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Polyarteritis nodosa presenting as leg pain with resolution of PET-images: a case report.

Polyarteritis nodosa, PET-images

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Abstract

BACKGROUND

Although FDG-PET/CT is widely used for diagnosis and follow-up of large sized vessel vasculitis, it is still not widely used for small to medium sized vessel vasculitis.

* fluorodeoxyglucose-positron emission tomography/computed tomography (FDG-PET/CT)

CASE SUMMARY

This is the case of a 68-year-old male who presented at the emergency department complaining of fever, myalgia, and bilateral leg pain of over two weeks duration, with elevated levels of C-reactive protein. He was subsequently admitted and despite the absence of clinically significant findings, the patient continued to exhibit recurrent fever. A fever of unknown origin workup, which included imaging studies using FDG-PET/CT, revealed vasculitis involving small to medium-sized vessels of both lower extremities, demonstrated by linear hypermetabolism throughout the leg muscles. The patient was treated with methylprednisolone and methotrexate after diagnosis leading to the gradual resolution of the patient's symptoms. Three weeks later, a follow-up FDG-PET/CT was performed. Previously hypermetabolic vessels were markedly improved.

* fluorodeoxyglucose-positron emission tomography/computed tomography (FDG-PET/CT)

CONCLUSION

Our case report demonstrated that FDG-PET/CT has tremendous potential to detect medium-sized vessel inflammation; it can also play a crucial role in prognosticating outcomes and monitoring therapeutic efficacy.

Key Words: positron emission tomography-computed tomography; polyarteritis nodosa

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Core Tip: The PET-CT can be can be an option to diagnose small to medium-sized vessel vasculitis and follow-up to assess on the extent and improvement of inflammation in patients with PAN.
* fluorodeoxyglucose-positron emission tomography/computed tomography (FDG-PET/CT); Polyarteritis nodosa (PAN)

INTRODUCTION

Polyarteritis nodosa (PAN) is characterized by systemic necrotizing vasculitis which can involve medium-sized vessels. This vasculitis is usually difficult to diagnose, thus, imaging study including fluorodeoxyglucose-positron emission tomography/computed tomography (FDG-PET/CT) would be a possible role to identify this disease.
* fluorodeoxyglucose-positron emission tomography/computed tomography (FDG-PET/CT); Polyarteritis nodosa (PAN)

CASE PRESENTATION

Chief complaints

A 68-year-old male visited to emergency department complaining fever, myalgia, and both leg pain during more than two weeks.

History of present illness

Although he was treated with administered ceftriaxone and metronidazole in other hospital for a week.

History of past illness

There was no specific past illness.

Personal and family history

There was no specific personal and family history.

Physical examination

However, his C-reactive protein (CRP) was still high (37.71 mg/dL) and complaining symptoms such as fever, both leg pain was still remained. Therefore, he was admitted to our hospital for further assessment.

Laboratory examinations

His blood, urine culture findings were all negative. And his serologic results such as hepatitis viral marker, rheumatoid factor, anti-cyclic citrullinated peptide antibody, antineutrophil cytoplasmic antibody (ANCA) and anti-nuclear antibody (ANA) were negative. Because he complained daily fever after admission, fever of unknown origin (FUO) work up was needed.

*antineutrophil cytoplasmic antibody (ANCA); anti-nuclear antibody (ANA); fever of unknown origin (FUO)

Imaging examinations

There were no clinically significant findings without two small hemangiomas in the liver on contrast enhanced computed tomography in whole body including neck, chest, and abdomen-pelvic cavity. FDG-PET/CT on day 5 showed vasculitis involving small to medium vessels of both lower extremities by showing somewhat linear hypermetabolism through the muscles.

FINAL DIAGNOSIS

Finally, he was diagnosed PAN according to criteria by showing satisfied with unexplained more than 4 kg of weight loss, myalgia, new onset more than 90 mmHg of diastolic blood pressure, and elevated of blood urea nitrogen (BUN) >40mg/dL

according to the American College of Rheumatology (ACR) proposed classification criteria for PAN in 1990.

*blood urea nitrogen (BUN); American College of Rheumatology (ACR)

TREATMENT

The patient was treated with more than 1mg/kg dosage of methylprednisolone intravenously and immunosuppressants. The patient was treated with high dosage of prednisolone, and methotrexate after diagnosis.

OUTCOME AND FOLLOW-UP

Then, his symptoms were resolved and his C-reactive protein (CRP) level was 1.19 mg/dL. After 3 wk later, he was performed FDG-PET/CT again to identify his vasculitis state. As a result, previous hypermetabolism of vessels were markedly improved. After resolution of his symptoms, the patient was tapered glucocorticoids and methotrexate and maintained improved status in outpatient clinic.

DISCUSSION

It is already known that FDG-PET/CT has new diagnostic tool to detect large vessel vasculitis, with its high sensitivity for vessel inflammation. And FDG-PET/CT was shown possibility as a promising prognostic marker by identification of patients having risk of vascular complications. In addition, prior report suggests that FDG-PET/CT can be a role of showing therapeutic efficacy.

CONCLUSION

This patient's finding indicates that FDG-PET/CT can be an option to diagnose small to medium vessels vasculitis and follow-up to evaluated on the extent and improvement of vessel inflammation in patients with PAN to show therapeutic effects.

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