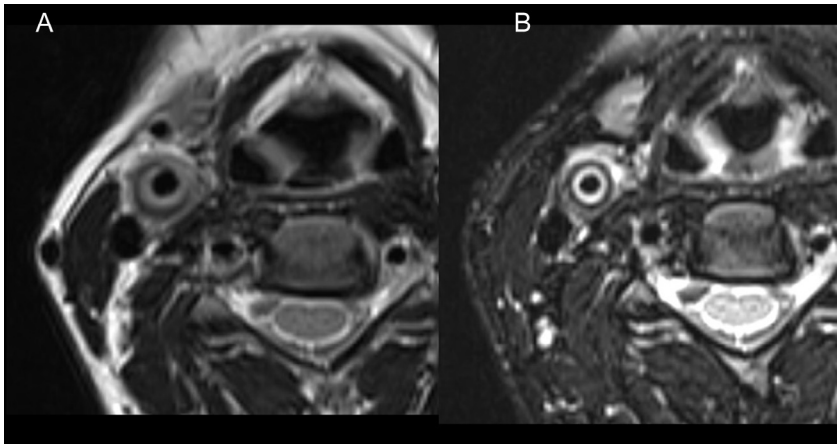

Figure 1. *(A and B) T2-weighted axial images confirmed concentric thickening of right common carotid artery and internal carotid artery, with hyperintensity in the intima-media complex, low signal in the adventitia, and hyperintensity in the perivascular tissues.*

January 2015. Three months before admission, therapy with infliximab was discontinued because of the onset of fever. Clinical examination showed right carotidynia, upper limbs claudication, and systolic blood pressure difference between left and right arms. Neurological examinations were normal. Cervical spine magnetic resonance imaging (MRI) excluded radicular compression, but demonstrated right internal carotid artery (ICA) wall thickening (Fig 1). A carotid dissection was suspected.

Computed tomography angiography confirmed right ICA stenosis (Fig 2, A) but wall thickening was demonstrated by MRI coronal T2-weighted image (Fig 2, B). No ischemic events or any other intracranial signal abnormality was demonstrated on diffusion-weighted brain MRI.

CDS showed hypoechoic thickening of the right common carotid artery (CCA) and ICA, with inability to recognize the media-adventitia and the adventitia-perivascular tissue interfaces (i.e., Macaroni sign). Moreover, CDS demonstrated sporadic systolic peaks of low speed (stump flow) (Fig 3, A-C) and an abnormal mixed AV flow in the right cervical venous plexus, suspicious for AV fistula.

Multiphase contrast-enhanced magnetic resonance angiography (MRA) revealed an arterial flow in a cervical venous plexus, according to the CDS findings (Fig 4).

Clinical, laboratory (increased C-reactive protein and antinuclear antibodies title, as well as human leukocyte antigen [HLA] B44, B52, DR15, and DR16 positivity), and imaging findings led to the diagnosis of type I TA, limited to the aortic arch and its branches. The Indian Takayasu Clinical Activity Score (ITAS2010) was used as a measure of clinical disease activity[1] (score was 16/51 at baseline).

The patient received mesalazine and prednisone, with complete resolution of her symptoms. At 3-month follow-up with CDS, interfaces between adventitia and

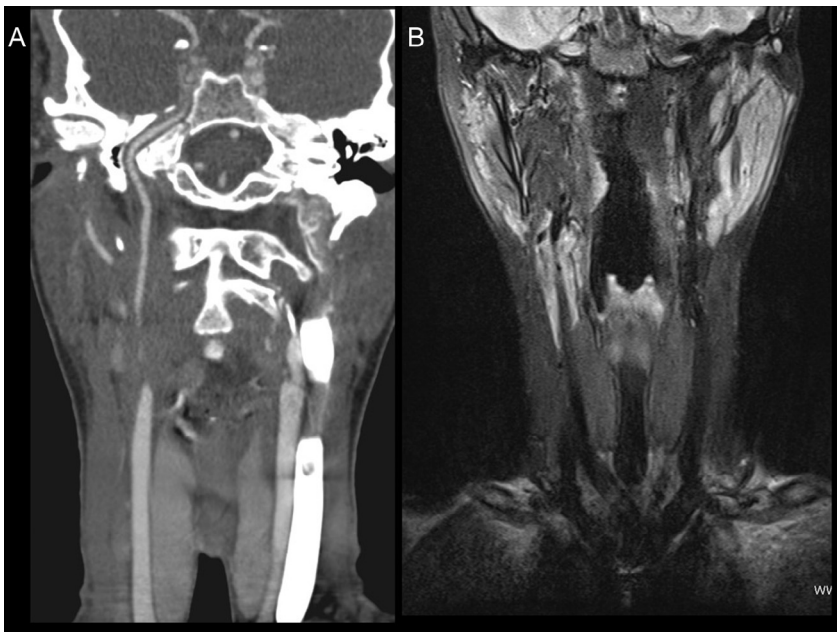

Figure 2. *(A) Coronal reconstructed computed tomography angiography and (B) coronal T2-weighted image with fat saturation magnetic resonance images demonstrated nearly complete occlusion in the bulbar segment of the right common carotid artery and right internal carotid artery thickening, respectively.*