**Omental Caking: An Ominous Sign?**

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**INTRODUCTION**

Omental thickening or “caking” is a radiologic sign that frequently indicates advanced peritoneal disease.¹ It may be secondary to malignant, infectious, or inflammatory etiologies. Notably, the association between omental caking and ovarian cancer has been well established. We present a patient whose initial imaging finding of omental caking preceded a diagnosis of metastatic ovarian cancer.

**CASE REPORT**

A 59-year-old woman, G2P2, with no documented past medical history presented with 3 weeks of constipation. In the emergency department, she described new-onset bloating, intermittent lower back discomfort, and fatigue, and she denied fever, chills, weight loss, diarrhea, hematochezia, melena, change in stool quality, vaginal bleeding/discharge. Her family history was significant for multiple primary BRCA-associated malignancies. Vital signs were significant for tachycardia to 111 beats per minute sitting upright; otherwise the patient was afebrile and normotensive. Physical examination revealed a protuberant, soft abdomen with diffuse lower tenderness to palpation, no signs of peritoneal irritation, and normal bowel sounds.

On admission, electrolytes and renal function were within normal ranges, hemoglobin was normal, and platelets were elevated to 434,000 platelets/µL. Liver enzymes were significant for elevated Alkaline Phosphatase to 157 U/L; Serum calcium was 9.4 mg/dL and serum albumin was 3.3 g/dL. A CT Abdomen Pelvis with intravenous contrast showed a peritoneal mass of 12 x 4 cm, omental thickening, ascites and no bowel obstruction (Figure 1). CA-125 = 488.8 U/mL (normal: 0-35 U/mL) and CEA of <0.5 ng/mL (normal: <0.5ng/mL). A diagnostic paracentesis to evaluate for malignancy showed cells consistent with metastatic adenocarcinoma with reproductive tract primary (Figure 2).

After tumor board review of relevant imaging and paracentesis results, the patient was diagnosed with FIGO stage IIIC ovarian cancer and was found to be BRCA2 positive. She underwent neoadjuvant chemotherapy and debulking surgery with good response.
DISCUSSION

Omental thickening refers to radiographic changes of the omentum that result from seeding and/or inflammation of normally translucent fat. Typically, the omentum is barely visible as a fatty band, but inflammation and displacement of bowel from the abdominal wall lead to an opacified appearance classically known as “omentum caking.”

Omental caking on CT is most closely associated with ovarian cancer, but can be secondary to a variety of neoplastic, inflammatory, or infectious etiologies. Metastatic involvement is the most common cause of omental caking, with colonic, pancreatic, and gastric cancers also being frequent causes. Cases due to lymphoma are associated with extensive lymphadenopathy. Conditions that cause inflammation of the peritoneum such as cirrhosis, portal hypertension, hematoma, and infarction can lead to CT abnormalities that mimic caking. Infectious etiologies such as tuberculosis have also been shown to induce omental changes.

CT scan is a reliable diagnostic tool for evaluating omental thickening, but imaging methods such as PET/CT and diffusion-weighted MRI also show utility in staging and assessing treatment response. On CT, normal omentum appears as a band of fatty tissue with penetrating vessels. Pathologic features can range from localized fluid collections or infiltrating lesions, to amorphous haziness and generalized changes of the entire omentum. On our patient’s CT scan, significant omental thickening with a large peritoneal mass and numerous implants was observed in addition to extensive ascites without identifiable suspicious ovarian lesions.

CONCLUSION

Omental thickening is an important finding to indicate peritoneal pathology and should trigger alarm when present with no attributable primary cause. In this case, presence of omental thickening on CT led to workup, biopsy, and staging of metastatic ovarian cancer in a previously undiagnosed patient.

References


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