Case Report

A rare case of acute intestinal pseudo-obstruction (Ogilvie's syndrome) following open-heart surgery

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Abstract:
Pseudo-obstruction of the colon, also known as Ogilvie's syndrome is caused by excessive intestinal dilatation, which sometimes leads to risky consequences. The definition of pseudo-obstruction is a condition in which the patient has symptoms of intestinal obstruction without any mechanical cause. It is often seen following various surgeries, including heart surgery. Given the rarity of this complication and high morbidity and mortality of undiagnosed Ogilvie syndrome cases, we have reported a case of this syndrome in a sixty years old woman after open-heart surgery developing acute renal failure after surgery.

Keywords: Ogilvie's syndrome, Heart surgery, Pseudo-obstruction.

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Introduction

Acute colonic pseudo-obstruction (ACPO), also called Ogilvie's syndrome, is gastrointestinal (GI) tract disease, described as a severe dilatation of part or all of the colon and rectum without any mechanical obstruction (1, 2). The responsible mechanism of the development of this syndrome is yet poorly understood; however, abdominal X-ray may also reveal the presence of fluid levels (3). Ogilvie's syndrome may develop after a broad range of medical and surgical conditions such as systemic illness, malignancy, pregnancy, trauma, open heart surgery and other surgical interventions (4-8). However, it has been reported that the Ogilvie's syndrome is most commonly observed after coronary artery bypass grafting (CABG) (3). A mortality rate of 14% has been reported in patients diagnosed with Ogilvie's syndrome which is notably higher among those who require operative intervention (3). In this report, we have presented a woman with Ogilvie's syndrome that developed after CABG and the pursued treatment approach.

Case Presentation

A 60-years-old woman with no past medical history was admitted manifesting dyspnea. After complete evaluation, she underwent open-heart surgery (mitral valve replacement and CABG). On the fifth day post-operation in the intensive care unit (ICU), she experienced abdominal distention and complained of abdominal pain and absence of bowel movements. In this situation, she received appropriate treatment for a post-operative ileus. However, the distention got worse until day tenth post-operation when surgical consultation was done. On physical examination, the patient was ill and dehydrated with a distended abdomen and generalized tenderness. Laboratory test showed elevated leukocyte count (17300) with a 90% polymorphonuclear cell content and prerenal azotemia (urea, 95 mg/dl; serum creatinine, 1.5 mg/dl). Abdominal X-ray revealed pneumoperitoneum and colonic distention were most remarkable at cecum (Fig 1).

The patient was prepared for laparotomy. Operative findings revealed the presence of significantly distended colon in the right side with no mechanical obstruction and a perforated caecum with mild fecal peritonitis. A blowhole caecostomy was done and the patient was transferred to ICU. In post-operative period, acute renal failure was diagnosed and treated with dialysis. On 35th post-operation day, the patient was weaned off ventilator and was discharged on the 57th day with a well overall hemodynamic condition.

Discussion

ACPO, as a novel clinical syndrome, was first described in 1948 in a report of two cases by Sir William Heneage Ogilvie who was a GI surgeon and orthopedist (9). This new syndrome, which was later called Ogilvie's syndrome, was characterized by large bowel distention, acute abdominal pain, and constipation in the absence of any mechanical obstruction (9). Ogilvie's syndrome most frequently occur in critically ill or postoperative patients and hospitalized elderly patients suffering from several medical or surgical conditions (10). The exact underlying pathogenetic mechanisms of ACPO is still unclear but an imbalance of sympathetic and parasympathetic colonic innervation is likely to be involved (1). CABG has been reported to be the most common operation linked with ACPO, accounting for one fourth of the procedures (3). A neurogenic mechanism is probably responsible for the occurrence of Ogilvie's syndrome following CABG surgery. A disruption of the parasympathetic innervation to the colon may be the possible mechanism leading to colonic pseudo-obstruction (3). Several studies have found that treatment with neostigmine, as a parasympathomimetic drug, was a safe, and effective way of decompressing the colon in ACPO pati ents (11, 12), which provides evidence for the proposed theory of neuropraxia. Another possible explanation for this condition is the inhibition of GI hormones that are normally controlled by neurohypophysis and contribute to bowl movement. This can be supported by the fact that Ogilvie's syndrome has been treated successfully with somatostatin and ostreotide (13). During CABG surgery, the vagus nerve which provides the main parasympathetic nerve supply to GI tract may be injured due to local hypothermic slush application or during extensive lateral pericardiotomy. Further, inadequate anesthesia may result in intraoperative awareness and movement which may lead to sympathetic discharge, a potential cause for relative loss of parasympathetics (4). An elongated extracorporeal circulation during CABG surgery may be another culprit for the development of Ogilvie's syndrome due to ischemia-induced injury to the parasympathetic ganglia (4). In a case report describing a 67-year-old male patient with history of hypertension who was diagnosed with

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Ogilvie's syndrome following CABG surgery, the authors excluded the possibility of mechanical or ischemic trauma due to normal hemodynamic parameters observed during the extracorporeal circulation period (4). This disease can occur at any age, and males are more likely to develop this syndrome than females (ratio 1.5:1) (14). It has a similar clinical presentation to that of obstruction in distal colon. The diagnosis of Ogilvie's syndrome is based on physical examination, follow-up and clinical picture of acute obstruction (i.e. X-ray and computed tomography) to exclude the mechanical causes of obstruction (15). As mentioned earlier, a massive dilatation of the colon and acute abdominal pain together with impaired flatus or stool outflow during the postoperative period should remind ACPO (3). In the case report by Başbuğ and colleagues, the neostigmine methylsulfate was administered to the patient after a definite diagnosis of Ogilvie's syndrome was reached (4). Following the initial intravenous bolus injection of neostigmine methylsulfate (dose of 2.5 mg), the bowel gas output was observed and the patient was able to defecate. Although abdominal distention gradually resolved, the medical team continued the medication for two more days intravenously (dose of 2.0 mg). The patient was discharged on the eighth postoperative day with no residual abdominal symptoms (12).

Conclusion

Ogilvie's syndrome is a rare and life-threatening digestive complication which may occur after CABG surgery. The diagnosis of Ogilvie's syndrome following the CABG surgery can only be confirmed by a clinical picture of acute obstruction in order to exclude the mechanical causes. Immediate diagnosis and appropriate management are needed to prevent perforation of the colon in patients with ACPO. Due to the high potential for mortality, surgical treatment should be offered only as of the last chance.

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Authors Contributions

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Conflict of interest:

There are no conflicts of interest in this study.

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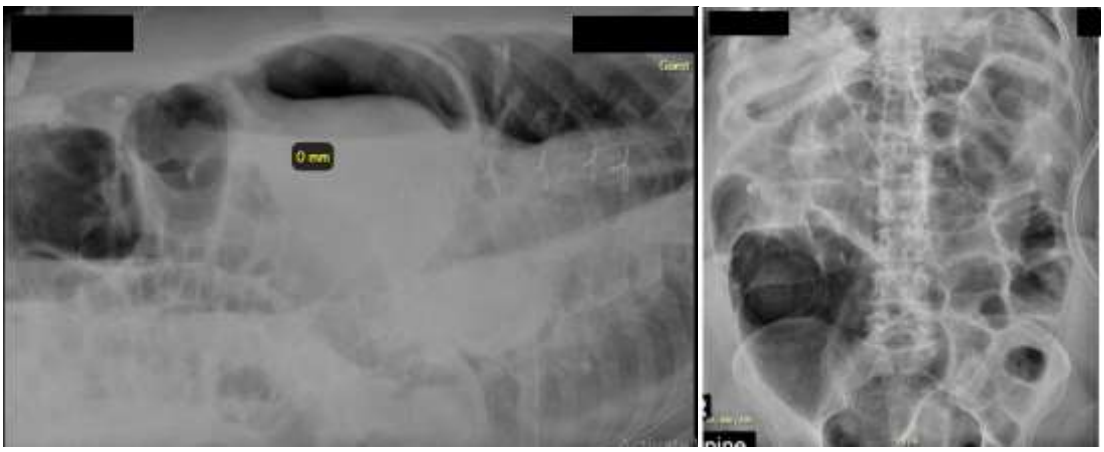

Figure 1. Abdominal X-ray

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