CASE REPORT

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A 69-year-old patient with Ogilvie's syndrome – case report

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Abstract

Ogilvie's syndrome is a rare disease with a relatively high mortality rate (15%). It consists in significant distension of the colon, which is not caused by its obstruction. According to researchers, it usually occurs in patients with severe illness, injury, or after surgery The aim of the study is to present a clinical case report of a patient with Ogilvie's syndrome. A 69-year-old patient with arterial hypertension, double-vessel coronary artery disease – after aortocoronary bypass surgery with abdominal pain, gas and stool retention, vomiting lasting for 3 days, came to the Hospital Emergency Department. No peritoneal symptoms were observed on examination, the abdomen was soft on palpation, no audible peristalsis. A standing X-ray of the abdominal cavity showed no perforation of the gastrointestinal tract. In the planned and performed sigmoidoscopy, no obvious obstruction in the sigmoid colon was observed. The cause of the obstruction was Ogilvie's syndrome.

Key words

electrolyte disturbances, Ogilvie's syndrome, acute colonic pseudo-obstruction

INTRODUCTION

Acute colonic pseudoobstruction (ACPO), known as Ogilvie's syndrome, is a relatively rare condition, first described in 1948 in two patients by Sir William Ogilvie [1]. It is accompanied by diarrhea with hyponatremia and hyperkalemia [2]. It is characterized by acute distension of the colon without any mechanical obstruction inside the bowel or external pressure.

Wells et al. reviewed the literature on the basis of which it was not possible to clearly determine the cause of the syndrome; however, the main role is attributed to dysregulation of the autonomic colon with the coexistence of predisposing factors [3]. According to researchers, it usually occurs in patients with severe illness, injury, or after surgery, and the estimated incidence is 100 patients per 100,000 hospital admissions, with a mortality rate of 8%. A significant increase in mortality (45%) is observed when pseudo-obstruction of the colon is accompanied by ischemia and perforation, which occurs in up to 15% of patients [3].

The aim of the article paper is to describe the clinical case of a patient with Ogilvie's syndrome. The dissemination of knowledge about this rare disease may contribute to a faster diagnostic process, and increase the chances of effective therapy.

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CASE REPORT

A 69-year-old patient with arterial hypertension, two-vessel coronary artery disease – after coronary artery bypass surgery, presented to the Hospital Emergency Department with abdominal pain, gas and stool retention, and vomiting lasting 3 days. The patient did not remember the medications he had taken. Moreover, he strongly denied having taken antibiotics recently. On examination, no peritoneal symptoms were observed, the abdomen was soft on palpation, no audible peristalsis. Laboratory tests showed the following deviations: amylase – 156 U/l [N: 28–100], creatinine – 2.38 mg/dl [N: 0.6–1.3], urea – 101 mg/dl [N:10–50], potassium – 5.33 mmol/l [N: 3, 5–5.1]; sodium – 137 mmol/l [N: 136–145]. Both WBC (white blood cells) and inflammation parameters, such as CRP and procalcitonin, were correct. A standing X-ray of the abdominal cavity showed no perforation of the gastrointestinal tract, significantly dilated loops of the large intestine with fluid levels were described (Fig. 1). Abdominal ultrasound showed no other abnormalities of the organs, numerous reflections from gases were noticeable. 4 hours after admission, increasing renal failure parameters were observed, i.e. creatinine 2. – m74 mg/dl [N: 0.6 – 1.3], uric acid – 8.9 mg/dl [2.5–7.1], D-dimers – 2337 ng/ml. There was an episode of congestive vomiting.

On the basis of the recommendations from the surgical consultation, a nasogastric tube was placed, after a while the circulation was stopped in the PEA mechanism, cardiopulmonary resuscitation lasting 3 minutes was effective.

A CT scan of the abdominal cavity (Fig. 2) showed segmentally dilated loops of the large intestine up to 9

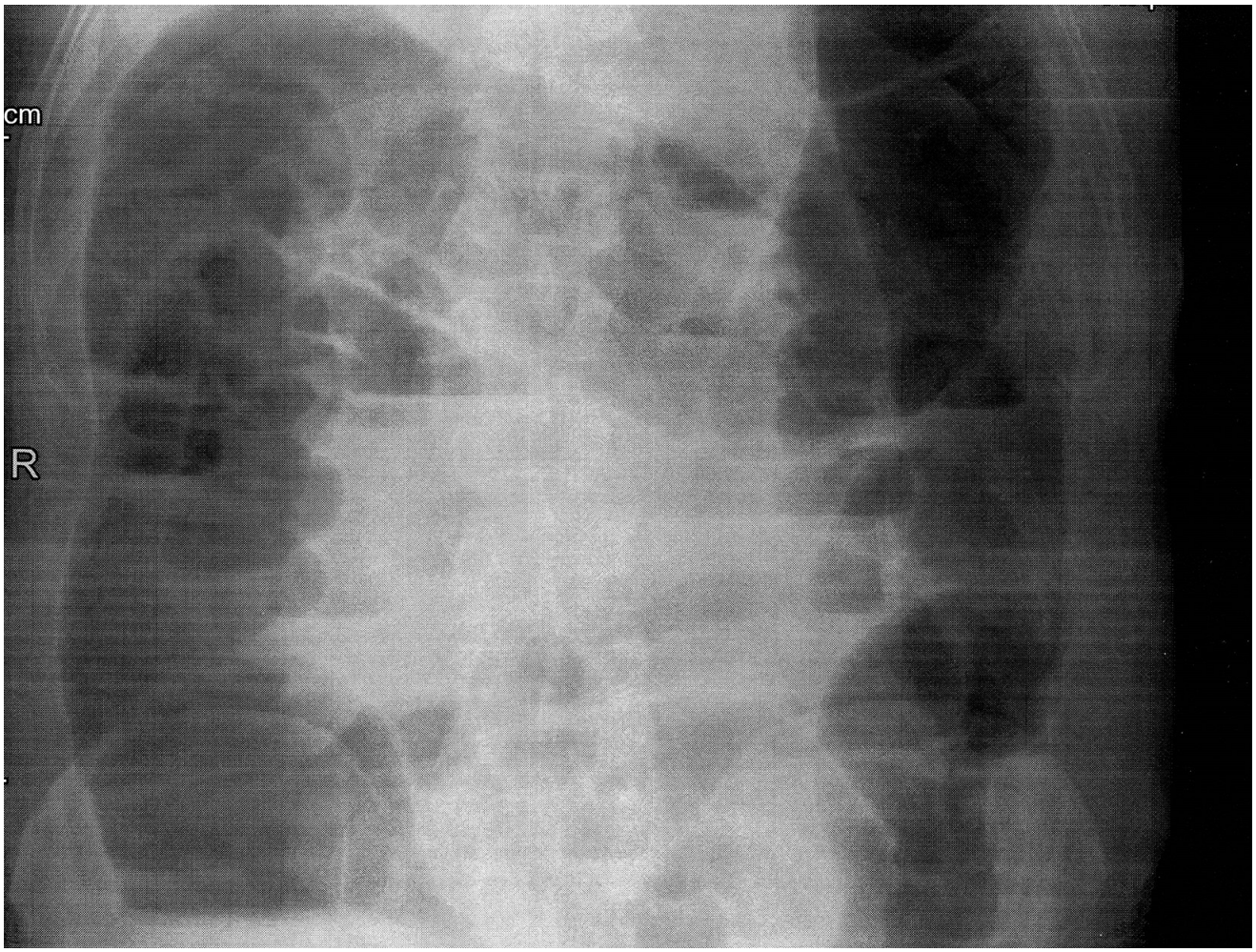

Figure 1. Abdominal Radiograph

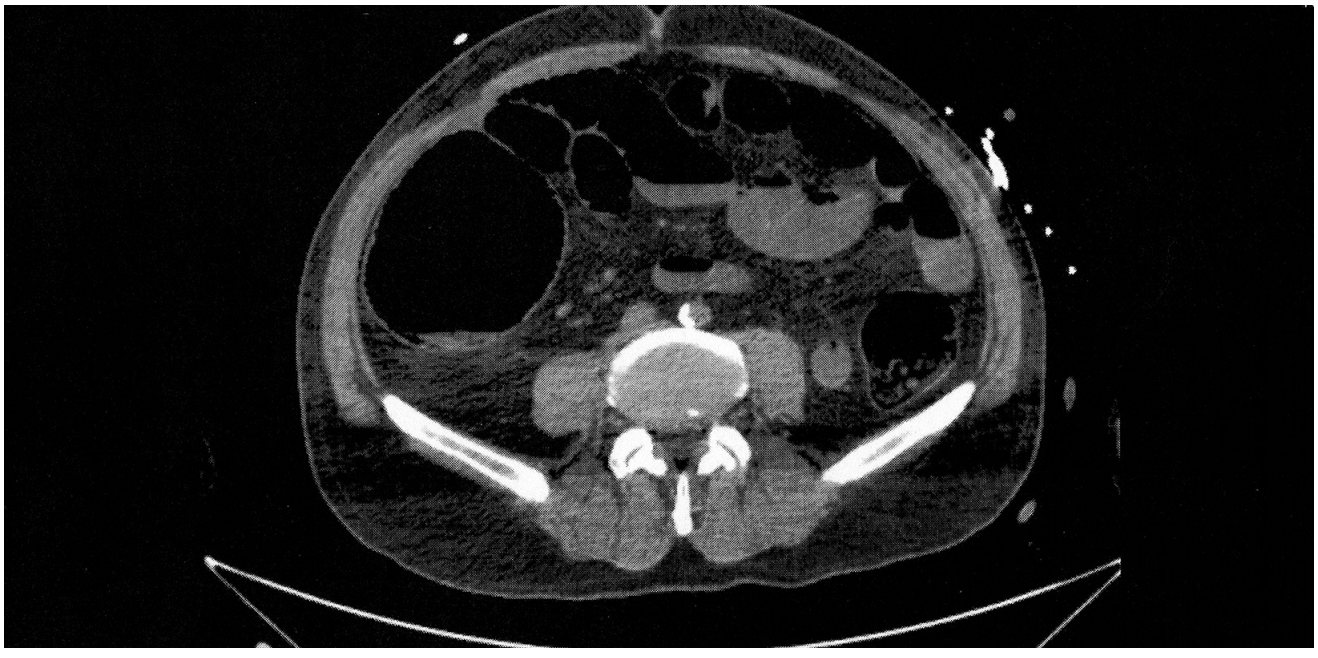

Figure 2. Computed tomography of the abdomen

centimeters, with fluid levels, without visible obstruction. The following laboratory abnormalities were observed: GFR – 18 L [N:100–140], phosphorus – 7.48 mg/dl [N:2.7–4.5], amylase – 400 U/l [N: 28- 100], creatinine – 3.59 mg/dl [N: 0.6–1.3], urea – 135 mg/dl [N: 10–50], potassium – 4.27 mmol /l [N:3.5–5.1], ionized calcium – 0.78 mmol/l [N:1.13–1.32], elevated inflammatory parameters, sepsis was suspected.

In the planned and performed sigmoidoscopy, no obvious obstruction in the sigmoid colon was observed. Due to the patient's critical condition, a decision was made to perform an exploratory laparotomy, which was performed immediately.

Critical dilatation of the cecum and ascending colon, significantly widened transverse colon and descending colon were found. A cecostomy was performed. Despite intensive treatment, the patient's condition deteriorated, the tendency to hypotonia persisted, and the patient died a few hours after the operation.

DISCUSSION

Taking into consideration the clinical picture (vomiting, lack of mobility, increased circuit of the stomach), results of laboratory test and imaging studies (dilatation of the colon in X-Ray, in CT, and without obstruction of colon in colonoscopy) during the case conference in the hospital a diagnosis of Ogilvie's syndrome was made.

The patient in the presented case report above may be diagnosed with acute colonic pseudoobstruction (ACPO), i.e. Ogilvie's syndrome. Making a diagnosis of ACPO is commonly a diagnosis of exclusion [11]. Ogilvie's syndrome should be differentiated from, among others, acute toxic megacolon (megacolon toxicum), that can be a complication in patients suffering from either colitis ulcerosa or pseudomembranous enterocolitis caused by *Clostridium difficile*. The diagnosis requires performing both laboratory and imaging tests [4]. It is worth noting that there were no abnormalities in the sigmoidoscopy which could correspond with those observed in the afore-mentioned diseases. The patient did not have diarrhea, as a consequence pseudomembranous enterocolitis was excluded.

In the medical literature, Ogilvie's syndrome could be differentiated from Hirsprung's disease, but in that case the symptoms would be observed in childhood which had not been reported by the patient. Also, dilatation of the colon due to chronic constipation was not the reason in this case [13]

During the hospital case conference other obstruction causes were also precluded. Neither small intestine dilatation, which is peculiar to the ileus, nor obstructing lesion in sigmoidoscopy were observe; therefore mechanical obstruction was also excluded. In CT scan there were no ischemic changes.

It is possible to suspect with high probability that acute kidney injury (AKI) was prerenal. Firstly, long-lasting vomiting leads to dehydration. Furthermore, abdominal distension can result in increasing abdominal pressure that causes compartment syndrome leading to hypovolemia and prerenal AKI [12]. Urea-to-creatinine ratio (UCR) was higher than 40 and the medical history was without kidney disease burden. CT scan did not show urinary tract obstruction, thanks to which excluding postrenal AKI was possible.

During hospitalization, cardiac arrest was observed, presumably caused by electrolyte imbalance. There were no ECG changes, such as ST segment depression or T wave inversion. Both early diagnosis and interventions to avoid ischaemia and perforation were essential [5].

Acute colonic pseudoobstruction most often occurs in hospitalized patients due to trauma, severe musculoskeletal disorders, after surgery, especially cardiac surgery, people using drugs, anticholinergics, patients with sepsis, electrolyte imbalance [6], or acute renal failure. It has been suggested that acute colonic pseudoobstruction is caused by an imbalance of autonomic regulation in the distal colon [7]. According to Haj et al., one of the most frequently observed electrolyte disturbances in patients with Ogilvie syndrome is hypocalcemia, observed in 62% of patients, with the level of calcium correlated with the diameter of the intestine, unlike other electrolytes. The symptoms presented by patients are varied, but the leading ones are bloating and abdominal pain (80%), nausea and vomiting (60%), and constipation (60%) [6].

The study by Underhill et al. showed an increased incidence of Ogilvie's syndrome among men over the age of 60, in whom the criteria were met by the described clinical case [8].

The management of patients with acute colonic pseudoobstruction includes treatment of other disorders occurring in patients that may be the cause, correction of electrolyte levels and fluid pressure, and decompression of the gastrointestinal tract with a nasogastric tube [9]. Abdominal radiographs are recommended at 12–24 hour intervals to assess disease progression [8].

Neostigmine has been used in the conservative treatment of Ogilvie's syndrome. According to a meta-analysis by Valle et al. of 4 studies, the single-dose efficacy of neostigmine in resolving Ogilvie syndrome was 89.2%. Importantly, neostigmine appears to be effective for both surgical and other causes of colon obstruction. It should be noted that treatment with neostigmine may be associated with side-effects such as: abdominal pain (even in half of patients), salivation, vomiting or, less frequently, bradycardia [10].

In the absence of response to the implemented treatment methods, cecostomy or colon resection should be considered [4]. Previously suggested implementation of surgical treatment after the ineffectiveness of conservative treatment applied for 48–72 hours was replaced by the possibility of extending it to 5 days, unless the patient's clinical condition deteriorates. In patients with symptoms of peritonitis that may suggest perforation or ischemia, exploratory laparotomy is recommended. The cecostomy performed in the described patient enables immediate decompression of the colon [8].

CONCLUSIONS

Ogilvie's syndrome is a rare disease with a relatively high mortality rate, which is why it is so important to disseminate knowledge about this disease among doctors. Quick implementation of conservative therapy or endoscopic intervention, and ultimately surgery, contribute to a significant improvement in the health of patients.

Considering the variety of causes of acute colonic pseudoobstruction, the presented clinical case is intended to suggest a clinical diagnosis to physicians of various specialties. Clinicians should normalize accompanying disorders of electrolyte balance, renal parameters, inflammation [6]. A rapid increase in the size of the colon can lead to perforation

and ultimately to peritonitis, which can lead to death; therefore, time plays an extremely important role in the diagnostic and therapeutic process.

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