

# Recurrent cerebrovascular accidents as a manifestation of giant-cell arteritis

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### Abstract

Giant-cell arteritis is a vasculitis that affects the large- and medium-caliber arteries, particularly the aorta and its cranial branches, which explains some of its classic symptoms (e.g. amaurosis, jaw claudication). However, other manifestations can also be expected. The authors therefore present two clinical

cases in which the diagnostic suspicion was based on recurrent CVA, associated with a sustained increase in various inflammatory parameters.

Key words: Giant-cell arteritis, Vasculitis, recurrent CVA, systemic inflammatory reaction, therapeutics.

### Introduction

Giant-cell arteritis is a vasculitis that affects the large- and medium-caliber arteries, particularly the aorta and its cranial branches. It occurs predominantly among females aged over 50 years.<sup>1,2</sup>

It is of multifactorial etiology, including genetic susceptibility (associated with a greater histocompatibility complex), an infectious agent (parainfluenza virus, parvovirus B19, *Mycoplasma pneumoniae* and *Chlamydia pneumoniae*...) and a process of immune deregulation of the endothelial environment.<sup>1,3,4</sup>

The pathogenic lesion consists of an inflammatory granulomatous (mononucleated) reaction of the medium layer of the artery, with disruption of the internal elastic lamina, releasing various cytokines which compete for an occlusive luminal hyperplasia.<sup>1,5,6</sup>

Symptoms generally include headaches, jaw claudication, rheumatic polymyalgia, visual alterations and low fever, its symptomatology, generally subclinical, being highly varied.<sup>1,2</sup>

Analytical symptoms include an increase in the speed of erythrocyte sedimentation rate and of the C-reactive protein, anemia, thrombocytosis and leukocytosis, increase in fibrinogen and hypergammaglobulinemia.<sup>1,5,6</sup>

It is necessary to exclude other rheumatoid/auto-immune, infectious and neoplastic pathologies, in the context of systemic disease, particularly because the typical hard, erythematous, painful appearance of the temporal artery often does not occur.<sup>1,2,5,6</sup>

Although the association between CVA and giant-cell arteritis is described in the literature, since it involves cranial branches of the aorta, the frequency with which it occurs is not well-established, neither is the probability of it being the first manifestation of vasculitis.<sup>2,4,7,8</sup>

We present two clinical cases in which the diagnostic suspicion was based on recurrent cerebrovascular accident accompanied by analytical parameters suggestive of systemic disease.

### CASE 1

Male patient, Caucasian, 68 years of age, with a personal history of hypertension (controlled with diet), benign hyperplasia of the prostate and degenerative osteoarticular disease, habitually medicated with tamsulosin (Omnic®) and non-steroid anti-inflammatories drugs.

Patient was hospitalized due to 4 to 5 brief episodes of dizziness in 12 h, accompanied by left hemiparesis and transitory deviation of the labial commissure. Emergency CT-EC revealed vascular leukoencephalopathy.

On the 3rd day of hospitalization, he described

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Received for publication on 22<sup>nd</sup> December 2006

Accepted for publication on 30<sup>th</sup> June 2009

a sensation of loss of consciousness, without any causative factor or accompanying symptom; left hemiparesis was observed, and dysarthria, from which he recovered spontaneously within 24 h. A brief neurological exam did not show any other alterations, besides the above-mentioned transitory deficits, and funduscopy, carried out on the first day of hospitalization, did not reveal any significant alterations in both ocular fundi.

CT-CE at 48 h did not show any alterations, and NMR-CE was carried out, revealing microangiopathic leukoencephalopathy with multiple, recent, bilaterally dispersed small lacunar ischemic foci.

Analytically, patient presented Hb 11.6g/dl, normocytic, normochromic and without anisocytosis, leukocytes 10,600/mm<sup>3</sup>, platelets 450,000/mm<sup>3</sup>, ESR 102mm, CRP 12.6mg/dL. The study of autoimmunity, complement and circulating immune complexes was negative, as were the serologies for syphilis, HIV, CMV, EBV and hepatitis. Myelogram and osteomedullary biopsy were performed, excluding a suspicion of lymphoplasmocytary disease.

Echo-doppler of the veins of the neck revealed generalized atheromatous overload. Echo-cardiogram showed a slightly dilated left ventricle, good global and segmentary systolic function and absence of intracavitary thrombi.

The patient was discharged asymptomatic, without neurological sequel, maintaining, on discharge, high CRP and ESR, without leukocytosis or neutrophilia.

One month after discharge, the patient was readmitted with a new episode (reversible) of left hemiparesis and dysarthria, accompanied by fever for around 15 days of evolution (subfebrile temperature, particularly during the evenings) and complaint of headache, particularly in the left parietal-temporal region. Patient reported no signs of inflammation of the temporal arteries. ESR and CRP remained high, without any other laboratory alterations.

In the context of recurrent cerebrovascular accident, bearing in mind the symptoms (dizziness, headaches, general, worsening malaise) of the patient, and after excluding other causes of elevation of the inflammatory parameters, biopsy of the temporal artery was carried out, which showed necrosis of the internal elastic, dissection of the wall and formation of aneurism, and inflammatory infiltrate rich in eosinophiles and multinucleated giant cells.

## CASE 2

Female patient, aged 76 years, Caucasian, with a personal history of arterial hypertension (diagnosed more than twenty years ago, predominantly systolic, poorly controlled and irregularly medicated), cerebellar stroke (two years previously) with complications (ataxia) and osteoporosis; usually medicated with calcitonin, calcium, iron (duration of therapy not known) and acetylsalicylic acid 125 mg/day.

The patient was admitted with right homonymous hemianopsia and worsening of the ataxia. Emergency CT-CE revealed hypodense left occipital and right cerebellum areas suggestive of recent ischemic vascular accident.

In the ward, patient manifested persistent complaints of left parietal-temporal headaches, dizziness, imbalance and alterations in vision (decreased visual fields and floating spots); the temporal region showed no inflammatory alterations, bilaterally. The summary neurological exam revealed ataxia with mild dysarthria and dysmetria; right homonymous hemianopsia, and decreased visual acuity; funduscopy revealed bilateral grade II hypertensive retinopathy.

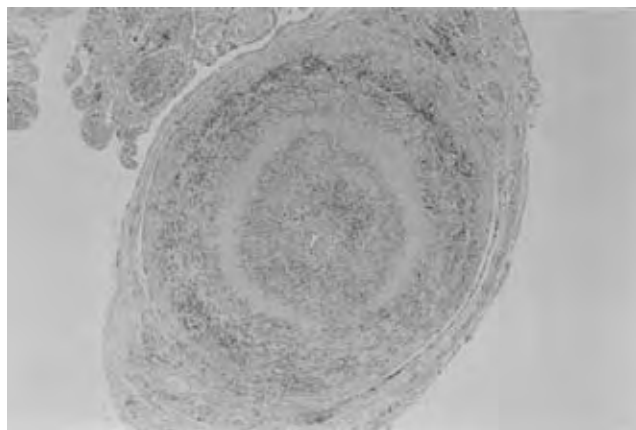
Analytically, patient presented Hb 9.5g/dL, microcytic (mixed deficit of iron, vitamin B12 and folates, probably due to malnutrition); leukocytes 5500/mm<sup>3</sup>; blood platelets 586,000/mm<sup>3</sup>; CRP 6.6mg/dL; ESR 125mm; hypergammaglobulinemia without monoclonal peak.

The study of autoimmunity, complement and circulating immunocomplexes was negative, as were the serologies for syphilis, HIV, CMV, EBV and hepatitis. Neoplasia of the gastro-intestinal tract was excluded by upper digestive endoscopy and colonoscopy, tests for hidden blood in the feces being consistently negative.

Echo-Doppler of the veins of the neck revealed atheromatous plates at the beginning of both internal carotids, suggesting stenosis of 20% on the right and less than 10% on the left side. Echocardiogram showed good global systolic function and non-dilated, non-hypertrophic left ventricle, without intracavitary thrombi.

On day 20 after admittance, the patient suffered an episode of dysarthria, alterations in swallowing, central right facial paresis and decrease in muscle strength on the right side. CT-EC identified a new ischemic lesion on the left medial cerebellar pedunculus.

Biopsy of the temporal artery was performed,



Biopsy of the temporal artery: Thickening and near obliteration of the vascular lumen

FIG. 1

which showed thickening and near obliteration of the vascular lumen, with extensive inflammatory reaction and multiple giant cells. (Fig. 1)

After obtaining the result of the biopsies, both patients began corticotherapy (1 mg/kg/day), with regression of the symptoms and normalization of the ESR and CRP. In the outpatient clinic, patient was gradually weaned off the medication, interrupted by the reappearance of symptoms, with a slight decrease in dose.

Two years after the start of therapy, no repetition of the CVAs was seen, with both patients remaining asymptomatic after corticoid withdrawal.

## Conclusion

Given its incidence in this age group, it is important to consider the possibility of this disease in individuals aged over 60 years, particularly when there is clinical and laboratory evidence of systemic disease.<sup>1,2,9</sup>

Diagnostic presumption is important, even where there are no evident signs of inflammatory of the temporal arteries. The differential diagnosis should exclude infections, neoplasias and other chronic inflammatory/rheumatoid diseases.<sup>1,2,5</sup>

Temporal arterial biopsy was conclusive in the two cases, despite the arterial involvement being segmentary.<sup>1,2</sup>

Although not the most frequent (or so-called “classic”) manifestations of the disease, cerebral/ischemic vascular accidents, without the concomitant cardiovascular pathology that justifies them, strongly

indicate a component of vasculitis.<sup>7,8,10</sup>

In the two cases, despite the evident atherosclerotic disease, there appears to be a vasculitic component in the etiology of CVAs (particularly in the median and posterior cerebral arteries territories), a fact which is validated by the response to corticoid therapy.

The response to the corticoid therapy is rapid, but the immune disturbance remains; in the corticoid weaning off phase there are recurrences, therefore it is recommended that this is done slowly, over a period of at least three years.<sup>1,2,5,6</sup> ■

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