Diverticulitis Resulting in Brain Abscess: A Case Report (Poster).

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Diverticulitis Resulting in Brain Abscess: A Case Report

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ABSTRACT

• Diverticular disease is common in the western hemisphere with approximately half of the United States population aged 50 and over being affected. Diverticulitis ranges from micropereforation to large-scale macoperforation resulting in feculent peritonitis. Treatment modalities are governed based on Hinchey classification. Extra-abdominal manifestations of diverticulitis, such as brain abscesses, remain exceedingly rare with only 5 previously reported cases in the literature.
• In this report, we describe a case of a 64 year-old female with acute diverticulitis that resulted in brain abscess formation. We present the clinical and radiologic features, as well as discuss treatment algorithm.

INTRODUCTION

• Diverticular disease collectively refers to diverticulosis and diverticulitis, which differ based on the presence of an inflammatory process.
• Pathophysiology and etiology stems from:
  - Low dietary fiber
  - Small stool calibers
  - Higher colonic intraluminal pressures
• Teniae are locations of colonic wall weakness
• With persistently high intraluminal pressures, diverticula may develop with the sigmoid colon being particularly susceptible [1]
• Very common in western countries, particularly USA
• Estimated more than half of Americans aged 50 or greater to be affected [1]
• Most diverticula are asymptomatic and are classified as diverticulosis, which can become problematic when inflamed
• Inflammation of diverticula leads to diverticulitis, which can lead to bowel perforation
• Treatment depends on Hinchey Classification, which outlines the disease severity [1]
• Incidence of bowel abscess of any etiology is low (0.3 – 1.3 per 100,000 persons per year [2,3]
• Extra-abdominal manifestations of diverticulitis are exceedingly rare with only 5 previously reported instances in the literature [4,5,6,7,8]

• Bilateral externalized ventricular drains by Neurosurgery
  - Thick purulent drainage
  - Cultures positive for Streptococcus intermedius
  - Antibiotic therapy with Ceftiraxone & Metronidazole
• General surgery evaluation revealed concerns for perforated diverticulitis versus perforated malignancy
  - Exploratory laparotomy and Hartmann procedure
  - Cultures positive for Enterococcus faecium
  - Final pathology: perforated diverticula and pericolonic abscess without evidence of dysplasia or malignancy

CASE REPORT

• 64 y/o female accepted in transfer to the Neurology Critical Care Service at a Level 1 Trauma Center
  - Presented with altered mental status, fever, headache, confusion, nausea, vomiting, and diarrhea
  - CT imaging of the head was concerning for intracranial hemorrhage and hydrocephalus
  - Intubated and sedated for GCS < 8 on admission
  - Abdominal distension and distended bowel
  - Pertinent laboratory studies: WBC 18.7, INR 1.2
• Additional imaging was performed:
  - CT chest/abdomen/pelvis significant for: (Figure 1)
    - Presence of numerous scattered sigmoid diverticulosis with mural thickening
    - Pro-sacral fluid collection with peripheral enhancement and internal gas
  - MRI/MRA brain significant for: (Figure 2)
    - Frontal periventricular intra-axial abscess
    - Surrounding edema and mass effect
    - Meningitis and ventriculitis

• Prolonged ICU hospitalization requiring tracheostomy, feeding tube (PEG) placement, and ventriculoperitoneal shunt
• Discharged to rehabilitation hospital on day 40
• At rehab, decannulated from tracheostomy, PEG removed, and return to baseline mental status
• Plans for colostomy reversal

DISCUSSION

• Approximately 25% of patient with diverticulitis develop complicated disease [9]
• Most common sites for extra-colonic abscess secondary to diverticulitis are pelvis and liver
• Review of literature reveals only 5 previously documented cases of diverticulitis leading to abscess formation in the brain [4,5,6,7,8]
• Bacteria involved in this phenomenon are commonly flora of the Streptococcus mVent (SMV) and Enterococcus faecium species, both of which were isolated in this patient.
• When disseminated infection is present, prompt direct source control is required with both medical and surgical interventions
  - Nervous system lesions can be treated with modalities ranging from antibiotics through open debridements
• With brain abscess resulting from diverticulitis seldom reported in the literature, it is our hope that reporting our experience will raise awareness and allow for earlier diagnosis and treatment

References:

6. 7. 8.