Radiology Case Reports

Volume II, Issue 1, 2007

Pneumoretroperitoneum Associated with "Dirty Mass": An Unusual Case of Rectal Perforation

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Perforation of the rectum requires early recognition and treatment. The diagnosis of rectal perforation is sometimes difficult owing to non specific clinical presentation, especially in elderly patients, in whom, in case of acute abdomen, Computed Tomography (CT) is increasing used as first diagnostic procedure [1]. Several CT signs of gastrointestinal perforation have been described [2, 3]. Recently another CT finding related to colonic perforation called " dirty mass" has been reported [4]. We present a case of extraperitoneal rectal perforation secondary to colonoscopy in which CT demonstrated the presence of a focal collection of extraluminal fecal matter ("dirty mass") associated with pneumoretroperitoneum.

Case Report

An 81-year-old female was admitted to our hospital following the sudden onset of severe abdominal pain and fever. Physical examination showed a distended and tender abdomen, decreased peristalsis and signs of peritoneal irritation. Four days before hospital admission the patient was submitted to colonoscopy that was normal. Due to the critical clinical conditions, the patient was submitted to abdominal CT.

Emergent helical abdominal CT demonstrated a focal collection of extraluminal gas together with extraluminal fecal matter ("dirty mass") in the perirectal space (Figure 1) associated with air-fluid dilatation of some ileal loops in the pelvis (Figure 2). A large amount of pneumoretroperitoneum arising from the perirectal space was also observed in the presacral space (Figure 3).

Laparotomy revealed an extraperitoneal rectal perforation localized at 6 cm from the anus and a subperitoneal abscess causing small bowel obstruction. Fecal spillage was confirmed at surgery. Repair of the perforation, abscess drainage and systemic antibiotic therapy were performed.

Patient's postoperative course was uncomplicated and the patient was discharged 16 days later.

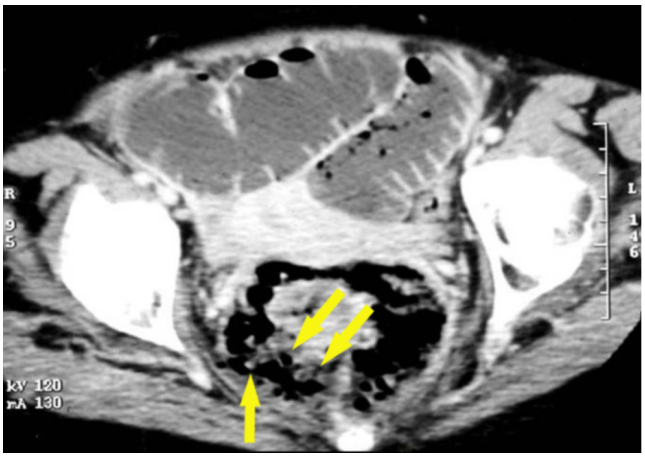

Figure 1. Helical abdominal Computed Tomography (CT) after intravenous administration of contrast agent shows a focal collection of extraluminal gas with fecal matter ("dirty mass",arrows) in the perirectal space.

Citation: Liguori P, Reginelli A, Sparano A, Ruggiero G, Pinto A. Pneumoretroperitoneum associated with "dirty mass" Radiology Case Reports. [Online] 2007;2:51.

Abbreviations: CT, computed tomography

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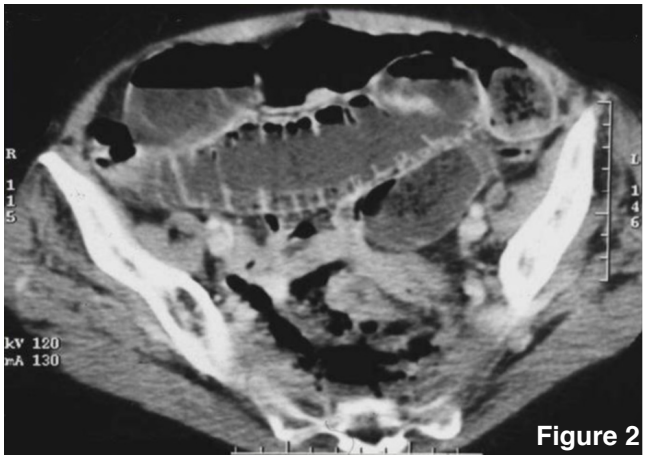
DOI: 10.2484/rcr.v2i1.51



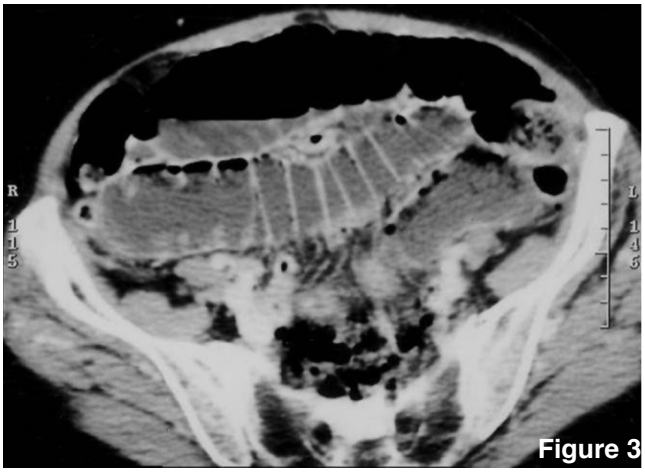


Figure 2. CT shows also air-fluid dilatation of some ileal loops. **Figure 3.** CT demonstrates a large amount of pneumoretroperitoneum in the presacral space.

Discussion

The incidence of iatrogenic large bowel perforations ranges from 0.1% to 0.9% after colonoscopy [5]. Preoperative diagnosis is sometimes difficult because of nonspecific clinical presentation. Radiologic examination is very important for the diagnosis of intestinal perforation: it is well known that the sensitivity of CT is superior to plain radiographs in detecting free air [6].

Several CT signs of gastrointestinal perforation have been described [2,3]. Saeki et Al. reported another CT finding related to colonic perforation called " dirty mass" [4]. This is a focal collection of extraluminal fecal matter located very close to the perforation site: the sizes of the dirty masses are variable, ranging from 1 cm to 6 cm [4].

Extraluminal air caused by rectal perforation dissect in most cases cranially to the retroperitoneum: this distribution of air occurs because transmural rectal tears occurring below the peritoneal reflection are more commonly extraperitoneal [5]. Recognition of pneumoretroperitoneum is important since rupture of a segment of the gastrointestinal tract is frequently involved: pneumoretroperitoneum following endoscopic procedures is extensive because of the high pressure gradient generated and the large volume of air insufflated. While such air is not in itself dangerous, prompt recognition of its origin is essential as serious septic conditions may be involved [7].

In our case helical abdominal CT demonstrated the presence of a focal collection of extraluminal fecal matter in the perirectal space and a large amount of pneumoretroperitoneum in the presacral space arising from the perirectal space.

For the diagnosis of colonic perforation, CT plays a very important role because of its ability to demonstrate abnormalities such as focal collection of extraluminal fecal matter and free retroperitoneal air. The "dirty mass" associated with pneumoretroperitoneum are specific indicators for colorectal perforations.

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