Anadolu Kardiyol Derg
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Ogilvie syndrome: a rare but lethal intestinal complication of coronary revascularization

Ogilvie sendromu: Koroner revaskülarizasyonun nadir fakat ölümcül bir intestinal komplikasyonu

Introduction

We report a case of a rare but lethal complication of coronary artery bypass graft surgery (CABG); Ogilvie syndrome. Coronary surgery is also reported to be complicated with gastrointestinal complications other than Ogilvie syndrome with an incidence of 1-2% (1, 2). These complications are associated with 11% to 70% mortality risk. However, incidence of Ogilvie syndrome after coronary surgery is unclear. We believe that it is extremely rare.

Case Report

A 68-years-old female patient was admitted to our department for CABG with stabile angina pectoris. Physical examination was within normal limits. She was obese with body mass index (BMI) of 37.9 kg/m^2. Patient underwent three- vessel CABG with conventional cardiopulmonary bypass (CPB) and vena saphena magna grafts. Internal mammarian grafts were not used for this case because of abnormal preoperative pulmonary function tests.

On the second postoperative day, patient presented fever, nausea and vomiting, abdominal distention, generalized abdominal pain with bowel movement alterations. Clinical presentations and symptoms of the patient worsened gradually afterwards.

Figure 1 and 2 present sequential daily abdominal X-ray from postoperative day 2 to 5. In these sequential X-ray evaluations, there was no evidence of intestinal perforation. However, certain radiological findings of intestinal enlargement and abdominal distention were recorded. On the other hand, in this early period, we did not see any of the radiological signs of massive bowel obstruction including a presence of multiple gas-fluid levels on supine radiographs.

On the sixth postoperative day, patient underwent abdominal surgery via median laparotomy due to massive dilatation of intestinal structure and radiological findings of intestinal perforation with more than six gas-fluid levels all over the abdomen (Fig. 3).

We observed definitive visual findings of impaired bowel perfusion, which seemed to result to mega colon (Fig. 4). Due to generalized intestinal ischemia and tissue necrosis (Fig. 5), a subtotal colectomy with ileostomy was obligatory (Fig. 6).

Patient died on the 20th postoperative day of coronary revascularization due to systemic infection and multiorgan deficiency.

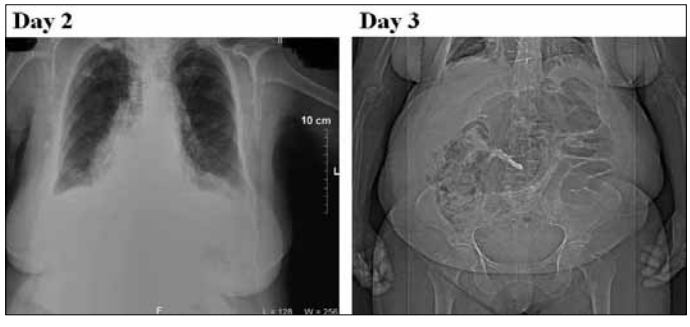

Figure 1. Sequential post-bypass abdominal X-ray on day 2 and 3: No evidence of intestinal perforation. However, certain radiological findings of intestinal enlargement and abdominal distention are seen

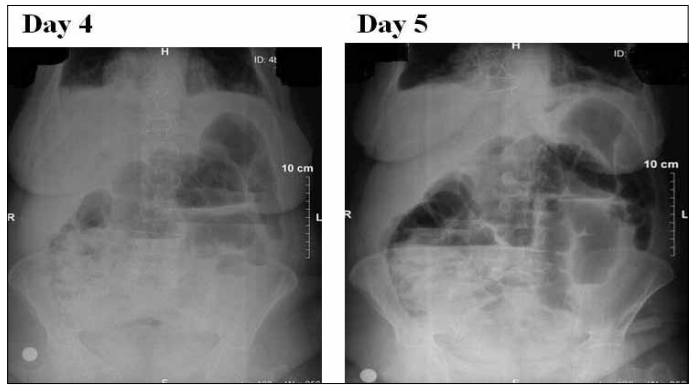

Figure 2. Sequential post-bypass abdominal X-ray on day 4 and 5. In this early period, no any of the radiological signs of massive bowel obstruction including a presence of multiple gas-fluid levels on supine radiographs are seen

Figure 3. Post-bypass abdominal X-ray on day 6. There is massive dilatation of intestinal structure and radiological findings of intestinal perforation with more than six gas-fluid levels all over the abdomen

Discussion

This rare syndrome was first described in 1948 by British surgeon Sir William Heneage Ogilvie (1887-1971) (1). Colonic dilatation after surgery is presented in the absence of a certain mechanical obstruction. Clinical features are acute pseudo-obstruction and massive dilatation of colon. Bowel diameters may exceed even 10 cm, especially in segments of cecum. Several reasons for Ogilvie syndrome are reported in previous studies (2). Major surgeries such as open- heart surgery and

Figure 4. Impaired bowel perfusion with megacolon, operative view

Figure 5. Intestinal ischemia and tissue necrosis, operative view for certain colectomy indication

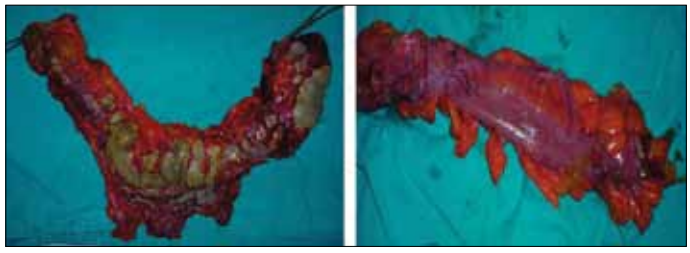

Figure 6. Subtotal colectomy material, resected

hip replacements, generalized systemic infective status, neurologic diseases, metabolic and cardiopulmonary disturbances and perioperative medications are generally accepted reasons.

Recent studies (3) suggest intraoperative gastrointestinal hypoperfusion to be the major etiological factor for postoperative gastrointestinal complications after CABG. Cardiopulmonary bypass time and prolonged aortic cross clamp time are also reported to be with visceral ischemia including bowel, splanchnic and gastric areas (4). Capillary closure phenomenon and shunting during this period can be caused by nonpulsatile CPB flow patterns. Besides, a pH decrease occurs during CABG, which is another possible reason for gastric complications such as ulcer formations and bleedings. A similar pH pattern is also observable for mucous intestinal tissue and intestinal villus (5). On the other hand, mesenteric ischemia is a catastrophic complication of CABG that can be caused by various conditions such as older age, intraaortic balloon pulsation implantations, perioperative hypotension, arrhythmia, metabolic acidosis, mesenteric atherosclerosis, thromboembolism during CPB and vasopressor medications (6). Furthermore, gastrointestinal bleeding is the most frequent postoperative complication. Paralytic ileus, cholecystitis, pancreatitis, bowel ischemia and intestinal perforations are also reported to be associated with CABG in different percentages (7).

Medications and co-morbidities were also studied as etiological reasons by several authors (8).

Ogilvie syndrome frequency after CABG has not been established. Original report of Ogilvie was based on acute colonic pseudo-obstruction in two metastatic cancer cases. The pathophysiology of Ogilvie syndrome after CABG is still not clear. Surgical trauma of vagus nerve and possible perioperative hypoperfusion of related sympathetic segments may result in colonic pseudo-obstruction and megacolon (9). Cecum is the most common localization for dilatation and perforation in the majority of cases. Ogilvie syndrome related mortality incidence has been reported in 15% to 50% of cases, which clearly depends on etiological condition.

However, colon diameter up to10 cm (especially in cecum) can be accepted as a threshold for bowel perforation.

Conclusion

Incidence of Ogilvie syndrome after coronary surgery is unclear and it presents a poor overall survival.

Volkan Yurtman, Süreyya Talay, Sebahattin Dalga, Zakir Aslan
Clinic of Cardiovascular Surgery, TÜTAV ŞİFA Hospitals Group, Erzurum-*Turkey*

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Address for Correspondence/Yazışma Adresi: Dr. Volkan Yurtman
TÜTAV ŞİFA Hastaneler Grubu, Kalp Damar Cerrahisi Kliniği, Erzurum-*Türkiye*
Phone: +90 442 232 55 55 Fax: +90 442 329 04 26
E-mail: volyurt@gmail.com
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