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Hypermetabolic Splenomegaly with Infarct in FDG PET/CT: A Clue to Scrub Typhus in PUO

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Case Report
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Abstract

Scrub typhus is a rare zoonotic disease, also being an uncommon cause of fever of unknown origin. In the absence of an eschar, it would be even difficult to diagnose. With recent availability of IgM against scrub tyhus antigen, more cases of scrub typhus are increasingly getting noted. Herewith we report the typical PET/CT findings of Scrub typhus in a patient who presented with jaundice, fever and normal appearing skin.

Case Presentation

A 56 yr. old diabetic woman presented with low-grade fever for 10 days developing jaundice and poor appetite over the last 3 days. She had no skin lesion. Her Hemoglobin was 8.3 g/dl, total leucocyte count 6150 cells/cu.mm with 66% neutrophils and platelets 178,000 cells/cu.mm. Her total (1.81 mg/dl) and direct bilirubin (1.43 mg/dl), serum ALP (208 U/L), AST (49 U/L) and GGT (76 U/L) were mildly elevated with albumin/globulin ratio of 0.76 suggesting acute hepatitis. Hepatitis –A & E, HIV, Leptospira and Dengue serology were negative, while negative Anti-LKM-1 and ASMA antibodies ruled out autoimmune hepatitis.

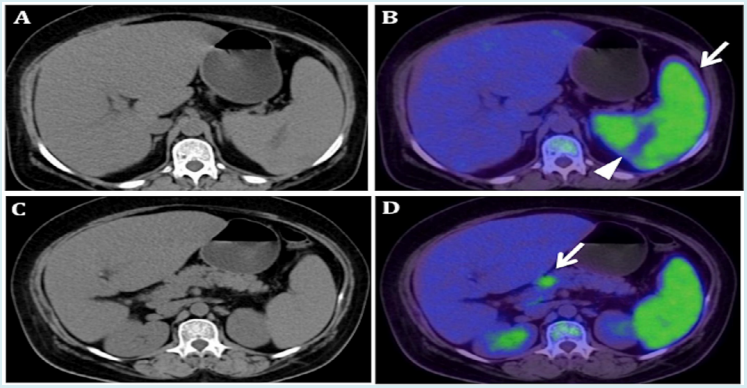

Figure 1: Maximum Intensity Projection image (A) shows the distribution of abnormal hypermetabolic lesions. Coronal fused FDG PET/CT image (B) shows hypermetabolic (SUVmax 4.8) consolidation in the lateral basal segment of right lung lower lobe (arrow) suggesting non-specific inflammation and tracer in the right axillary node (arrow head) resulting from extravasation at the injection site. Mild diffuse hypermetabolism is visualized in the marrow, reactive to acute phase reactants.

Because of asthma and repeated episodes of hypoglycemia, F-18 FDG PET/CT was performed without intravenous contrast, which was suggestive of an infective etiology (Figures 1 & 2) [1]. Further serological testing for Orientia tsutsugamushi -IgM was significantly reactive at 6.06 (Reactive > 1.0 ratio), leading to the diagnosis of Scrub typhus. She was then treated with Doxycycline and was completely asymptomatic during the subsequent follow-up with normal liver function test.

Splenic infarct due to vasculitis and hypermetabolic splenomegaly is consistently reported in scrub typhus [2].

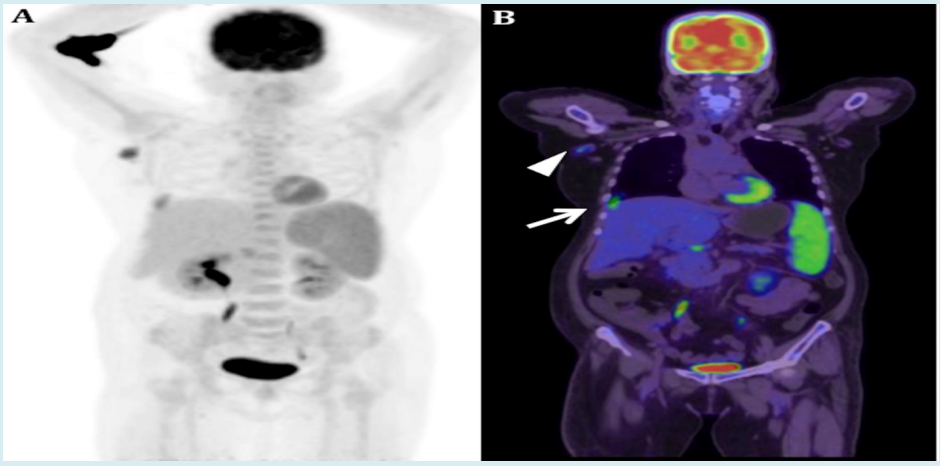

Figure 2: Axial CT (A) image shows hepato-splenomegaly. Axial fused PET/CT (B) image shows diffusely increased FDG uptake (SUVmax 4.8) with linear cold area in the posteromedial aspect, suggesting scar. Spleen measured 14.0 cm craniocaudally. Since the study was performed without intravenous contrast, this finding is not clearly evident in the CT image (A). Axial CT (C) and fused PET/CT images (D) at a distal location show hypermetabolic peripancreatic node. No other significant findings were present in the PET/CT study.

Conclusion

In the absence of eschar, hypermetabolic splenomegaly with infarct could be considered as a clue to scrub typhus in endemic regions.

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