Incidental Finding of Mesenteric Cyst by 18F FDG PET- CT: Case Report

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ABSTRACT

Mesenteric cysts are rare intra-abdominal lesions, and they have a wide range of clinical signs and symptoms that make pre-operative diagnosis difficult. Diagnosis is often incidental. Although the exact cause of mesenteric cysts is unknown, obstruction of the lymphatic system due to trauma, infection, or tumors is thought to play a role. The optimal treatment is surgical excision of the cyst with laparotomy or laparoscopy. We report a case of a 65-year-old female with ovarian cancer who had an incidental finding of a mesenteric cyst during an ^{18}F FDG PET-CT scan.

Keywords: Mesenteric cyst, intra-abdominal lesion, ^{18}F FDG PET-CT

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INTRODUCTION

Mesenteric cysts are benign and rare abdominal masses that may be found anywhere in the omentum or mesentery of the gastrointestinal tract (1). But they are most commonly found in the ileum and right colon. The incidence has been reported to be one case per 20,000 in children and one in 105,000 in adults (2). Clinical manifestations of the disease are very diverse and variable and can occur as a spectrum of asymptomatic abdominal cramps and acute intestinal obstruction (3). Since the diagnosis of mesenteric cysts is very challenging due to the lack of pathognomic signs and symptoms and various differential diagnoses, Here, an incidental mesenteric cyst is reported in a 65-year-old female patient with metastatic ovarian carcinoma who came for a PET CT scan.

CASE REPORT

A 65-year-old woman diagnosed and treated for metastatic ovarian carcinoma was referred to the PET-CT division of 1. National Institute of Nuclear Medicine & Allied Sciences (NINMAS) for a follow-up PET-CT scan to assess recurrence. She had previously complained of nausea, weight loss, and distension of abdomen prior to surgery. Patient was diagnosed with metastatic ovarian

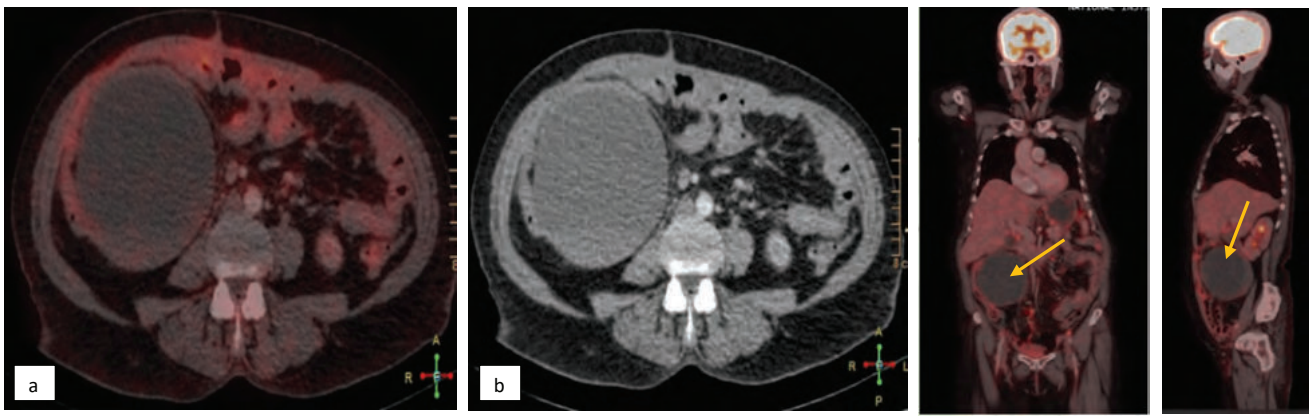

Figure 1: Axial (a, b), sagittal (c) and coronal image (d) of ^{18}F FDG PET-CT scan of a 65-year-old woman diagnosed and treated for metastatic ovarian carcinoma showing a fairly big cystic lesion in right paracolic gutter (orange arrow), proved to be a mesenteric cyst histopathologically.

carcinoma and treated with radical hysterectomy and omentectomy, followed by six cycles of chemotherapy. A PET-CT scan was done elsewhere before chemotherapy, which revealed hypermetabolic abdominal lymph nodes and hepatic SOLs. The patient was quite okay for one year but again developed similar type of abdominal complaints without raised tumor markers. A CT scan of the abdomen showed a hypodense mass in the abdomen and suggested a recurrence of the disease. The 18F-FDG PET-CT scan in NINMAS was contrasted with an earlier PET-CT scan that revealed the metabolic and morphologic regression of the hepatic SOLs and previously observed hypermetabolic abdominal lymph nodes. Moreover, a newly developed, well-defined cystic lesion at the right paracolic gutter was detected incidentally, suggesting a mesenteric cyst. Sonographic correlation was also done. The cyst was histopathologically proven to be a mesenteric cyst.

DISCUSSION

One extremely uncommon lesion is a mesenteric cyst. Italian anatomist Benevenni first described this entity performing an autopsy on an 8-year-old boy in 1507; Rokitansky published the first accurate description of a chylous mesenteric cyst in 1842; and Tillaux performed the first successful surgery for a cystic mass in the mesentery in 1980 (4).

Any cyst seen in the mesentery is referred to as a mesenteric cyst; these cysts can extend into the retroperitoneum, which has a distinct endothelium or mesothelial cell layer. Mesenteric cysts might develop anywhere in the mesentery of the gastrointestinal tract, from the duodenum to the rectum (5). Simple or numerous, unilocular or multilocular, hemorrhagic, serous, chylous, or infectious fluids may be present in mesenteric cysts. They can have a diameter of a few millimeters to a few centimeters, but occasionally they can be so big that they may mimic tubercular ascites (6). Mesenteric cysts are classified into four types: i) chylolymphatic; ii) enterogenous; iii) cyst of the urogenital remnant; iv) simple (mesothelial); and v) teratomatous dermoid cysts (7). Although the exact cause of mesenteric cysts is unknown, obstruction of the lymphatic system due to trauma, infection, or tumors is thought to play a role. Alternatively, the lymph nodes' inability to interact with the venous or lymphatic systems may be a contributing factor. The most widely recognized explanation, put forth by Gross, is the benign growth of ectopic lymphatics in the mesentery that are not in communication with the lymphatic system as a whole.

The most frequent clinical manifestation is dull, poorly localized, mild stomach pain (55–82%). Additional symptoms include vomiting and nausea (45%), distention of the abdomen (17–61%), palpable abdominal masses (44–61%), constipation (27%), and diarrhea (6%). Accurate pre-operative diagnosis is challenging because the entity is uncommon and there aren't many specific symptoms. When the physician is made aware of this illness and includes it in the differential diagnosis of intraperitoneal cysts, it can be achieved. A correct diagnosis may be helped by clinical imaging, such as a CT scan, PET-CT, MRI, or ultrasound. The most suitable course of action is to completely remove the cyst surgically. Laparoscopy or laparotomy are the two methods available for this [8, 9]. The size of the cyst, its position within the abdominal cavity, and ultimately the surgeon's level of skill in performing minimum access surgery will determine the surgical strategy.

In our case, the symptoms mimicked the patient's previous illness, and thus a recurrence of ovarian carcinoma was suspected, though the tumor marker was within the normal limit. F-^{18}FDG PET-CT scans suggested regression of previous hypermetabolic lesions and suspected the new lesion as a mesenteric cyst while looking for a recurrence of ovarian cancer, thus guiding clinicians for further investigations and better patient management.

CONCLUSION

Although mesenteric cysts are extremely uncommon, mesenteric tumors should always be taken into consideration when making a differential diagnosis for pelvic cystic lesions during an F-^{18} FDG PET-CT scan. Even though our patient is not fit for surgery, laparoscopic excision of mesenteric cysts is still the best course of action.

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