

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

---

### Medical Imaging Quiz – Case 20

A 35-year-old female patient was brought to the emergency department complaining of abdominal pain after having a motor vehicle accident.

Physical examination revealed belly tenderness; however the abdomen was soft and there was no rebound. The hematocrit was normal and her leucocytes, too. She conducted to the X-ray department and both her chest x-ray (CXR) and the abdominal x-ray were normal. The FAST ultrasound of the abdomen revealed no free fluid in peritoneal cavity and no contusion in liver, spleen, pancreas or kidneys. The patient remained under observation stable and was therefore treated conservatively. Next day all her tests were normal and she released under instructions.

Ten days later she came back to the emergency department with abdominal pain in the right quadrant and rebound. Her hematocrit was normal but one unit lower than before whereas her WBC were 10.000/mL. An ultrasound was performed and revealed a small amount of fluid in Douglass pouch. The abdomen X-ray showed no free air.

Due to persistence of her symptoms, a CT-scan (computed tomography) was then performed in the abdomen after having received orally Gastrografin solution and intravenous administration of contrast medium. The CT-scan demonstrated a thickened wall at the ascending colon with blurring of the pericolic fat (figures 1–4). Because of her accident history the finding was attributed



Figure 1



Figure 2



Figure 3

ARCHIVES OF HELLENIC MEDICINE 2011, 28(5):716–717  
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2011, 28(5):716–717

M. Pavlou,  
S. Mylona,  
A. Anagnostara,  
N. Roppa-Lepida

Department of Computed Tomography  
and Interventional Radiology, "Hellenic  
Red Cross" General Hospital, Athens,  
Greece

to large bowel wall hematoma. She underwent laparoscopy and was found to have a laceration on the ascending colon.



**Figure 4**

**Comment**

Colon injury occurs in 2–15% of patients having blunt abdominal trauma. Blunt trauma causing colon rupture is well recognized although rare; more usually, the small bowel rather than the large one is that which is damaged.

CT findings included:

- Specific of bowel rupture: Extraluminal oral contrast or luminal content extravasation and discontinuity at hollow viscous wall
- Suggestive: (a) Pneumoperitoneum, (b) gas bubbles close to the wall, (c) thickened (>4–5 mm) bowel wall, (d) bowel wall hematoma, (e) intraperitoneal fluid of unknown source.

CT has been shown to be accurate for the diagnosis of bowel injuries and the diagnostic test of choice in the evaluation of blunt

abdominal trauma in hemodynamically stable patients.

Differential diagnosis included: (a) Inflammation (diverticulitis, Crohn’s disease, ulcerative colitis, pseudomembranous enterocolitis, appendicitis, endometriosis), (b) malignancy (colon cancer, lymphoma, peritoneal carcinosis), (c) edema (ascites, post operative, hypoproteinemia), (d) ischemia/infarct (ischemic colitis, colon infarct). Patient’s history of prior belly injury set the diagnosis.

**References**

1. MIRVIS SE, GENS DR, SHANMUGANATHAN K. Rupture of the bowel after blunt abdominal trauma: Diagnosis with CT. *AJR Am J Roentgenol* 1992, 159:1217–1221
2. NGHIEM HV, JEFFREY RB Jr, MINDELZUN RE. CT of blunt trauma of the bowel and mesentery. *AJR Am J Roentgenol* 1993, 160:53–58
3. BRODY JM, LEIGHTON DB, MURPHY BL, ABBOTT GF, VACCARO JP, JAGMINAS L ET AL. CT of blunt trauma bowel and mesenteric injury: Typical findings and pitfalls in diagnosis. *Radiographics* 2000, 20:1525–1536
4. SCAGLIONE M, DE LUTIO di CASTELGUIDONE E, SCIALPI M, MEROLA S, DIETRICH AI, LOMBARDO P ET AL. Blunt trauma to the gastrointestinal tract and mesentery: Is there a role for helical CT in the decision-making process? *Eur J Radiol* 2004, 50:67–73

Corresponding author:

S. Mylona, Department of Computed Tomography, “Hellenic Red Cross” General Hospital, 1 Athanasaki street, GR-115 26 Athens, Greece  
 e-mail: mylonasophia@yahoo.com