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Mesenteric Lesion Presenting with Features of a Malignant Mass: A Case Report

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ABSTRACT

Encapsulated fat necrosis (EFN), most commonly, is an asymptomatic entity and is often found incidentally in images. However, in the abdomen, it may present as an acute abdomen. Mesenteric fat necrosis is part of a larger disease spectrum called collectively mesenteric sclerosis. It results in formingof a mass that can be confused with other pathologies such as liposarcoma, carcinoma of the cecum, and other more benign conditions such as appendagitis of the epiplon. We present the case of an 82-year-old male who presented with an asymptomatic right lower quadrant mass with concerning CT findings with no previous abdominal surgery or trauma history. Diagnosing EFN is crucial as it can mimic bowel cancer and immune-related mesenteric pathology such as sclerosing mesenteritis, the management of which is far more extreme and aggressive than EFN.

Keywords

Encapsulated fat necrosis, Mesenteric pathology, EFN

CASE PRESENTATION

We present the case of an 82-year-old male who presented to our surgery center with a right lower quadrant mass. The patient states that he noticed the mass a year ago during a routine physical check-up and that it is non-progressive and denies abdominal pain, fever, weight loss, nausea, or vomiting. On physical examination, his abdomen was soft, non-tender, and non-distended, and bowel sounds were heard and did not reveal any mass. He has daily bowel movements and denies dysuria. He has a

history of diverticulosis of the descending and sigmoid colon, and his medication consistsof daily atorvastatin. The patient denies any history of trauma or abdominal surgery. A previous colonoscopy was clear of intraluminal anomalies. CT scan performed ten months prior showed a 4.5 cm mass right lower quadrant with densely calcified rum and mixed-density internal components, including calcifications. The appearance was nonspecific. It was interpreted as a possible cecal tumor/ liposarcoma and referred for surgery. Blood investigations were unremarkable.

The decision was made to carry out a laparoscopic exploration with a possible cecectomy. During surgery, an encapsulated mass was found to be at the mesentery of the terminal ileum near the ileocecal valve, very close to the base of the appendix. The mass appeared to be exophytic, and there was a small pedicle coming from the mesentery. It was a 4-5 cm calcified mass that was hard and fibrous (Figure 2). The appendix was slightly dilated, so both the mass and the appendix were removed without bleeding or abdominal injury. The patient's postoperative course was uneventful, and he was discharged two days later. Histological examination of the mass showed a collection of atypical cells with clear cytoplasm consistent with lipoblast mixed with mitotic figures and extensive necrosis, revealing the culprit to be mesenteric fat necrosis (Figure 1).

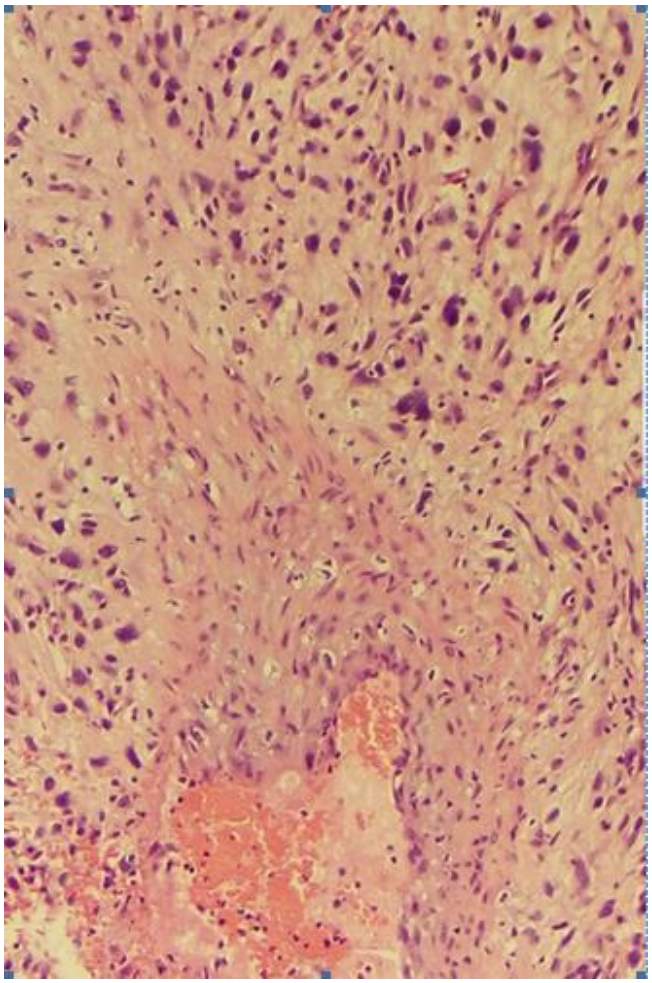

Figure 1: Histological report of the mass showing collection of atypical cells with clear cytoplasm mixed with mitotic figures and extensive necrosis.

DISCUSSION

Fat necrosis is a benign non-suppurative inflammatory process of adipose tissue. It is commonly due to accidental or surgical trauma to the adipose tissue with extracellular liberation of fat or enzymatic lysis of fat due to the release of lipases [1]. Mesenteric fat necrosis is part of a larger disease spectrum called collectively as mesenteric sclerosis. It was first described in 1924 by the name retractile mesenteritis [2].

Mesenteric fat necrosis belongs to a group of idiopathic disorders of the mesentery and peritoneum referred to as "sclerosing mesenteritis." It is pathologically characterized by the succession of different events that can be classified into three stages: inflammation (mesenteric panniculitis), fat necrosis (described as mesenteric lipodystrophy), and fibrosis (known as retractile or sclerosing mesenteritis). This spectrum of disorders is notorious for being indistinguishable from each other from a clinical, radiographic, and microscopic angle. The majority of the cases are incidental findings in abdominal CT or ultrasound. Because of the lack of clearly defining terms to differentiate one from the other, these pathological terms are often used interchangeably, creating much confusion. Having a sense of clarity on what separates these pathologies is critical for their management. Emory et al. reviewed cases 84 cases of mesenteric lipodystrophy, mesenteric panniculitis, and sclerosing mesenteritis. They found that in most patients, the extent of fibrosis, inflammation, and fat necrosis were too mixed to differentiate the three mesenteric pathologies[3].

Our patient presented with an asymptomatic right lower quadrant swelling with a calcified rim on the CT scan, increasing the suspicion of malignancy with no history of trauma or previous abdominal surgeries. The proximity of the mass to the cecum and the patient's age brought to mind the possibility of a cecal tumor. Most of the tumors involving the cecum are asymptomatic and diagnosed incidentally at the time of appendectomy. A malignancy is found in approximately 1 percent of appendectomy specimens. The most malignant neoplasm of the cecum is the adenocarcinoma which can present with abdominal pain, ascites, abdominal mass, or an acute presentation similar to appendicitis.Most tumors are diagnosed postoperatively, and thus, staging procedures mostly occur in postoperative management. Therefore, a surgical approach is preferred in diagnosing and treating unexplained abdominal masses. Multiple studies found the average age in the 4-5th decade [4, 7-8]. Abdominal pain was the most commonly described symptom in most studies [3-4, 8]. History of trauma or surgery was infrequently found but still an attributing factor in many studies [4, 7].

Encapsulated fat necrosis (EFN) can demonstrate a mild mass effect on adjacent structures, and its fibrous capsule may slightly enhance after administration of intravenous contrast material: findings that raise suspicion of a malignant lesion. Its encapsulated asymptomatic presentation and long history aroused the suspicion of liposarcoma. Liposarcoma appears to arise from precursors of adipocytes (fat cells) and is most commonly found in the extremities and retroperitoneum. The reported characteristics of liposarcoma on CT images are (I) homogeneity, (II) infiltration or poor margination, (III) CT numbers more significant than normal fat, and (IV) contrast enhancement.However, unlike liposarcoma, fat

necrosis does not show organ invasion and may be focally tender at palpation.

Another differential that overlaps with EFN is sclerosing mesenteritis, a rare, non-neoplastic inflammatory and fibrotic disease that affects the mesentery.

A presumptive diagnosis of sclerosing mesenteritis can be based on abdominal computed tomography findings of a fat ring or halo sign and pseudo capsule in contrast to EFN that appears as a round, encapsulated with predominantly fat attenuation. However, a definitive diagnosis of sclerosing mesenteritis requires histologic evaluation to rule out other etiologies.

In our case, perioperatively, the mass was found to be attached by a pedicle to the cecum and did not directly arise from it. In the face of an asymptomatic patient with regular bowel habits, the possibility of a cecal tumor at this point was questionable. In addition, the mass was encapsulated and noninvasive, making liposarcoma a less likely diagnosis. In the face of such a dilemma, the next best step was to surgically excise the mass and send the specimen for pathological analysis for a definitive diagnosis. Pathology confirmed that it was a case of encapsulated fat necrosis of the mesentery. Although the diagnosis was benign, it is clinically and radiographically misleading and alarming. Since the diagnosis is almost always made postoperatively, it warrants the need for EFN to be a differential in cases concerning a suspicious abdominal mass. Although our patient was asymptomatic, De Kock et al., in their case report, presented a 33-year-old female with a 36-hour history of periumbilical pain associated with anorexia and nausea, and a tender right lower quadrant and CT showed no calcifications within the mass. [6]

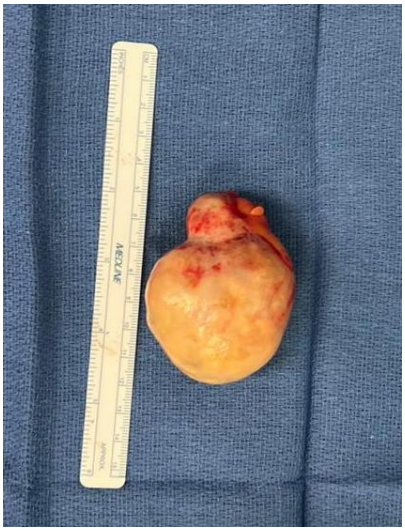

Figure 2: Macroscopic view of the mass. Gross view of the encapsulated fat necrosis

Diagnosing EFN becomes crucial in patients with abdominal cancer who can present with acute abdomen or signs of bowel 1obstruction, creating an impression of a recurrent tumor. [4-5]

The rarity with which EFN presents can blindside the surgeon and the patient, mainly because of its ability to present in a varied manner clinically and radiographically. EFN is known to decrease in size,

and the most appropriate way to manage it is to excise and have a histopathologically confirmed diagnosis.

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