

## Fluorine-18-FDG-PET/CT in Cytomegalovirus Colitis

### ABSTRACT

Cytomegalovirus (CMV) colitis as a cause of pyrexia of unknown origin (PUO) is rarely documented on fluorodeoxyglucose-positron-emission-tomography/computed-tomography (FDG-PET/CT) scan in Indian literature. The typical PET images with intense FDG uptake in large bowel are rare to see and are exclusively ruled out the cause of pathology. Only few cases reported with FDG-PET/CT in CMV colitis in world literature. We present a case of 55-year-old female with PUO diagnosed as an acute CMV colitis. A fluorine-18-FDG-PET/CT scan (F-18-FDG-PET/CT scan) was performed to diagnose the infective focus which reveals symmetrical intense increased pathological FDG uptake in entire large bowel from cecum to sigmoid colon with corresponding CT images showed mildly edematous bowel wall. Further colonoscopy revealed edematous and ulcerated colonic mucosa. Biopsy from small cecal ulcer revealed a diagnosis of CMV colitis with the presence of CMV DNA in IHC. CMV antigenemia in blood is also confirmed on evaluation which responded to antiherpes treatment ganciclovir. From these findings, this case highlights a typical pattern of FDG uptake in F-18-FDG-PET/CT scan.

**Key words:** Cytomegalovirus colitis, Fluorodeoxyglucose, Positron emission tomography, Pyrexia of unknown origin

### CLINICAL PRESENTATION

A 55-year-old female with post-renal transplantation done 25 years back presented with pyrexia of unknown origin (PUO), temperature ranges between 99 and 102 F since more than a week, patient took a 5-day course of intravenous beta-lactam antibiotics which reveal no improvement. The patient is diabetic on insulin with acute kidney injury, pre-treatment investigations reveal a HB of 7.2, TLC 11,600, S. Cr – 3.60 mg/dl, BUN – 118, and Na 124, with nearly normal all other relevant investigations. Blood analysis for widal, malaria, dengue, HIV, HBsAg, HCV, blood culture, urine routine



**Figure 1:** F-18-FDG-PET scan showing linear intense FDG uptake along the entire large bowel

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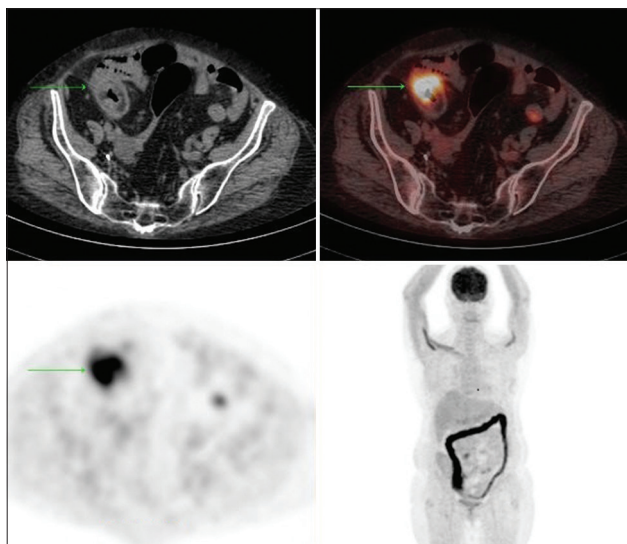
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microscopy and culture, stool examination for bacteria, and parasites all were negative.

With persistent symptoms, the patient was referred for fluorine-18-fluorodeoxyglucose-positron-emission-tomography/computed tomography scan (F-18-FDG-PET/CT scan) after 6 h of fasting and with non-contrast CT. PET/CT scan was performed on dedicated Philips Trueflight PET/CT camera after 1 h of 7 mCi FDG radioisotope. Scan revealed diffuse and linear intense FDG uptake along the entire large bowel [Figure 1] from cecum to sigmoid colon with corresponding CT images showed mildly edematous bowel wall with no paracolic fat stranding [Figures 2 and 3]. Further evaluation with colonoscopy revealed edematous and ulcerated colonic mucosa. Biopsy from a cecal ulcer revealed a diagnosis of cytomegalovirus (CMV) colitis with the presence of CMV DNA on IHC. IgM CMV antigenemia was confirmed

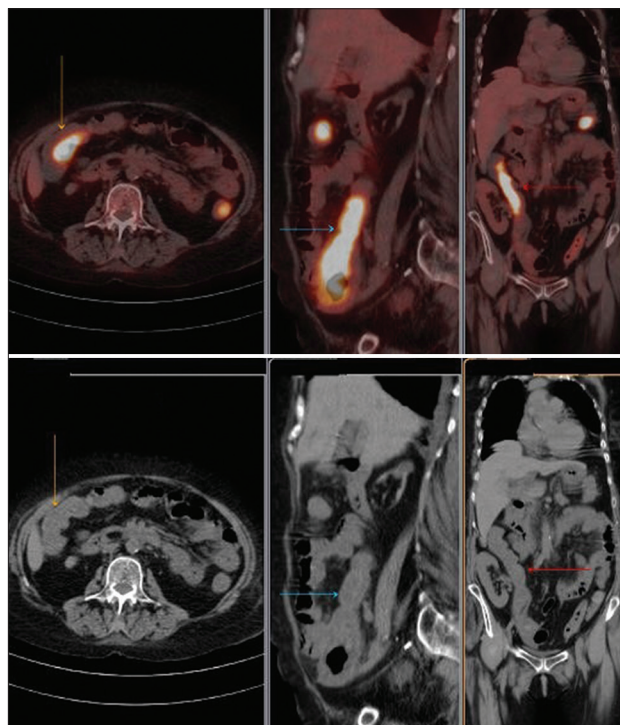


**Figure 2:** Axial CT and fused FDG PET CT images reveal focal thickening of the caecum with intense FDG uptake

on blood sample, and a diagnosis of CMV colitis was made on basis of all above findings. Treatment with antiherpes ganciclovir 5 mg/kg twice daily for 14 days was started with relieve of symptoms and nil IgM titer post-treatment. Only two cases of CMV colitis as a cause of PUO on F-18-FDG-PET/CT scan were reported in literature.<sup>[1,2]</sup> This case highlights a positive F-18-FDG-PET/CT scan in PUO can be due to CMV colitis.

## REFERENCES

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**Figure 3:** Fused CT and PET CT images in axial, coronal and sagittal reconstructions revealing diffuse right colonic mural thickening with intense FDG uptake

An abnormal accumulation of fluorine-18-FDG PET in cytomegalovirus enteritis a case report. *Ann Nuclear Med* 2006;20:75-8.

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