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Case Report

Acute Colonic Pseudo-Obstruction (Ogilvie's Syndrome): A Case Report

Ugur Gokcelli, Orhan Ureyen, Murat Uz and Enver Ilhan*

Department of General Surgery, Division A, Health Sciences University, Bozyaka Education and Research Hospital, Izmir, Turkey

***Corresponding Author**: Enver Ilhan, Department of General Surgery, Division A, Health Sciences University, Bozyaka Education and Research Hospital, Izmir, Turkey.

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Abstract

Ogilvie's syndrome (OS), which is also defined as acute colonic pseudo-obstruction, is massive colonic dilatation in the absence of other causes, such as mechanical obstruction or toxic megacolon. Although the actual incidence is unknown, it is more common in patients with comorbid conditions. The exact pathogenesis has not been understood, yet; however, autonomic regulation alterations in the motor function have been implicated. Multiple metabolic, traumatic, and pharmacological factors play a predisposing role. Colonic necrosis and perforation are the most severe complications. The presence of comorbidities, ischemia-perforation status, and appropriate evaluation and early diagnosis are the major prognostic factors. In the differential diagnosis, this condition must be differentiated from mechanical bowel obstruction, toxic megacolon, and *C. difficile* infection. Herein, we report a patient who underwent surgery with the diagnosis of acute abdomen and was found to have OS during exploration and was successfully treated with decompression without fecal diversion.

Keywords: *Ogilvie's Syndrome; Pseudo-Obstruction; Neostigmine; Decompression; Surgery*

Introduction

Ogilvie's syndrome (OS), which is also referred to as acute colonic pseudo-obstruction, manifests as massive colonic dilatation in the absence of mechanical obstruction. Although the actual incidence is unknown, it is more common in patients with comorbid conditions. Massive colonic dilatation was first described by an English surgeon Sir William Heneage Ogilvie in 1948 [1]. The exact pathogenesis has not been understood, yet; however, autonomic regulation alterations in the motor function have been implicated. Increased sympathetic activity coupled with decreased parasympathetic activity has been implicated in the pathogenesis [2]. Multiple metabolic, traumatic, and pharmacological factors with predisposing factors lead to pseudo-obstruction, altering the autonomic regulation of colonic functions. Colonic necrosis and perforation are the most severe complications [1]. The presence of comorbidities, ischemia-perforation status, and appropriate evaluation and early diagnosis are the main prognostic factors. In the differential diagnosis, this condition must be differentiated from mechanical bowel obstruction, toxic megacolon, and *C. difficile* infection. Conservative treatment involves gastrointestinal decompression with nasogastric tube and rectal tube insertion and fluid and electrolyte replacement. Medical treatment primarily involves neostigmin administration. Surgical treatment is indicated, in case of conservative and medical treatment failure or co-existing ischemia-perforation [3].

Herein, we report a patient who underwent surgery with the diagnosis of acute abdomen and was found to have OS during exploration and was successfully treated with decompression without fecal diversion.

Case Report

A 79-year-old male patient was admitted to the emergency room with complaints of abdominal pain, nausea, vomiting, and inability to pass gas and stool for the past five days. His past medical history was remarkable for chronic obstructive pulmonary disease and vertigo. Physical examination revealed widespread abdominal tenderness and muscular defense. The ampulla recti was empty on digital

examination. Blood tests did not show leukocytosis with a C-reactive protein (CRP) level of 196 mg/dL and creatinine level of 1.2 mg/dL. Electrolytes were within normal ranges. Abdominal X-ray in the standing position revealed colonic air-fluid levels with large bases (Figure 1). Abdominal contrast-enhanced computed tomography raised the suspicion of a colonic tumor (Figure 2). The cecal diameter on X-ray was 9.9 cm and 8.5 cm on CT. The patient underwent surgery with the preliminary diagnosis of mechanical bowel obstruction. During exploration, all colonic segments from cecum to the sigmoid colon were extremely dilated. There was no evidence of ischemia, necrosis, or perforation in the colonic segments. Also, there was no intrinsic or extrinsic cause of mechanical obstruction. Decompression was performed intraoperatively by inserting a rectal tube. The patient was considered to have OS and operation was ended without performing fecal diversion. The patient passed gas and stool and tolerated oral intake in the postoperative period, and he was discharged on day 7 after surgery. The patient is still under follow-up without any problems for three months.

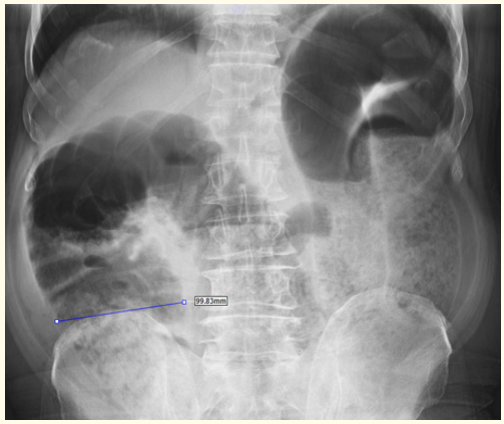

Figure 1: *The air fluid level on abdominal X-ray.*

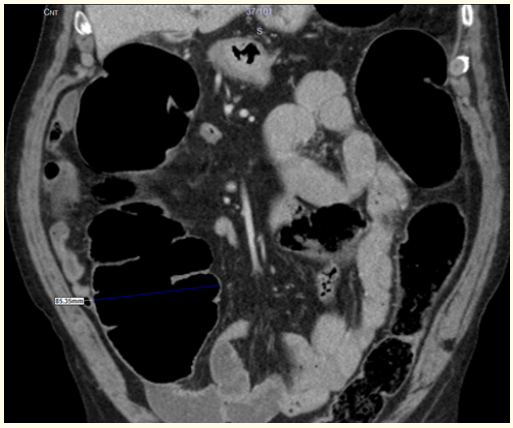

Figure 2: *The colonic tumor suspicion in abdominal contrast-enhanced computed tomography.*

Discussion

Ogilvie's syndrome, which is also referred to as acute colonic pseudo-obstruction, manifests as massive colonic dilatation in the absence of mechanical obstruction. The patients often have a progressive disease such as Parkinson's or Alzheimer's disease. It mostly affects patients aged between 64 and 74 years [4]. In the study by Wegener., *et al*. [4] which included a total of 1,027 patients with OS, postoperative state was the most common comorbidity (23%), followed by cardiovascular diseases (17.5%), other systemic disorders (15%),

and trauma (11%). Colonic dysfunction secondary to impaired sympathetic-parasympathetic dysfunction is implicated in the pathogenesis [5]. Elderly patients with comorbidities usually present with abdominal pain on admission. Orthopedic surgery is often associated with OS [6]. The abdomen is extremely distended, abdomen has a tympanic sound to percussion, and ampulla recti is empty and distended during digital examination. Fever, abdominal tenderness, and leukocytosis are common in the presence of ischemia and perforation. However, these symptoms may also occur in the absence of these complications. Fever is present in 78% of patients developing ischemia and perforation. However, fever may be accompanied in 31% of patients without these complications [7]. Abdominal distension may develop within 3 to 7 days; it may also develop rapidly within 24 to 48 hours. The mean time to abdominal distention is five days in the postoperative period in patients undergoing surgery. Abdominal X-ray in the standing position shows extremely gas-filled colonic segments [1]. A typical radiographic finding of OS on CT is proximal colonic dilation with a transition point at the level of the splenic flexure [8].

The risk of perforation is higher, if the cecal diameter is greater than 12 cm and distension lasts more than six days. Spontaneous perforation has been reported in 3 to 15% of the patients with a mortality rate of ≥ 50%. In addition, the rate of mortality is two-fold higher, if the cecal diameter exceeds 24 cm and the mortality rate is five-fold higher if decompression is delayed for more than seven days. Therefore, timely treatment is of vital importance [1].

The American Society of Gastrointestinal Endoscopy (ASGE) has published guidelines for the treatment of OS. Accordingly, patients with acute colonic distension are administered 24-hour conservative treatment, when mechanical and toxic causes are ruled out. In case of conservative treatment failure, intravenous (IV) neostigmin 2 mg is initiated for the patients with a cecal diameter of greater than 12 cm and distension lasting more than three days. In addition, repeated treatment is administered in patients with partial responses or relapses. Colonoscopic decompression is performed in patients who are unresponsive to the repeated treatment [9].

Oral intake is discontinued upon establishing the definite diagnosis, and IV fluid and electrolyte resuscitation are initiated, followed by nasogastric suction. Laxatives are not recommended, as they cause excessive gas production. Opiates affecting the colonic motility, anti-motility agents, and calcium channel antagonists are also discontinued. These patients often experience difficulties in mobilization. The patients should be mobilized in the bed. The majority of the patients are successfully treated with conservative treatment. Previous studies have reported 70% success rate and 14% mortality rate for conservative treatment [2].

Neostigmin is administered in cases unresponsive to conservative treatment. Neostigmin is a reversible choline esterase inhibitor affecting nicotinic and muscarinic receptors and it initiates colonic propulsion, increasing the colonic motor activity and colonic passage [10]. Several studies have reported 90% success rate for neostigmine, compared to placebo. Neostigmin IV is administered at a dose of 2 mg. Up to three doses can be administered every three hours in patients who are unresponsive to treatment within three hours [11,12]. However, neostigmin is contraindicated in patients with mechanical bowel obstruction, ischemia and perforation, pregnancy, uncontrolled arrhythmia, bronchospasm, and renal failure with creatinine levels above 3 mg/dL. Patients should be monitored during neostigmin administration and atropine should be made available [13]. Polyethylene glycol electrolyte solution (PEG) [14], erythromycin [15], cisapride [16], and tegaserod [17] are the other pharmacological agents used in the medical treatment.

Colonic decompression is recommended in cases with cecal distension greater than 10 cm, distension lasting more than 3 to 4 days, unresponsive to 24 to 48-hour supportive therapy, and in cases where neostigmin is contraindicated. Bowel preparation is not applied for decompression. Of note, decompression is not performed in the presence of perforation or peritonitis. Many studies have shown the efficacy and safety of decompression with a success rate of 80% and a complication rate of 1 to 5% [18,19].

Fluoroscopic or endoscopic cecum catheterization is another decompression method [20-22]. High success rates have been reported with ultrasound or fluoroscopically-guided tube cecostomy [23,24]. The rates of morbidity and mortality associated with surgical tube placement have been reported to be 50% and 19%, respectively [25].

Surgery is indicated in patients with worsening clinical condition or perforation and in those who are unresponsive to conservative and medical treatment, and decompression. However, surgery is associated with an increased morbidity and mortality rate, due to the

presence of comorbidities with. Previous studies have reported a mortality rate of 30 to 40% in patients with an advanced age or in those with ischemia or perforation [26,27]. Surgery includes colostomy, ileostomy, cecostomy, and segmental or subtotal colonic resection with exteriorization or primary anastomosis [2,28].

Conclusion

In conclusion, OS is a fatal disease and should be considered in patients with comorbidities presenting to the emergency room with abdominal pain. Treatment options include conservative and pharmacological treatment, decompression, and surgery. Previous medical history and surgical history of the patient must be carefully investigated. The diagnosis should be made before surgery, if possible. If surgery is performed considering a mechanical cause of obstruction, it can be terminated after draining the colonic gas with a rectal tube without performing fecal diversion in the absence of ischemia and perforation to avoid an additional morbidity, as in our case.

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