

May ^{18}F -FAPI PET/CT differentiate sutures granuloma from metastasis? A case report

Abstract

A 35-year-old woman received a surgery of sigmoid colon highly differentiated mucosal adenocarcinoma with greater omentum and peritoneum metastasis. The follow-up contrast-enhanced computed tomography (CT) revealed a new enhanced nodule on the transverse mesocolon about 6 months after surgery. Fluorine-18-fluorodeoxyglucose (^{18}F -FDG) and ^{18}F -fibroblast activation protein inhibitor (FAPI) positron emission tomography (PET)/CT were both performed to evaluate the potential lesions systematically, PET/CT images showed low ^{18}F -FDG activity but very little ^{18}F -FAPI activity in the nodule on the transverse mesocolon. Ultimately, the nodule was pathologically proved to be sutures granuloma. Maybe ^{18}F -FAPI PET/CT is a potential choice to differentiate suture granulomas from metastasis.

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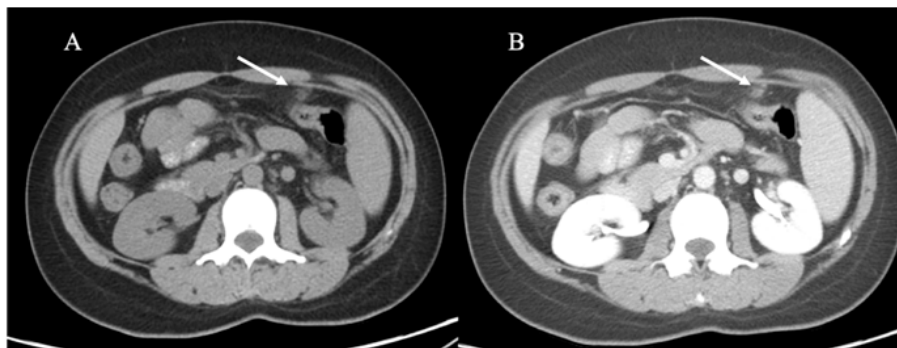


Figure 1. The patient was a 35-year-old woman with a surgery of sigmoid colon highly differentiated mucosal adenocarcinoma with greater omentum and peritoneum implantation metastasis approximately 6 months earlier. Irinotecan and uracil had been administered as adjuvant chemotherapy, and no complications had been observed. The follow-up contrast-enhanced abdominal CT revealed a new enhanced nodule (arrow) on the transverse mesocolon 6 days ago. The serum CEA was 6.49ng/mL, then the ^{18}F -FDG and ^{18}F -FAPI PET/CT was performed to evaluate possible metastasis.

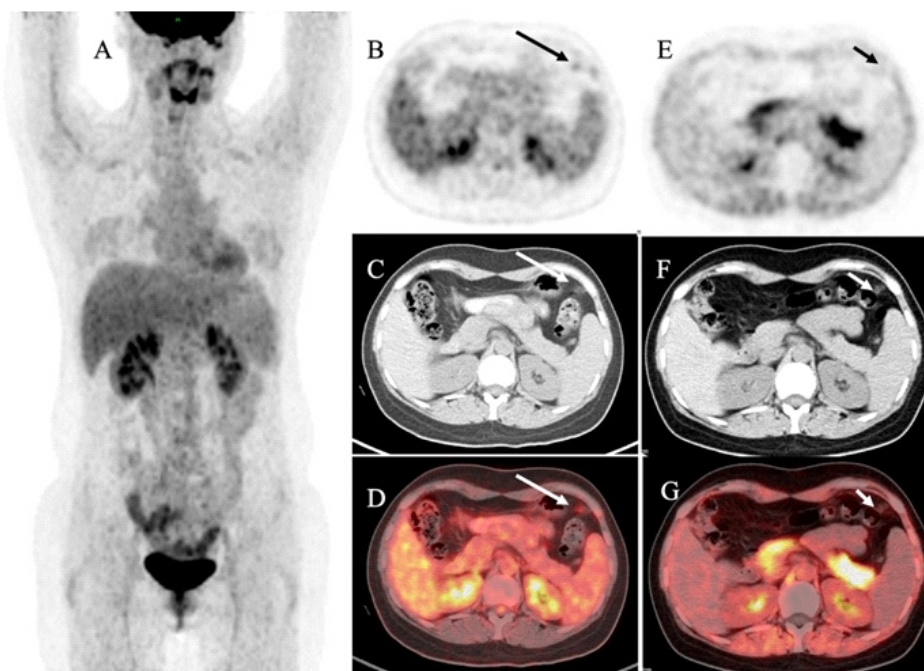


Figure 2. The ^{18}F -FDG PET MIP image (A) showed no abnormal activity in the body. The axial images of upper abdomen in PET/CT demonstrated a nodule with low ^{18}F -FDG activity (B, PET; C, CT; D, fusion, long arrows) but almost no ^{18}F -FAPI uptake (E, PET; F, CT; G, fusion, short arrows) on the transverse mesocolon corresponded to the previous enhanced CT. We couldn't rule the implantation metastasis out because of the history of mucosal adenocarcinoma.

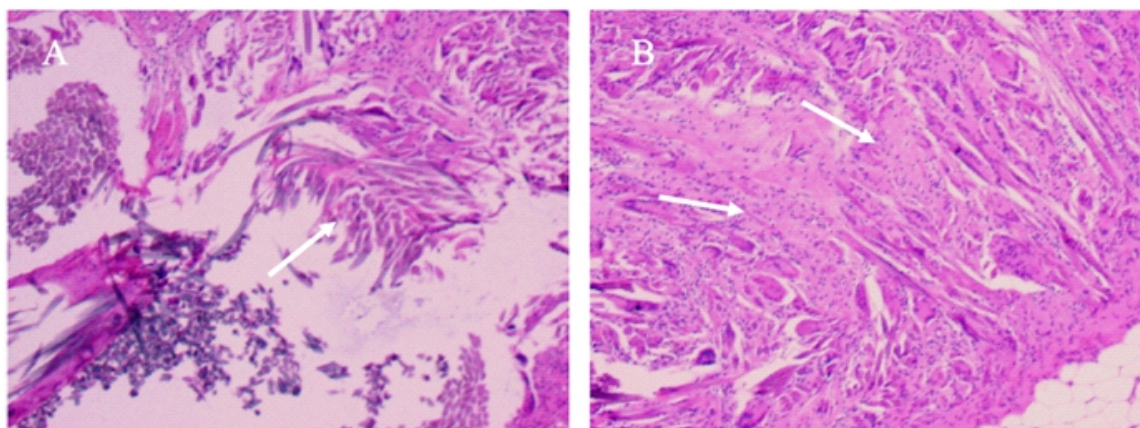


Figure 3. We have discussed with the patient and offered an option of continuing close surveillance in addition to surgery. The patient favored the surgical option, and we consequently arranged nodular resection. Histological review (A and B, hematoxylin-eosin) showed sutures with foreign body granuloma (arrows) and no malignant tissues identified. The CEA was back to normal level after surgery. Sutures granuloma is a rare surgery-related complication [1-3], which most commonly develop in response to non-absorbable materials such as silk remaining in the patient's body [4-6]. It can be difficult to distinguish suture granulomas from recurrent or metastasis tumors through ^{18}F -FDG PET/CT while the serum CEA elevated during post operative surveillance [1-8]. In the current case, there was almost no ^{18}F -FAPI uptake in the sutures granuloma. The novel tracer, ^{18}F -FAPI, may be a potential choice to differentiate suture granulomas from metastasis to avoid unnecessary extended resection.

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