**Abstract**

A 72 years old patient was referred to us with ileal adenocarcinoma after surgical desection. Fluorine-18-fluorodeoxyglucose positron emission tomography/computed tomography (18F-FDG PET/CT) imaging showed massive portal vein tumor thrombosis. Clinical examination and laboratory tests did not support the diagnosis of septic thrombus. To the best of our knowledge, this is the first reported case in the literature of a massive tumor thrombus in the right portal system from ileal carcinoma, detected by 18F-FDG PET/CT.

**Case Report**

A 72 years old patient was referred to us 1 month later that he had undergone emergency surgery for a stenosing terminal ileal adenocarcinoma [1]. He had not received chemotherapy. Positron emission tomography/computed tomography (PET/CT) scan was acquired 60min after the intravenous administration of 3.7kBq/kg of fluorine-18-fluorodeoxyglucose (18F-FDG). The PET/CT device was a Discovery ST (GE, Milwalkee, USA) with bismuth germanate crystal units arranged to form 24 rings combined with a 16-slice Light Speed Plus CT scanner. Maximum intensity projection (MIP) whole body scan (Fig. 1A) showed high tracer uptake in mediastinal and abdominal lymph nodes, correlated to tumoral localizations. Moreover, intense 18F-FDG uptake (SU>Vmax=20.9) was noted in the right portal vein system (Fig. 1A), also evident in the coronal slices (Fig.1B). Subsequently performed CT, showed almost complete filling defect of the right portal vein and its distal branches (Fig. 2A). No evidence of disease recurrence was appreciated at the surgical ileal anastomosis (Fig. 2B). Moreover, CT demonstrated active enhancement of the portal thrombus material with significant increase of attenuation values between the scan without contrast material (33 HU) and the one in the portal venous phase (66 HU) (Fig. 2C and D). These features were interpreted as tumour invasion.

**Keywords:** Portal vein thrombosis - Ileal adenocarcinoma - Tumor thrombus - 18F-FDG PET/CT

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in the portal branch due to the $^{18}$F-FDG uptake at PET scan. Physical examination demonstrated mild pain in the right quadrants of the abdomen while all laboratory tests were normal, except (hemoglobin: 8.9g/dL) and increased erythrocyte sedimentation rate (80mm/1st h). Patient started chemotherapy according to standard protocol, with complete resolution of the abdominal painful symptoms. Intra-luminal tumor thrombus in the portal vein system originating from gastrointestinal tract cancer represent a rare condition. Tanaka et al. (2002) [2] reported a total of 5 patients with gastric or large intestinal cancer with portal vein tumor thrombus. Thrombus including tumoral cells exhibits increased tracer uptake while venous thromboses present normal $^{18}$F-FDG biodistribution [3, 4]. Yamamoto et al (2011) [5] recently described a case of massive portal vein tumor thrombus from colorectal cancer without any metastatic nodules in the liver, showing positive $^{18}$F-FDG uptake in the right hepatic lobe. In our case, clinical examination and laboratory tests did not support the diagnosis of septic thrombus [6]. To the best of our knowledge, this is the first reported case in the literature of a massive tumor thrombus in the right portal system from ileal carcinoma, detected by $^{18}$F-FDG PET/CT.

The authors declare that they have no conflicts of interest.

Bibliography


Figure 2. Multidetector CT (MDCT) showed extensive nearly complete thrombosis of the right portal vein system (A) and ileal surgical anastomosis in the upper right abdomen (B). Increase of attenuation values before (33 HU, C, arrow) and after contrast media injection (66 HU, portal phase) demonstrated active thrombus enhancement (D, arrow).