CASE REPORT

A 77-year-old Caucasian female presented with a history of fever, abdominal pain and diarrhea for the previous 3 days. The patient had been having 3–4 loose watery bowel movements each day. Two weeks prior to the onset of her present illness she was treated for sepsis with antibiotics (Piperacillin/Tazobactam and Vancomycin). She also had a past history of Clostridium difficile colitis six months ago.

On examination she had diffuse abdominal tenderness. Laboratory results showed a leucocyte count of 48,000/μL with 42% bands and lactate 3.1 mmol/L. The stool samples were positive for Clostridium difficile toxin. She was treated with metronidazole and oral vancomycin. The following day the patient’s condition deteriorated, became somnolent and went into septic shock. She was transferred to the intensive care unit. Vasopressors were required to maintain her blood pressure. On examination, the abdomen was more distended with increased tenderness. An X-ray of the abdomen was done which is shown below.

Questions
1. What does the flat plate X-ray demonstrate?
2. What is the most common diagnosis?
3. What is the pathogenesis of the radiological abnormality?
4. What is the differential diagnosis?

Figure 1.
Fellows’ Corner

ANSWER
1. The plain X-ray of the abdomen shows “thumbprinting sign” in large intestine.
2. Thumbprint sign is classically seen in ischemic colitis.
3. The sign occurs secondary to submucosal hemorrhage and edema from capillary leakage [1].
4. Differential diagnosis of thumbprinting include: mesenteric ischemia, mesenteric vein thrombosis, amyloidosis of gut, inflammatory bowel disease, intestinal lymphoma, infective colitis pneumatosis cystoides intestinalis, and following abdominal trauma.

On day 4 of admission to the hospital, the patient did not show any clinical improvement with medical management and underwent a total colectomy. The biopsy of the specimen showed “pseudomembranous colitis.” Because of her poor clinical condition a colonoscopy was not performed. Thus the explanation for “thumbprinting” was not identified. It is not possible under microscopy to determine the etiology of pseudomembranous colitis as it is present in both Clostridium difficile colitis as well as in ischemic colitis [2].

Reference: