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An atypical case of giant cell arteritis revealed by pernicious emesis

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Abstract

Introduction: We present an atypical onset of Giant Cell Arteritis (GCA) characterized by persistence of emesis, without classical signs of this vasculitis.

Case description: A seventy-years old woman came to our attention for a condition of persistent vomit. After a careful investigation, no typical symptoms of vasculitis were evident in the story (e.g. no headache, nor distended temporal arteries). The only accompanying signs were an intermittent fever, a slight dysmetria and occasional dizziness, without ocular alterations or lack of chewing. Initially, a cerebrovascular disease was suspected. A series of radiological investigations and laboratory tests were performed, revealing an unsuspected picture of GCA.

Discussion: The main instrumental examinations included a Doppler Ultrasound of temporal arteries, a FDG-PET and a brain MRI with contrast medium: the set of all reports clearly showed a picture of florid vasculitis. In particular: the Doppler ultrasound of temporal arteries evidenced an inflammatory perivascular oedema, extremely suggestive for GCA. Both PET-FDG and MRI records demonstrated the phlogosis of great arterial vessels wall. Even without histological confirmation and poor adherence to clinical criteria of disease, a diagnosis of great arteries vasculitis was considered sufficiently clear. A timely steroid treatment quickly reverted symptoms, mitigating risks of irreversible complications.

Conclusions: Despite the GCA diagnosis still relates to biopsy confirmation, an adequate instrumental study could replace such invasive survey in most cases. Particularly non-invasive imaging techniques like ultrasound may replace the need for biopsy of the temporal arteries in the future as the correlation between them has been shown to be excellent.

Keywords

giant cell arteritis; cerebrovascular disease ; ultrasound

Background

Giant Cell Arteritis (GCA) is one of the most frequent vasculitis among North European people, usually less common in Mediterranean population [1]. The incidence rate is about 20 cases per 100000 population among over fifty [1], with double prevalence for women. Temporal artery biopsy still

represents the diagnostic *gold-standard*, but we currently have valid diagnostic techniques that could limit the use of invasive surveys.

Case Presentation

A seventy-years old woman came to our attention because of the persistence of a severe emesis. She had continuous episodes of vomit either spontaneous or caused by the attempt to ingest food or liquids, such as to prevent even the pharmacotherapy intake.

Her recent clinical history told about a weight loss of approximately 2 kg in two months. After a careful investigation, there was neither predisposition to rheumatologic, nor autoimmune disease. It was reported ex-smoking status, arterial hypertension, not specified depressive syndrome and an episode of vestibular neuritis in 2013, with sporadic residual dizzying accesses.

The emetic symptoms appeared about few weeks before, during a hospitalization for fever of unknown origin. The fever was predominantly in the morning, intermittent, with spikes up to 38.2°C, promptly responding to paracetamol. Blood tests reported thrombocytosis (with platelet peak of $848x10^9$/L) and first diagnosis of monoclonal gammopathy of undetermined significance (MGUS), with monoclonal IgG lambda component, in oligoclonal context, negative Bence-Jones proteinuria and weakly positive beta-2 microglobulin levels (2.8 mg/dl). Besides, neutrophilic leukocytosis and increase of C-reactive protein (153 mg/L) was evidenced, with negative blood cultures and procalcitonin values. After few days of hospitalization, an episode of syncope occurred: initially, a condition of orthostatic hypotension was assumed, because of a sudden transition from clino- to ortostatism. But after a while a self-limiting vertiginous syndrome appeared, accompained by emesis and deficit of right eye abduction, spontaneously resolved within a short time. A Computed Tomography (CT) scan of the brain and an intracranial vessels Angio-CT showed a small right cerebellar hypodense lesion, as recent ischemic injury, and a vertebrobasilar system hypoplasia (Figure 1).

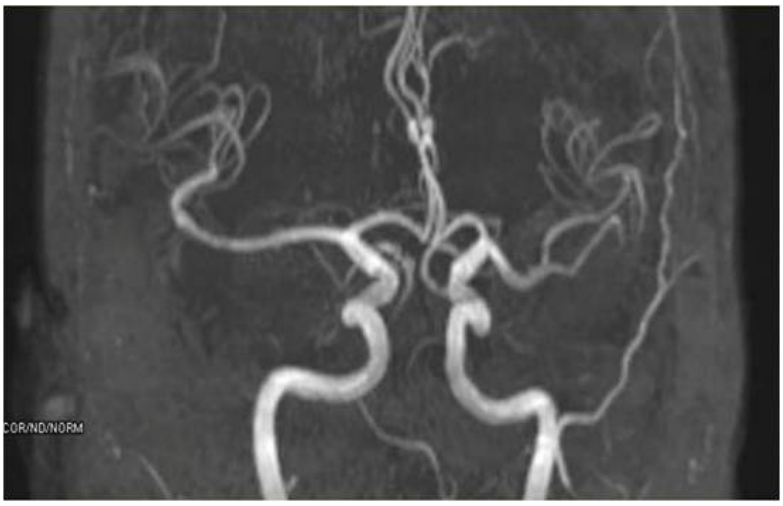

Figure 1: Image from intracranial vessels angiography

The clinical features suggested a transient neurological disorder due to hemodynamic vertebrobasilar insufficiency with coexistent thrombocytosis (in a MGUS framework). Therefore the patient was discharged from hospital: antiemetic therapy with metoclopramide was established, and acetylsalicylic acid and atorvastatin were also added to therapy, while the fever became intermittent and less frequent.

Despite the supposed improvement, the woman was brought back to the emergency room within a few days because of the recurrence of a serious vomit condition. In ER a slight dysmetria and urinary retention were also found. A control CT brain scan showed a pontine paramedian *lacuna* preaviusly unknown, without other detectable neurological signs. Then she was admitted to our medical department. At entrance she appeared stable, afebrile with stationary vital signs. Entry blood tests showed leukocytosis (12.20 x 10^9/L) and normocytic anemia (Hb 10,7 g/dl), no thrombocytosis, mild hyponatremia and hypokalemia, probably by emetic status. Next exams reported a C-reactive protein of 144 mg/dl, negative anti-neutrophil cytoplasmic antibodies (ANCA) and extractable nuclear antigens (ENA) search.

We restored the home therapy with lorazepam, sertraline, ramipril and amlodipine, metoclopramide, atorvastatin and acetylsalicylic acid; we also added intravenous therapy with fluids and electrolytes. Although our best efforts the patient continued to experience nausea and vomit, with the onset of a progressive and marked asthenia. Moreover, occasional vertiginous symptoms appeared.

Our initial suspicion was that of an ischemic injury that irritated the chemoreceptor trigger zone, such as to justify the severe emesis. However, in the differential diagnosis we must exclude: An infectious disease with meningeal localization or asubacute encephalitis; a hematologic disease or the paraneoplastic manifestation of an occult neoplasm; finally, a gastrointestinal disorder, such as biliary litis or an inflammatory disease of the biliary tract.

We undertook diagnostic procedures, aimed at investigating these pathological hypotheses. Figure 2 FDG-PET image, with abnormal hypermetabolism in thoracic aorta.

The diagnostic process proceeded first on the neurological side. The woman was subjected to the expert neurologist evaluation, who made several diagnostic hypotheses including those of a cerebrovascular vasculitis in a broader context of systemic vasculitis. This kind of evaluation was suggested by the analysis of a previously Magnetic Resonance Imaging (MRI) of the brain, along with the clinical presentation of the patient. The neurlogist advised the execution of a MRI with contrast medium, a doppler ultrasound of temporal arteries and a FDG-PET, for suspected Giant Cell Arteritis (GCA). Furthermore, he recommended the exclusion of lymphomatous and infectious processes through analysis of the Cerebrospinal Fluid (CSF). The Doppler ultrasound of the temporal arteries showed inflammatory perivascular oedema, bilateral with prevalence on right vessel. The FDG-PET study revealed an intense and widespread hyper metabolism in the vertebral and subclavian arteries and thoracic aorta (Figure 2). At last, a MRI with contrast medium was carried out, detecting a modest reduction of cerebellar and pontine focal lesions, in addition to the evidence of intake of the contrast medium by vessel walls of the internal carotids and vertebral arteries. These images were clearly suggestive of a vasculitic process.

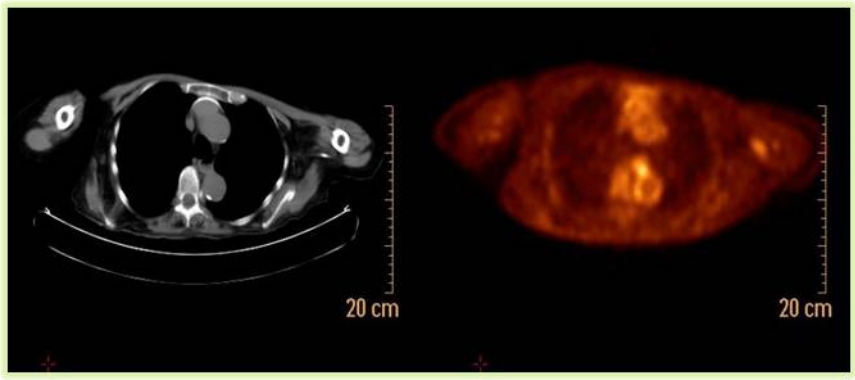

Figure 2: FDG-PET image, with abnormal hypermetabolism in thoracic aorta.

At the same time, blood tests and the lumbar puncture performed earlier were negative for Herpes simplex 1/2 virus, EBV, CMV, VZV, Toxoplasma, Rickettia conorii and mooseri, excluding a large panel of bacterial and viral agents, possibly implicted in subacute inflammatory phenomena.

The blood tests showed an increase of inflammatory markers, with C-reactive Protein spike of 265 mg/dl and an Erythrocyte Sedimentation Rate (ESR) of 51 mm/hour.

The examination of the bone marrow, peripheral blood smear and immunophenotype showed no acute pathological phenomena such as to justify the clinical findings (in particular, no granulocyte-line alterations).

Eventually the patient was subjected to a series of other instrumental examinations to exclude gastrointestinal disease: Esophagogastroduodenoscopy (EGDS), abdominal ultrasound and Colangio-MRI showed findings did not justify the clinical picture, only demonstrating antral gastris, hiatal hernia and a millimeter gallstone, in a context absolutly free from illness.

All available information confirmed the hypothesis of GCA, even if it is interesting to note how the clinical presentation of the patient was completely lacking of the common clues that orient the diagnosis (Table 1).

Table 1: FDG-PET image, with abnormal hypermetabolism in thoracic aorta.

1. Age of onset ≥ 50
2. New Headache
3. Temporal artery abnormality (tenderness, decreased pulsation etc, not releated to arteriosclerosis)
4. Erythrocyte Sedimentation Rate ≥ 50 mm/h
5. Abnormal artery biopsy

*For the diagnosis, at least 3 of 5 criteria must be positive. *American College of Rheumatology 1990 GCA Classification Criteria;Hunder GG. Arthritis Rheum 1990; 33: 1122-8*

Discussion

Giant Cell Arteritis Arteritis (GCA) is one of the most frequent vasculitis that affects the major arterial vessells. It usually appears with:

- Headache, typically with temporal localization, found in about 2/3 of patients [1], less frequently an occipital or generalized cephalalgy; besides, it is little responsive to simple analgesics.

- The temporal arteries may be turgid and/or tortuous and prominent.
- Pain in the jaw during mastication, also known as *mandibular claudicatio*, found in about 50% of cases, unilateral or more often bilateral, variably associated with facial pain [2].

In our case, the patient did not experience any kind of headache, certainly not in the classical expression of CGA. She only referred sporadic episodes of her usual headache of varying duration, but light and without a particular location, responsive to mild analgesic therapy, such as paracetamol. Her temporal arteries lacked of any phenotypic aspects of arteritis: Not evoked pain to their palpation, no evidence of tortuosity nor hardening. Moreover, there was no symptoms of mandibular claudicatio, nor evidence of fatigue to chew with rapid functional exhaustion. Hence, no clinical signs recalled aspects of GCA.

So the first clinical impression did not militate in favour of GCA. Nevertheless, on closer inspection, it is possible to find elements that actually lead back to this pathology. For instance, sometimes the systemic manifestation (fever, fatigue, weight loss etc) may be the only presentation of pathology [2]; neurological manifestation are uncommon, but still present with stroke evidence in 3-7% of cases. Anyway a vertebrobasilar injury is more frequent in GCA-related strokes then in other kind of those ones [3].

Furthermore, vestibolo-auditory impairment is often found as side finding in prospective studies. Infact, about 89% of CGA patients show an abnormal answer to vestibular tests, with 52% people experience vertigo [2]. This kind of manifestation may precede other more suggestive symptoms of GCA, acting as warning sings that lead to vasculitis, limiting the dreaded risk of blindness, by a timely treatment. The damage mechanisms remain unclear and both ischemic and inflammatory dynamics seem to be implicated [4].

At last, in our patients the ESR was 51 mm/hour and C-reactive protein reached the 265 mg/dl (n.v < 9 mg/dl): CRP is an inflammation marker with higher sensitivity than ESR for GCA (86,4%), even if both of them have a very low specificity (30%) if considered alone [5].

Encouraged by the diagnostic results a diagnosis of GCA was formulated and because of the increasingly frail condition of the patient with persistent emesis, we quickly established a daily 40 mg intravenous methylprednisolone therapy. Day by day, small improvements appeared, with initial resolution of emetic symptoms and gradual recovery of orally feeding. Unfortunately after about 8 days of corticosteroid therapy the patient developed urinary sepsis, initially treated by broad-spectrum antibiotic therapy. After few days there was a relapse of symptoms with outbreak of septic shock, complicated by onset of atrial fibrillation with high ventricular rate and arterial hypotension. Simultaneously positive blood cultures for Candida albicans were found. She was transferred to the intensive care unit, where she was treated with antibiotic and antifungal therapy and vasoactive aminesto support circulation for persistent arterial hypotension. Beta-blockers were also introduced because of the finding of apical akinesia of the left ventricle (from the appearance of Takotsubo syndrome) and a levosimendan cycle was performed: Indeed, an initial echocardiographic assessment showed a FE 30-35%, mild increased cardiac troponin values at the entrance, with a peak at 1.13 mcg/L, progressively reduced until standards. Transesophageal examination ruled out the presence of endocarditis. At the ECG tracks, evidence of negative T waves at first spread, then mainly in the

anterolateral leads, while a coronay angiography excluded pathology in epicardial vessels.

The good therapeutic response allowed a gradual weaning from circulatory support therapies and after clinical stabilization, the patient was transferred back to our department. To prevent recurrence of the infection we attempted a steroid taper. However, due to an initial outbreak of emesis and hypotension, a 50 mg prednisone therapy was established again. At discharge, there was a clear clinical improvement with resolution of emetic symptoms; about laboratory tests we observed a marked drop in C-reactive protein, whose value was about 25 mg/dl; no evidence of leukocytosis. The woman was able again to feed and after being in bed for a long period, she began to mobilize and walk successfully. The patient is still in follow-up for appropriate therapeutic adjustments and diagnostic evaluations; until now his blood tests were in the standard, she is responding well to steroid therapy and she is gradually trying to return to everyday life.

Giant Cell Arteritis Arteritis (GCA) is a complex pathology with numerous manifestations. In addition to the clinical aspects, the diagnostic modalities and laboratory markers, a definitive diagnosis can be obtained by means of a temporal artery biopsy, sampling a piece of vascular tissue of at least 3 cm in order to remedy failure of findings, due to segmental inflammatory process. However, experts seem to be conflicting in part about it: Even if the biopsy still represents the Gold Standard in GCA diagnosis, it was suggested that where the Doppler Ultrasound (US) of the temporal arteries finds unmistakable signs of inflammation (f.e. the *halo sign*, as manifestation of oedema of vessel wall), you can take steroid therapy even without performing a biopsy of temporal artery [6]. The validity of this technique has been repeatedly explored. In fact a meta-analysis that examined 2036 patients from 23 studies to verify the performance of temporal arteries ultrasound [7], showed a sensitivity of 69% and specificity of 82% about the Halo sign, if compared to biopsy [7]. Other works may further justify these scientific evidence: A prospective study [8] of 55 patients by *Karahaliou et al* with suspected GCA diagnosis showed a sensitivity of 82% and a specificity of 91%[8] for temporal doppler US. At least we can mention a recent retrospective study by *Roncato et al.* that explored the validity of temporal arteris US along with biopsy, demonstrating on 30 patients with GCA diagnosis a sensitivity of 80% for US and 77% for temporal artery biopsy and a specificities of 100% for both of them [9]. Like all ultrasound examinations there is a limit due to the operator-dependency and the familiarity with the type of assessment, but of course it remains a valid and effective technique. In our case we didn't carry out the biopsy, while the CDUS was positive for arterial inflammation. The 18-FDG PET too endorsed a timely approach to therapy: Indeed this kind of examination is well-known, for its importance in diagnosis of extra cranial vascular involvement [10]. The same findings were confirmed by the MRI with contrast medium. In particular this last technique showed a great utility in a multicentre study, in which its sensitivity and specificity in detecting the disease were 78.4% and 90.4%, respectively [11]. Even the blood tests matched to the hypothesis of a generalized inflammatory process. Moreover, the evident response to steroid therapy has taken away the remaining doubts about the diagnosis of vasculitis, with a significant and progressive clinical improvement, allowing a resolution of vomiting, though the dosage used was below threshold. So in our case, despite confusing clinical presentation, absence of classic phenotype and the decision not toper form biopsy (even taking into account the precarious conditions of the patient), a diagnosis of GCA was done thanks to instrumental evidences, blood tests, natural history of illness and even a criterion of therapeutic steroid response. The validity of diagnostic tools in our possession may question now the old

dogmas: Especially the temporal artery biopsy, a diagnostic *gold standard*, but still an invasive technique, affected by potential "skip lesions", that could make appear a negative sample, despite the precence of disease. Furthermore, in our patient the diagnosis of vasculitis had several months delay, precisely because of clinical confounders. A further procrastination of adequate steroid therapy would have increased the risk of serious complications, such as blindness. In fact, about 5-15% of patients develop an Arteritic anterior ischemic optic neuropathy (A-AION), sometimes even as onset of pathology [12].This is one of the most fearsome outcome of GCA, almost always caused by the vasculitis of posterior ciliary arteries. It represents a real emergency to treat by steroids and low-dose aspirin, as soon as possible [12]. Fortunately in our case such an event has not occurred, but postponing therapeutic approach could expose to a concrete risk of permanent sequelae. Thus we have to wonder about new investigative strategies and their standardization, keeping an open mind even beside the most trivial clinical picture, able to hide unexpected pitfalls.

References

1. Gideon Nesher, Gabriel S. Breuer.Giant Cell Arteritis, Polymyalgia Rheumatica: 2016 Update. Department of Internal Medicine A and the Rheumatology Unit, Shaare-Zedek Medical Center, Jerusalem, Israel; Rambam Maimonides Medical Journal. 2016; 7: e0035.

2. Meskimen S, Cook TD, Blake RL. Management of giant cell arteritis and polymyalgia rheumatica. Am Fam Phys. 2000; 61: 2061-2068.

3. Nesher Gideon, Berkun Yaakov, Mates M, Baras M, Nesher R, Rubinow A, et al. Risk Factors for Cranial Ischemic Complications in Giant Cell Arteritis. (Baltimore). 2004; 83: 114-122.

4. Amor-Dorado JC, Llorca J, Garcia-Porrua C, Costa C, Perez-Fernandez N, Gonzalez-Gay MA. Audiovestibular Manifestations in Giant Cell Arteritis: a prospective study; Medicine. 2003; 82: 13–26.

5. Tanaz A. Kermani, Schmidt J, Crowson CS, Ytterberg SR, Hunder GG, Matteson EL, et al. Utility of Erythrocyte Sedimentation Rate and C-Reactive Protein for the Diagnosis of Giant Cell Arteritis; Semin Arthritis Rheum. 2012; 41: 866–871.

6. Schmidt WA, et al. Color Doppler ultrasonography findings in temporal arteritis. NEJ Med. 1997; 337; 1336-1342.

7. Karrassa FB, Matsagas MI, Schmidt WA, Ioannidis JP. Meta-analysis: test performance of ultrasonography for giant-cell arteritis. Ann Intern Med. 2005; 142: 359-369.

8. Karahaliou M, Vaiopoulos G, Papaspyrou S, Kanakis MA, Revenas K, Sfikakis PP. Colour duplex sonography of temporal arteries before decision for biopsy: A prospective study in 55 patients with suspected giant cell arteritis. Arthritis Res Ther. 2006; 8: R116.

9. Roncato C, Allix-Béguec C, Brottier-Mancini E, Gomberg B, Denis G. Diagnostic performance of color duplex ultrasonography along with temporal artery biopsy in suspicion of giant cell arteritis.ClinExpRheumatol. 2017.

10. Puppo C, Massollo M, Paparo F, Camellino D, Piccardo A, Zadeh Naseri MS, et al. Giant Cell Arteritis: A Systematic Review of the Qualitative and Semiquantitative methods to Assess Vasculitis with 18F-FDG PET; BMRI. 2014; 574248.

11. Klink T, Geiger J, Both M, Ness T, Heinzelmann S, Reinhard M, et al. Giant cell arteritis: diagnostic accuracy of MR imaging of superficial cranial arteries in initial diagnosis-results from a multicenter trial. Radiology 2014; 273:844-852.

12. Gonzalez-Gay MA, García-Porrúa C, Llorca J, Hajeer AH, Brañas F, Dababneh A, et al. Visual manifestation of Giant Cell Arteritis. Medicine (Baltimore). 2000; 79: 283-292.

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