ENCAPSULATING PERITONEAL SCLEROSIS, A RARE COMPLICATION OF PERITONEAL DIALYSIS

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INTRODUCTION

Encapsulating peritoneal sclerosis (EPS) is a rare and potentially life-threatening complication of peritoneal dialysis characterized by intraperitoneal inflammation and fibrosis. The risk of EPS after 5 and 15 years of peritoneal dialysis (PD) is up to 6.6% and 17.2%, respectively, and the risk continues up to 5 years after PD catheter removal. The prognosis of EPS is poor, with a mortality rate between 22% and 55% after diagnosis. Treatment for EPS includes prednisone and tamoxifen, with surgery reserved for severe cases.[1]

CASE DESCRIPTION

A 44-year-old female presented with complaints of fevers, chills, body aches, nausea, vomiting, and diarrhea. The patient had a significant PMH of hypertension, diabetes, proteinuria, noncompliance with medication, end-stage renal disease, and peritoneal dialysis for 14 years. At presentation, the patient was afebrile, with exam findings significant for abdominal pain and distension. Infectious peritonitis was initially suspected, and intraperitoneal Vancomycin and Aztreonam were administered. Blood cultures were negative.

Despite antibiotics, the patient became febrile along with increased abdominal pain and diarrhea. CT Abdomen was significant for free peritoneal air, ascites, and segmental wall thickening of the large colon. EGD, colonoscopy, and Infectious colitis workup was unremarkable. Intraperitoneal Vancomycin and Gentamicin washout therapy was initiated, with no resolution in the patient's Symptoms. The PD catheter was removed laparoscopically, and sclerosing peritonitis on the abdominal wall and bowel was visualized. The patient was diagnosed with EPS and treated with Tamoxifen and Prednisone.

DISCUSSION

EPS is a non-malignant cause of acute or subacute small bowel obstruction characterized by encasement of the small bowel within a thick fibrocollagenous membrane. EPS was previously known by various names, such as abdominal cocoon and sclerosing peritonitis. This condition is most commonly seen in peritoneal dialysis. Peritonitis is a misnomer since inflammation is not always present. EPS can occur at any age, with case reports ranging from a 2-day neonate to 82 an 82-year-old. A patient's clinical presentation is non-specific; however, patients may present with abdominal pain, vomiting, and/or subacute bowel obstruction. Differential radiological imaging diagnosis should include congenital peritoneal encapsulation, a genetic anomaly where the small bowel is encased in a thin accessory membrane; however, this congenital condition is most likely found incidentally during surgery, and patients are asymptomatic.[2]

TYPICAL RADIOLOGICAL FINDINGS

Plain radiographs in EPS are nonspecific but may show gas fluid levels similar to other causes of small bowel obstruction. Ultrasound may demonstrate clumped bowel loops, trilaminar appearance of a hyperechoic membrane, hypoechoic bowel wall, hyperechoic bowel contents, and ascites. CT scan may demonstrate small bowel loops encased within a thick enhancing peritoneal membrane >2 mm, signs of SBO, fixation of intestinal loops, ascites, bowel wall thickening, and peritoneal or mural calcification. MRI will show the same features as CT but may better discriminate between a thickened bowel and the peritoneal membrane vs. CT. An example of typical CT findings can be seen below (courtesy of RSNA).[2]

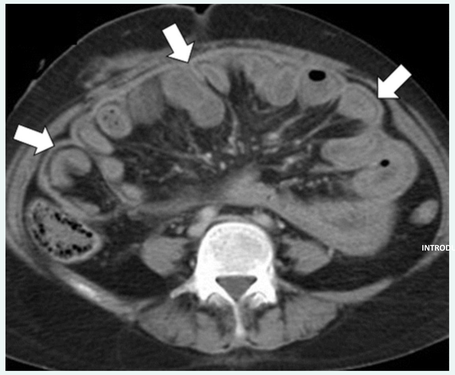

Figure 1: Axial contrast material-enhanced CT image demonstrating a thick soft-tissue mantle of EPS encasing the bowel loops (arrows).[2]

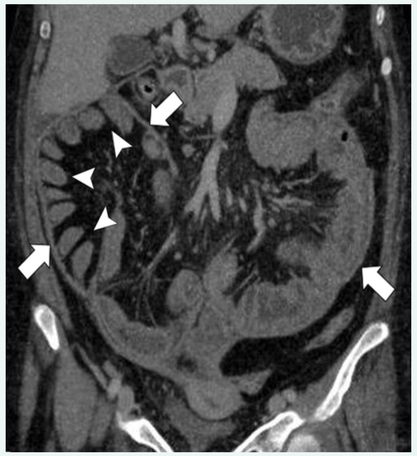

Figure 2: Coronal contrast-enhanced CT Image demonstrating thick soft-tissue mantle of EPS encasing the bowel loops is visible along with a characteristic pattern of arrangement of the small-bowel loops (arrowheads).[2]

CONCLUSION

EPS is a potentially life-threatening condition that results in fibrocollagenous cocoon-like encapsulation of the bowel. Consider EPS for a patient with a history of peritoneal dialysis for> 5 years, symptoms of ascites, and peritonitis that do not resolve with paracentesis and antibiotics. CT may reveal a thickened peritoneal membrane, bowel tethering, localized or diffuse peritoneal calcification, and encasement of the bowel. A laparoscopy with peritoneal biopsy is required to confirm EPS, and the typical findings are organizing fibrosis.2

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