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High Uptake of FDG Along a Biliary Stent

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Abstract: A 66-year-old woman presented with abdominal discomfort. Contrast-enhanced CT revealed a mass in the pancreas and multiple liver metastases. Pathological examination confirmed the mass to be primary pancreatic cancer. Endoscopic insertion of a biliary stent was performed to prevent common bile duct obstruction. Subsequently, she received combination chemotherapy, which resulted in a complete response. FDG-PET-CT after chemotherapy revealed a high uptake of FDG along the outline of the biliary stent, with complete disappearance of both the primary and metastatic tumors.

Key Words: biliary stent, chemotherapy, FDG-PET-CT, pancreatic cancer

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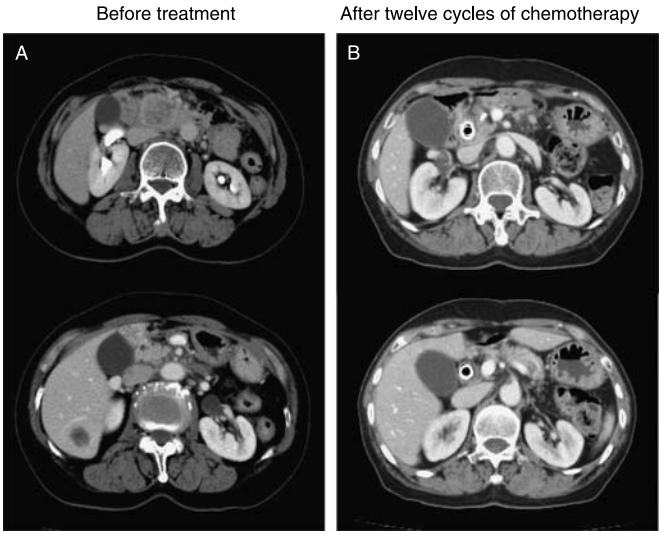

FIGURE 1. A, A 66-year-old woman presented with abdominal discomfort. Contrast-enhanced computed tomography (CT) revealed a mass in her pancreas, with multiple liver metastases. Fine-needle aspiration biopsy during endoscopic retrograde cholangiopancreatography confirmed primary pancreatic cancer. **B,** Endoscopic insertion of a metallic biliary stent was performed to prevent common bile duct obstruction. Subsequently, she received 12 cycles of combination chemotherapy consisting of folic acid, bolus and continuous 5-fluorouracil, irinotecan, and oxaliplatin (FOLFIRINOX),[1] which resulted in a complete response.

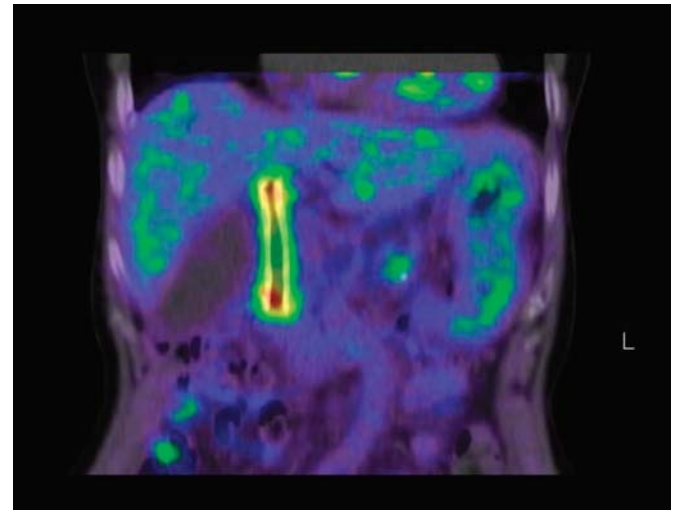

FIGURE 2. FDG-PET-CT after chemotherapy revealed a high uptake of FDG along the outline of the biliary stent, with complete disappearance of both the primary and metastatic tumors. FDG-PET is useful for detecting inflammatory biliary and pancreatic diseases, including cancer.[2–4] Typically, FDG-PET-CT has a high sensitivity for detecting cholangiocarcinoma or pancreatic diseases, including malignant neoplasm, and a negative scan indicates a nonmalignant state of disease, even if there is the presence of a small tumor.[2,4,5] However, in the case of nonmalignant disease—for example, autoimmune pancreatitis, including IgG4-related autoimmune pancreatitis, and autoimmune cholangitis—it has been reported that FDG uptake was increased in diseased regions.[2,3,6] In the present case, the finding of a high FDG uptake clearly indicates the outline of the biliary stent without any evidence of cancer involvement. Furthermore, cancer involvement was not shown pathologically after repeated endoscopic examinations.[7] We suspect that this radiological finding may be related to the endoscopic procedure of biliary stent insertion, the major cause being the focal inflammation surrounding the metallic stent.[8] The rate of complete remission (CR) among patients with advanced pancreatic cancer who are treated with FOLFIRINOX is approximately 0.6%.[1] In general, biliary tract cancer and pancreatic cancer have a poor prognosis and are thought to be one of the most intractable malignant tumors. The reported rate of CR of advanced biliary tract cancer is only 2% of patients who are treated with combined chemotherapy consisting of gemcitabine and oxaliplatin.[9] We suggest that residual high uptake of FDG along the biliary stent can be considered to be caused by local inflammation if the initial tumors have been cured by chemotherapy and complete remission has been achieved. Physicians should be aware of this phenomenon because these findings make adequate diagnosis of these cancers difficult. Detailed observation of the clinical course and repetition of the radiological and pathological examinations might help swift and correct diagnosis.