Giant-cell arteritis without cranial manifestations presenting as fever of unknown origin: a diagnostic value of 18F-FDG PET/CT

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Abstract

We present a case of 68-year-old female with four months history of fever, fatigue, and weight loss. She was classified as case of fever of unknown origin. The physical examination was normal, the laboratory tests showed anemia, elevation of C-reactive protein, erythrocyte sedimentation rate and fibrinogen. The diagnosis was unclear and 18F-FDG PET/CT was performed. Images showed high glucose uptake in the wall of the ascending and descending aorta, in the walls of the subclavian arteries, abdominal aorta and proximal part of both iliac arteries. The diagnosis of GCA appeared most likely and steroid treatment was initiated. After the therapy, clinical signs disappeared, laboratory parameters normalized and follow-up 18F-FDG PET/CT demonstrated lack of glucose uptake in the vessels’ walls. We observed remission. 18F-FDG PET/CT offers a possibility for early detection of inflammation in the vessels and could be used for assessment of therapy response. Performing this nuclear imaging method in a clinical setting, where there is suspicion of large-vessel vasculitis is of great benefit for the final outcome. Clin Ter 2018; 169(6):e274-276. doi: 10.7417/CT.2018.2092

Key words: fever, giant-cell arteritis, cranial manifestations, 18F-FDG uptake

Introduction

Giant-cell arteritis (GCA) is the most frequent type of systemic vasculitis in people aged over 50 in all countries (1). There is a group of patients with GCA did not display any cranial symptoms (2). Diagnosis was therefore delayed in these patients. The nonspecificity of the 18F-FDG and the synergy of integrating functional and anatomical images with hybrid PET/CT may offer substantial benefit in the diagnostic work-up of patients with clinical suspicion for GCA without cranial manifestations (3,4). An important feature of 18F-FDG PET/CT imaging is the ability to reveal increased metabolism and functional alterations that precede the morphological changes.

In this report, we describe a case of GCA without cranial manifestations, presenting itself as fever of unknown origin diagnosed by 18F-FDG PET/CT.
Discussion

GCA and Takayasu arteritis (TA) were discussed as probable differential diagnoses. Our patient is a woman, 68-year-old. Female is predominate sex for TA, but the age at disease onset ≥ 50 years is the main criterion for GCA. Following the 1990 Criteria of the American College of Rheumatology (ACR) for the classification of GCA and TA the presenting clinical case could not be classified neither GCA nor TA (1,5). However, the imaging facilities demonstrated extracranial large-vessel involvement with an accent on aorta and its main braches. The diagnosis of GCA without cranial manifestation was accepted as the most suitable. Hubert de Boysson et al reported a group of 31 patients without any cranial symptoms, one-third of them presented extracranial manifestation and the other two-third of cases displayed constitutional symptoms (6). In this multicenter study 18F-FDG PET/CT was one of the imaging assessment for the evaluation of large arterial vessels (6). 18F-FDG PET/CT detected 84% large vessels involvement among patients’ group of no cranial GCA (6). Blockmans et al found 83% FDG vascular uptake in patients with GCA (7). They concluded that FDG uptake is a sensitive marker for GCA (7). A meta-analysis did by Soussan et al established pooled Se at 90% (95% CI: 79–93%) and a pooled Sp at 98% (95% CI: 94–99%) for the diagnosis of large-vessel inflammation in GCA patients in comparison to control group (8).
Conclusion

We presented a case of GCA without cranial symptoms, debuting as FUO. We consider the role of 18F-FDG PET/CT in the diagnostic protocol of FUO, as well as in suspected cases of large-vessel vasculitis.

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Authors’ contributions

M.B. and A.D. – study design, data collection, data interpretation, manuscript preparation, literature search. I.K., R.A., G.T.P. and K.P. – data collection, literature search. All authors read and approved the final version of the manuscript.

Conflict of interest

All authors declare: no support from any organization for the submitted work; no financial relationships with any organizations that might have an interest in the submitted work in the previous 3 years; no other relationships or activities that could appear to have influenced the submitted work.

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