

Abdominal Wall Tuberculosis Infection and TB Peritonitis Seen in 18F-FDG PET/CT Imaging

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Abstract

While 18F-FDG PET/CT imaging is used in malignant conditions, a positive finding does not exclude the diagnosis of tuberculosis, especially in countries with high TB prevalence rates. 18F-FDG PET/CT imaging may have a role in the assistance of diagnosing TB, especially extra-pulmonary lesions. This is a case report of the patient used 18F-FDG PET/CT imaging.

Keywords: 18F-FDG PET/CT; Tuberculosis; Peritonitis

Introduction

18F-FDG PET/CT acquires PET and CT data in the same imaging session and allows accurate anatomical localization of the lesions detected on the 18F-FDG PET scan. Positron emission tomography (PET) with 2-deoxy-2-[fluorine-18] fluoro-D-glucose (18F-FDG), an analogue of glucose, provides valuable functional information based on the increased glucose uptake and glycolysis of cancer cells.

Following its introduction, integrated PET/CT rapidly gained clinical acceptance, and in the last 20 years it has become an important imaging tool in routine clinical oncology [1]. While 18F-FDG PET/CT imaging is used in malignant conditions, a positive finding does not exclude the diagnosis of tuberculosis, especially in countries with high TB prevalence rates [2]. 18F-FDG PET/CT imaging may have a role in the assistance of diagnosing TB, especially extra-pulmonary lesions [3]. This is a case report of the patient used 18F-FDG PET/CT imaging.

An 86 year old male with past medical history of diabetes mellitus and prostate adenocarcinoma status post Transurethral Resection of Prostate presented with complaints of abdominal distention. Initial evaluation by abdominal ultrasound demonstrated suspicious liver tumors and ascites. Chest and abdominal CTs showed a cavitory lesion at left upper lung and fusiform fluid collections in right antero-lateral abdominal wall near the liver surface (Figure 1 A and B). Whole body 18F-FDG PET/CT scan (Figure 2) showed increased uptake at both sites (Figure 1C and D).

CT-guided biopsy of the abdominal lesion showed granulomatous inflammation with positive acid-fast stains, past research found that granulomatous inflammation was diagnosed as tuberculous peritonitis was 47.6%. While sputum acid-fast stains were negative for three sets, sputum TB culture came back positive one month later. Patient completed full-course of anti-tuberculosis treatment and was considered cured.

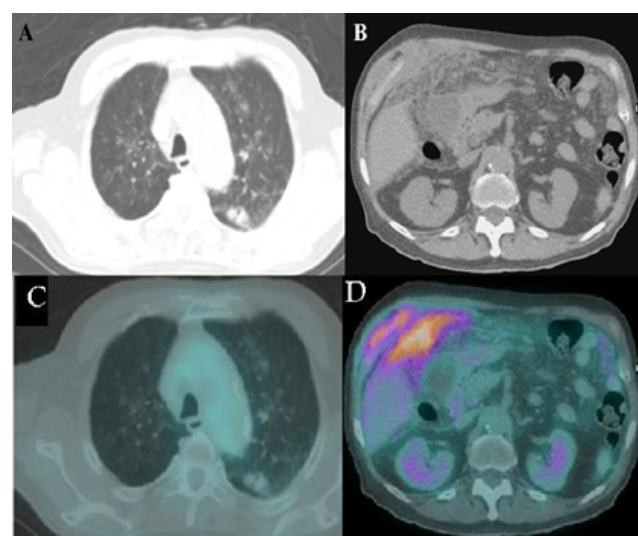


Figure 1: (A) Chest CT showing cavitory lesion in left upper lung field. (B) Abdominal CT showing fusiform fluid collection at right upper antero-lateral abdominal wall extending along the abdominal cavity. Fat stranding (indicating inflammation) is present. (C) 18F-FDG-PET/CT scans showing mild FDG accumulation in the pulmonary cavitory lesion. (D) 18F-FDG-PET/CT showing obvious FDG accumulation in the right upper antero-lateral abdominal wall region.

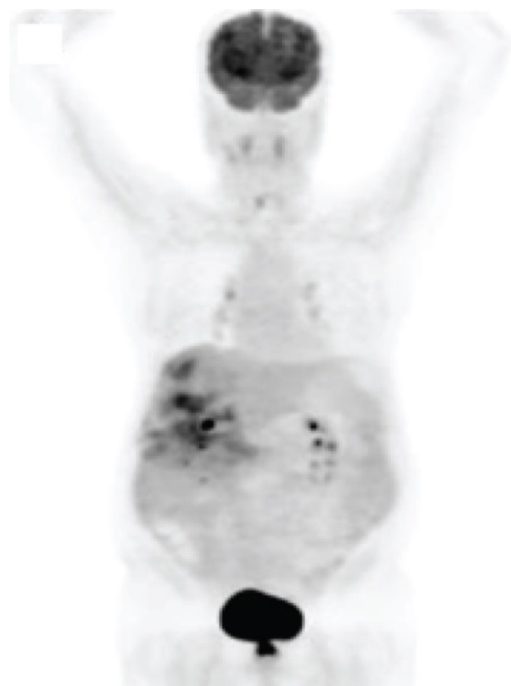


Figure 2: Whole body 18F-FDG PET/CT scan.

Discussion

While 18F-FDG PET/CT Imaging is usually reserved to distinguish malignant from benign lesions, we present a case where pulmonary and extra-pulmonary TB were diagnosed with the help of FDG-PET. Positive findings on FDG-PET cannot rule out tuberculosis infections, especially in TB endemic regions.

Competing Interests

None

Patient Consent

Patient consent was obtained to submit this case report

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