

Fluorodeoxyglucose Positron Emission Tomography/Computed Tomography Imaging in Pseudo Sister Mary Joseph's Nodule

Abstract

Sister Mary Joseph's nodule (SMJN) refers to umbilical metastatic lesions and indicates widespread intra-abdominal malignancy. The most common primary sites are gastrointestinal and genital tract. Benign umbilical nodules are called pseudo-SMJN (PSMJN) and have been also reported in nonmalignant lesions such as endometriosis, fibroma, papillomas, myxoma, keloid, omphalith, nevi, foreign-body granulomas, and epidermoid cysts. We report a case with PSMJN as an extremely rare manifestation of intra-abdominal tuberculosis.

Keywords: Fluorodeoxyglucose positron emission tomography/computed tomography, peritoneal tuberculosis, pseudo Sister Mary's Joseph nodule

A 40-year-old male patient was presented with a 2-month history of abdominal swelling, night sweating, and 8 kg of weight loss. He had been treated with antitumor necrosis factor (anti-TNF) drug for ankylosing spondylitis for 3 years. Abdominal computed tomography (CT) showed the presence of ascites, peritoneal thickening, and omental cake sign, and peritonitis carcinomatosa was suspected. Fluorodeoxyglucose positron emission tomography/CT (FDG PET/CT) revealed massive peritoneal involvement with high-FDG uptake (maximum standardized uptake value [SUV_{max}], 6.3; arrows) and a hypermetabolic nodular lesion in the periumbilical region (SUV_{max} , 3.3; arrowheads) [Figure 1]. Multiple hypermetabolic lymph nodes, pleural effusion, and mild FDG uptake in pleural surfaces were also seen. The albumin concentration of ascitic fluid was 2.72 g/dl, and no malignant cell was present. Ascitic fluid analysis revealed a predominance of lymphocytes and elevated adenosine deaminase level (138 U/l: normal below 50 U/l). A peritoneal biopsy was reported as necrotizing granulomatous peritonitis and panniculitis. No acid-fast bacilli were detected and cultures were negative. The QuantiFERON test gave positive result. Four-drug antituberculosis (TB) therapy was started and significantly improved the

patient's symptoms within 2 months.

Similar laparoscopic and imaging findings can be observed in tuberculous peritonitis and peritoneal carcinomatosis. Abdominal TB constitutes 3%–6.7% of cases with extrapulmonary TB, and peritoneal involvement is common.^[1,2] An increased risk of TB has been demonstrated with the use of TNF- α antagonist. Anti-TNF drugs can cause the breakdown of granulomas in latent infection.^[3] A case of umbilical nodule caused by abdominal TB has been reported.^[4] The anatomic and embryologic peculiarities of the umbilicus make it a weak point for disease spread.^[5-7] In addition to umbilical metastases, umbilical nodules have been reported in benign tumors or lesions (such as omphalitis, granulomas, cutaneous endometriosis, and psoriasis).^[8-10] Benign umbilical nodules are called pseudo Sister Mary Joseph nodule and have been rarely reported with FDG PET/CT.^[11,12] This case highlights the need to consider TB in the differential diagnosis of hypermetabolic umbilical nodules, and careful clinical correlation of imaging findings is recommended.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported

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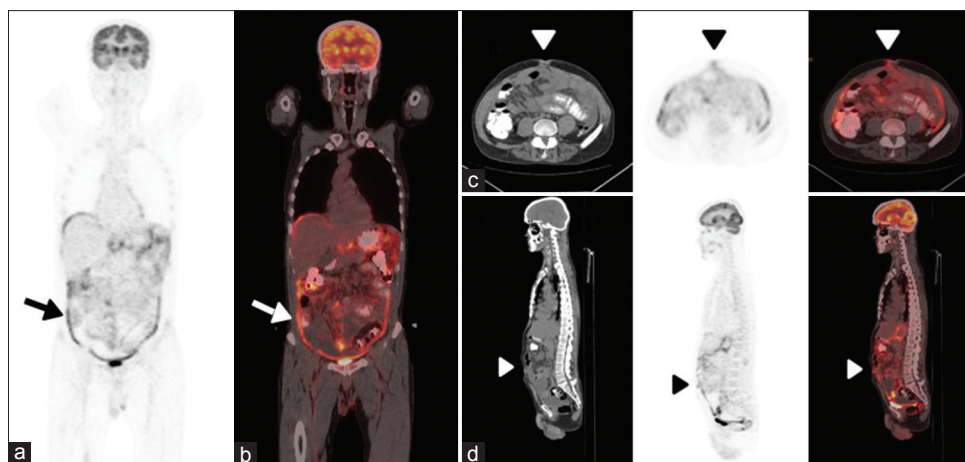


Figure 1: Abdominal computed tomography showed the presence of ascites, peritoneal thickening, and omental cake sign, and peritonitis carcinomatosa was suspected. Fluorodeoxyglucose positron emission tomography/computed tomography revealed massive peritoneal involvement with high-fluorodeoxyglucose uptake (maximum standardized uptake value, 6.3; arrows) and a hypermetabolic nodular lesion in the periumbilical region (maximum standardized uptake value, 3.3, arrowheads) [Figure 1]. Multiple hypermetabolic lymph nodes, pleural effusion, and mild fluorodeoxyglucose uptake in pleural surfaces were also seen. Maximum intensity projection (a), coronal (b), axial (c), and sagittal (d) positron emission tomography/computed tomography images are given in the figure

in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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