



A case of cecal volvulus mimicking Ogilvie Syndrome in a hospitalized patient with a pelvis fracture



Athanasios Tampakis^{a,*}, Raoul A. Drosier^a, Ekaterini Christina Tampaki^c,
Urs von Holzen^{a,b}, Tarik Delko^a

^a Department of Surgery, University Hospital of Basel, Basel, Switzerland

^b Indiana University School of Medicine South Bend, Indiana University Health Goshen Center for Cancer Care, Goshen, IN, USA

^c Laiko General Hospital, Athens University School of Medicine, Athens, Greece

HIGHLIGHTS

- Cecum Volvulus and Ogilvie Syndrome may have overlapping clinical features at the time of presentation.
- Typical profile patient for both entities: a bed-ridden patient with co-morbidities and an acute colonic distension.
- Cecum Volvulus requires immediate surgery.
- Ogilvie Syndrome requires principally a conservative treatment eventually with neostigmin.
- The absence of air throughout all colonic segments including the rectosigmoid on plain abdominal radiographs, might be the most important sign to exclude the diagnosis of Ogilvie Syndrome.

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ABSTRACT

Introduction: Cecal volvulus and ogilvie syndrome are two entities which may display similar clinical presentation but require different treatment approaches.

Presentation of case: An 84-year old male patient admitted for conservative treatment of a pelvis fracture, complained of abdominal cramps and flatulence on the third hospitalization day. Abdominal radiographs arose suspicion of cecal volvulus. The diagnosis was ruled out on the CT scan but however was later confirmed by an exploratory laparotomy.

Discussion: The management of cecal volvulus requires prompt (emergency) surgical intervention while Ogilvie syndrome can be principally managed with conservative treatment. Our patient's profile was typical for both entities. The absence of air throughout all colonic segments including the rectosigmoid on plain abdominal radiographs seems to be the most important sign in the exclusion of the Ogilvie syndrome diagnosis.

Conclusion: Cecal volvulus and Ogilvie syndrome display overlapping clinical features at their time of presentation and need to be carefully distinguished. By uncertainty, an exploratory laparotomy should always be performed, in view of the reported high mortality rate of cecal volvulus if surgery is delayed.

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1. Introduction

Colonic volvulus is a term used for the torsion of the bowel around its mesentery and occurs when a mobile portion of the colon twists around a fixed base, causing obstruction of a part of the colon at the point of maximal torsion. Without surgical treatment it

can compromise the blood supply and results in ischemia, gangrene, perforation and death [1]. Ogilvie syndrome or acute colonic pseudo-obstruction is defined as a massive dilation of the colon in the absence of mechanical obstruction and requires mostly a conservative treatment [2]. In our case, these two entities that demand completely different treatment approaches, displayed overlapping clinical features at the time of their manifestation.

* Corresponding author.

E-mail address: Athantamp@hotmail.com (A. Tampakis).

2. Presentation of case

An 84-year old male patient who was admitted for conservative treatment of a slightly dislocated left acetabulum fracture and a left superior pubic ramus fracture, complained of abdominal cramps and flatulence on the third hospitalization day. Nausea, vomiting and chills were not present and the last bowel movement was four days ago. The patient had no complaints of chronic obstipation and received paracetamol, metamizole and oxycodon as pain killers. Inspection of the abdomen revealed obvious abdominal distension. Auscultation revealed high frequency bowel sounds in the upper right quadrant with some tinkling bowel sounds in the left upper quadrant. Percussion produced obvious tympanic sounds on the upper right and left quadrant. Palpation showed no tenderness and no signs of a hernia. The patient had no fever, vital parameters were stable and no history of abdominal operations was reported.

The white blood count was $8.89 \times 10^9/L$, C reactive protein was 101.0 mg/L but not evaluable as the patient was already receiving antibiotics for a bilateral pneumonia and finally lactate was 1.0 mmol/L. Additionally, the patient has been receiving low molecular heparin in a therapeutic dosage due to chronic atrial fibrillation. Abdominal X-ray investigation revealed a distended bowel loop beginning in the right lower quadrant and spreading to the left upper quadrant with air fluid level, that raised suspicion of a cecal volvulus (Fig. 1). An abdominal CT scan was performed that revealed an obstruction in the ascending colon but no typical signs of twisting of the mesenteric root. Interestingly, a pelvic CT scan obtained the day before to evaluate surgical options of the fracture revealed no intestinal problems.

An exploratory laparotomy was performed approximately 6 h after performing the CT, which diagnosed a distended, freely floating caecum that had twisted around its mesenteric axis (Fig. 2) and was resected by performing a right colectomy. The patient's postoperative course was uncomplicated. Histology showed enlarged, congested blood vessels in the submucosa of the caecum with no signs of mesenteric ischemia, a 13 mm lipoma of the ileocecal valve, several hyperplastic polyps and tubular adenomas in the right colon.



Fig. 1. Abdomen plain radiograph where a massive dilatation of caecum is present.

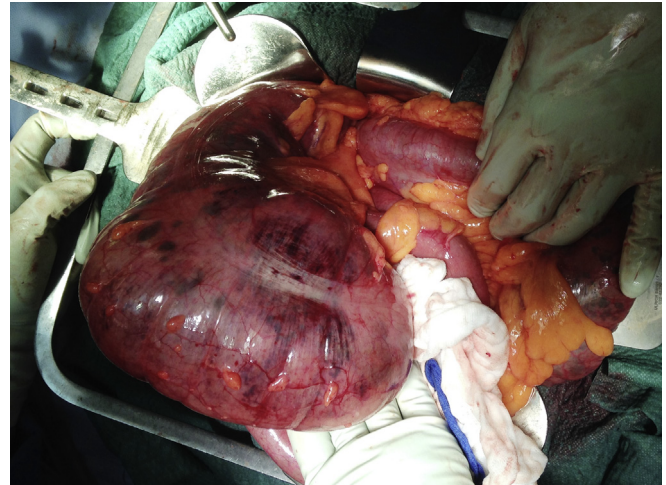


Fig. 2. Caecum dilatation in the surgical field during the explorative laparotomy

3. Discussion

Volvulus is usually found in the sigmoid colon (60.9%), the caecum (34.5%), the transverse colon (3.6%) or the splenic flexure (1%). Typical volvulus cases are patients that are mostly elderly people, patients with neuropsychiatric disorders and those residing in nursing care facilities. The following entities are considered as predisposing factors: previous episodes of volvulus, abdominal operations in the past, history of mega colon and chronic constipation. In the United States, volvulus causes 10%–15% [3] of all colonic obstructions and 1%–20% of all intestinal obstructions [1]. Concerning cecal volvulus, a Japanese study has described two age peaks in its incidence, one reported to range between the age of 10–29 years and one between 60 and 79 years. Interestingly, a peak incidence at those aged 70–79 years has been observed between 1999 and 2008 in another study [3].

Moreover, a significant increase of the incidence rates with cecal volvulus has been noted during the last years. This may be explained due to the parallel increase of screening colonoscopies, as during colonoscopy air insufflation leads to cecal dilatation. Other causative factors implicate pneumoperitoneum during laparoscopy, patient positioning, lateral tilting of the operating table and mobilization of parts of the right colon [1]. Two variants have been described in the pathogenesis of cecal volvulus. The first one is the axial rotation, generally clockwise, of the proximal right colon, the caecum and the terminal ileum around their mesentery. The second one is the so called “cecal bascule”, which is described as the antero-superior folding of the caecum occurring without axial rotation and is less likely to cause vascular compromise.

Typical symptoms include pain, obstipation, nausea and vomiting. Clinical features mentioned during clinical examination are abdominal distension and intermittent right lower quadrant pain. A range of symptoms and clinical findings from increasing abdominal pain to peritonitis and sepsis depend on the progress of the volvulus leading to intestinal strangulation [3]. Abdominal X-Ray and or CT scanning contribute to ascertain the diagnosis. Classic radiological findings are 1.) the “coffee bean” sign demonstrating a dilation of the caecum with air-fluid level in the left upper quadrant and 2.) the “bird's beak” sign referring to a progressive stenosis of afferent and efferent bowel loops that end at the side of the torsion in the right colon [4].

Regarding treatment, endoscopy is considered limited in the nonsurgical management of cecal volvulus showing low rates (30%) of effectiveness, higher rates of ischemia and technical difficulties

with colonoscopy. Surgery has the leading role and different surgical techniques can be performed with regard to the viability of the bowel. Doubtless, when gangrene is present, it's an indication that patients should undergo a resection. Right colectomy with resection of the necrotized tissue and creation of an anastomosis between colon and ileum can be performed. However, if the ability of the patient to heal due to secondary factors is limited, resection with ileostomy with or without mucous fistula should be performed. If the bowel is still viable detorsion of the bowel is possible, showing however high recurrence rates which range between 25% and 70% [3]. In the study from Halabi et al. [2], cases of volvulus with lower comorbidity score which were managed laparoscopically seemed to have lower mortality rates. In the same study, coagulopathy was identified as the strongest predictor of mortality for cecal volvulus followed by age more than 60 years. Presence of peritonitis, bowel gangrene and use of an ostomy were found to correlate with worse outcome as well.

Ogilvie Syndrome develops typically in hospitalized patients with a profile similar to our patient. Pseudo-obstruction [2] is defined as a massive dilation of the colon occurring in the absence of mechanical obstruction as it is demonstrable by the radiological finding of air throughout all colonic segments including the rectosigmoid. Neostigmine has been used as an effective way to decompress the colon of these patients. Cumulating evidence suggests however that the use of colonoscopic decompression as a therapeutic option for pseudo-obstruction is superior compared to the use of Neostigmine [5].

The basic differential diagnosis of our case included entities which cause a megacolon such as cecal volvulus, Ogilvie syndrome and toxic megacolon. Toxic megacolon was an unlikely diagnosis because the patient had no diarrhea and was not septic. Concerning cecal volvulus and Ogilvie syndrome our patient's profile was typical for both entities: a bed-ridden patient with co-morbidities presenting an acute colonic distension. Clinically, the diagnosis of an Ogilvie syndrome was likely in the context of the absence of symptoms suggesting a mechanical bowel obstruction, as our patient presented only with flatulence but experienced neither pain nor vomiting. On the other hand, air was not present throughout all colonic segments as it is typically demonstrable in cases of Ogilvie syndrome on plain abdominal films. Other typical radiologic signs such as the "coffee bean" suggestive of volvulus were however not present. CT scan was therefore performed for two reasons: firstly to evaluate a possible twisting of the mesenteric roots and secondly to elucidate possible radiologic signs of a mesenteric ischemia in the context of the presence of chronic atrial fibrillation, although the symptoms of the patient were not typical for mesenteric ischemia. Lactate levels were normal and the patient was already placed on low molecular heparin therapeutically.

Although a twisting of the mesenteric root was not obvious on the CT scan, no other non-invasive diagnostic was performed. Contrast enema and colonoscopy are two typical diagnostic methods which are used in cases raising suspicion of pseudo-obstruction. There are however authors, who suggest that air insufflation during colonoscopy might cause cecal dilatation and therefore a higher risk to develop cecal volvulus exists using colonoscopy. Consequently, due to high suspicion of cecal volvulus colonoscopy was not used in order to exclude Ogilvie Syndrome. Halabi and colleagues [1] observed in their large retrospective study that contrast enema in the management of colonic volvulus was historically used for diagnostic and therapeutic reasons and was used mostly for patients with severe comorbidities. In the present study CT, which is considered to have a high sensitivity in

the diagnosis of this entity, was used to exclude additionally other causes of colonic obstruction as already described.

The decision for an explorative laparotomy in view of the patient's significant co-morbidities was based mostly on the signs of obstruction seen on the scan, the clinical examination and also the reported high mortality rate of cecal volvulus, if early surgery is not performed. The thin cecal wall can be easily perforated when it is dilated, and a late diagnosis can be detrimental. Although CT failed to give a clear answer whether a cecal volvulus existed, according to the data presented above a delay in surgery until the patient presents sign of peritonitis would have increased the risk of mortality.

4. Conclusion

Cecal volvulus and Ogilvie syndrome have overlapping clinical features at the time of their presentation and need to be carefully distinguished. The absence of air throughout all colonic segments including the rectosigmoid on plain abdominal radiographs, may be helpful to exclude the diagnosis of Ogilvie syndrome. CT scan might not always demonstrate the twisting of the mesentery. If however uncertainty remains, prompt exploratory laparotomy should be performed, in view of the high mortality rate of cecal volvulus if surgery is delayed.

Conflicts of interest

The authors declare no conflict of interest.

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Ethical approval

The present study is no experimental study, therefore no official ethical approval was given.

Author contribution

Athanasios Tampakis: design of the study, writing of the manuscript.

Ekaterini Christina Tampaki: writing of the manuscript.

Other Authors: Corrections.

Guarantor

Athanasios Tampakis.

Raoul Droeser.

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