



ORIGINAL RESEARCH PAPER

General Surgery

OGILVIE'S SYNDROME-RELATED RIGHT COLON PERFORATION AFTER CESAREAN SECTION: A CASE SERIES

KEY WORDS: Cesarean Section, Colonic perforation, Ogilvie's syndrome, Pseudo-obstruction

Dr. Konappa. V

M.S, Associate Professor, Dept Of General Surgery, Narayana Medical College And Hospital, Nellore, Andhra Pradesh.

Dr. Bharath Guntupalli*

Post Graduate, Dept Of General Surgery, Narayana Medical College And Hospital, Nellore, Andhra Pradesh. *Corresponding Author

Dr. Bhavishya Gollapalli

Postgraduate, Dept Of OBGY, Narayana Medical College And Hospital, Nellore, Andhra Pradesh.

ABSTRACT

The objective of this article is to discuss and report three cases of right colon perforation secondary to post cesarean Ogilvie's syndrome (OS; colonic pseudo-obstruction) requiring right hemicolectomy. We retrospectively reviewed the case notes of three patients who underwent caesarean section and postoperatively developed OS. OS is an uncommon problem in patients undergoing caesarean section. Abdominal X-ray and water-soluble contrast enema are the main diagnostic modalities. Drip-suck therapy along with endoscopic or pharmacological decompression should be performed in early stages. In a significant percentage of patients, diagnosis is delayed resulting in bowel ischemia and perforation requiring surgical resection and adding significant mortality/morbidity. We recommend our obstetric colleagues to involve surgical team in earlier stages to avoid surgery-related mortality and morbidity. We also advocate general surgeons to be aware of OS in patients after caesarean section and recommend a stepwise systematic approach toward the diagnosis and management of OS.

INTRODUCTION

Ogilvie's syndrome (OS) or an acute colonic pseudo-obstruction remains a relatively uncommon and poorly understood large bowel pathology characterized by features of colonic obstruction in the absence of radiologically demonstrable mechanical cause [1]. This syndrome is associated with wide range of medical and surgical conditions, such as electrolyte imbalance, sepsis, spinal trauma/surgery, renal trauma/surgery/transplant, malignancy, congestive cardiac failure, burns, pelvic surgery, hip replacement, and Caesarean section. The pathophysiology of the OS is still not very clearly understood. However, as initially reported by Ogilvie in 1948 [1], an imbalance between the sympathetic and parasympathetic innervation of the colon is responsible for erratic peristaltic activity resulting in progressive colonic dilatation. The true incidence of OS is difficult to know because it is usually not recognized clinically until there is significant abdominal distension, and many subclinical cases probably go unrecognized and resolve spontaneously. If left unrecognized, OS can potentially lead to massive bowel distension resulting in bowel ischemia and perforation. The mode of treatment, age, cecal diameter, delay in management, and status of the involved segment of colon directly influence the mortality rate, which is approximately 15% with optimal management, compared with 36-44% in perforated or ischemic bowel [5]. It has been reported that in the United Kingdom in 1990 and 1991, up to 200 deaths per annum, 65% of which were in patients older than 75 years of age, may have resulted from acute colonic pseudo-obstruction [4]. The incidence of colonic ischemia and perforation in patients of OS has been quoted 10% and 20%, respectively. Colonic decompression is the most widely accepted therapy to treat patients of OS. Intravenous neostigmine has also been proven effective for the medical decompression of the colon [6]. Right colon involvement in OS following caesarean section has already been reported in the medical literature [7,8]. However, right colon perforation in patients of OS is scarcely described in the literature [7]. The objective of this article is to describe three cases of right colon perforation in patients of OS following caesarean section, which required laparotomy, colonic resection, and defunctioning stoma.

to abruptio placentae underwent emergency cesarean section. The procedure was performed by a senior Obstetrician under general anesthesia. On second postoperative day, she started complaining of right upper quadrant mild to moderate abdominal pain and abdominal distension. Initially, she was treated for postoperative ileus. She was encouraged to mobilize and rectal suppositories were given. However, she continued to be very uncomfortable and all conservative measures failed to resolve her symptoms. Six days later she suddenly deteriorated and developed severe abdominal pain associated with tachypnea, tachycardia, and dehydration. On examination, her abdomen was distended, diffusely tender, and resonant to percussion. Abdominal X-ray showed massively dilated colon (Fig. 1). She underwent abdominal ultrasonography, which revealed small amount of free fluid around gallbladder. Surgical review was requested with a clinical diagnosis of acute cholecystitis/acute appendicitis/postoperative ileus. She was commenced on drip-suck therapy with intravenous fluids, nasogastric aspiration. When she failed to progress clinically, she underwent laparotomy and found to have massively dilated right colon and omentum was plastered on to the distal ascending colon sealing an area of perforated colon. She had right hemicolectomy with end-to-end ileocolic anastomosis. Histopathology report confirmed perforation without any other colonic pathology. Her post right-hemicolectomy recovery was slow but uneventful and she was discharged home on Day 10 postoperatively.



Figure 1. Abdominal X-ray showing massively dilated colon.

Patients and operations

Patient 1

A healthy 35-year-old pregnant (33 weeks) woman who presented with antepartum pervaginal bleeding secondary

Patient 2

A 26-year-old female was admitted for elective cesarean section. On the first postoperative day, she started complaining of right abdominal pain associated with abdominal distension and tachycardia. She underwent abdominal ultrasonography, which showed gas-filled bowel loops throughout the abdomen and small amount of free fluid in the region of gallbladder. Because of persistent symptoms, on Day 4, she underwent computerized tomography of abdomen showing free fluid and massive amount of free gas in the peritoneal cavity (Fig. 2) consistent with visceral perforation. She underwent laparotomy and right hemicolectomy for multiple ischemic perforations of the ascending colon leading to fecal peritonitis. Histopathology confirmed the bowel perforation because of nonspecific cause. Her postoperative recovery was complicated by the development of right paracolic and right subphrenic collections, which required another laparotomy to drain. She was discharged home after 3 weeks.



Figure 2. CT showing free gas in the peritoneal cavity.

Patient 3

A 21-year-old female underwent semielective cesarean section secondary to abruptio placentae. The following day she developed abdominal pain, tachycardia, and moderate abdominal distension, which continued for the next 3 days. She was discharged home on symptom improvement but readmitted within 24 hours with progressive, nonresolving right upper quadrant pain. On examination, there was lowgrade temperature, tachycardia, distended tympanic abdomen, generally tender but more in the right upper quadrant, and bowel sounds were sluggish. Abdominal X-ray showed hugely distended large bowel. Water-soluble enema was performed to rule out any mechanical cause of large bowel obstruction, which showed dilated loop of large bowel, right colon being significantly dilated (Cecal diameter of more than 13cms Fig.3) than left. Because of poor response to conservative management, on 6th post cesarean day, she underwent laparotomy and right hemicolectomy for large ischemic perforation in the cecum resulting in fecal peritonitis. Histopathology showed transmural cecal wall necrosis with no obvious cause. Her postoperative recovery was slow but uneventful and she was discharged 10 days later.



Figure 3. Intraoperative picture showing dilated colon.

DISCUSSION

OS is not an uncommon condition, which may result in significant mortality and morbidity. It can occur at any age, but frequency has been reported higher in sixth decade of life. There is slightly higher incidence in males as compared with females (1.5:1), which is surprising because cesarean section has been reported the leading cause associated with OS [5,9]. Although iatrogenic bowel injury during the course of cesarean section may be considered and suspected for bowel perforation, there was no documentation about bowel trauma in operation notes of all three patients undergoing caesarean section. Clinical presentation of OS is similar to mechanical obstruction of bowel. Abdominal distension is usually painless unless there is an established colonic wall ischemia leading to perforation [10]. Abdominal X-ray is the most important diagnostic modality showing the features consistent with bowel obstruction, that is, dilated colon. There may be pancolonic dilatation or segmental colonic dilatation particularly right sided and cecum [10,11] according to LaPlace's Law. Water-soluble contrast enema is very helpful to rule out the mechanical cause of large bowel obstruction. In addition, because of its water solubility and higher osmolality, it can work as a prokinetic agent resulting in pharmacological decompression. Clinically, when there are features of peritonitis-like rebound tenderness and guarding, an erect chest X-ray can show free gas under right hemidiaphragm or computerized tomography scan can show free fluid inside the peritoneal cavity indicating bowel perforation. Cecal diameter of 9-12 cm should be considered the critical point [12,13] where urgent decompression is imminent to avoid the consequences of bowel wall ischemia and subsequent perforation. Once diagnosed, patients should be commenced on drip-suck therapy under strict observations. Patients should be properly hydrated by intravenous fluids, nasogastric tube should be inserted and aspirated routinely, and good fluid/ electrolyte balance should be established. Patients should be fasting, if possible all narcotic analgesics should be stopped and associated conditions should be treated to overcome the etiological factors. If conservative management fails to improve the clinical condition of the patients, then colonoscopic decompression should be considered. However, if there is established peritonitis or colonoscopy reveals bowel ischemia, then emergency laparotomy is mandatory [14]. Resection of the ischemic/perforated segment of the bowel should be carried out. Defunctioning stoma or closure of hole in the bowel wall with defunctioning stoma may also be considered in case of minimal fecal contamination after perforation [5,14]. Pharmacological treatment with neostigmine may be considered but caution should be taken when cecum is significantly dilated [2,5,15]. Pharmacological decompression with neostigmine has been reported successful in more than 90% patients in a published series [6]. Therefore, the authors recommended that the patients with clinically acute pseudo-obstruction in whom the cecum is not threatened should undergo a water-soluble contrast study to rule out mechanical obstruction, and then intravenous neostigmine may be attempted for pharmacological decompression. Naloxone, erythromycin, and cispride are few other pharmacological agents, which may potentially be used for decompression [7] in patients of OS. Although OS is an uncommon problem in patients undergoing caesarean section, it must be considered in patients who present with features of bowel obstruction. In our case series, only one patient underwent preoperative decompression, which failed. In remaining two patients, the diagnosis of OS was delayed which led toward bowel perforation requiring bowel resection. We recommend our obstetric colleagues to involve surgical team in earlier stages to avoid surgical resection. We also advocate general surgeons to be aware of OS in patients after caesarean section and recommend a stepwise systematic approach (Fig. 4) toward the diagnosis and management of OS.

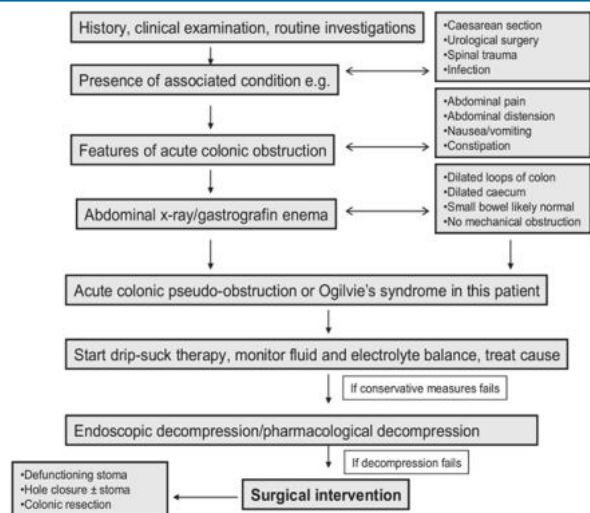


Figure 4. Flow chart for the suggested protocol of the management of Ogilvie's syndrome.

REFERENCES

- [1] Ogilvie H. Large-intestine colic due to sympathetic deprivation; a new clinical syndrome. *Br Med J* 1948;2:671e3.
- [2] Stephenson KR, Rodriguez-Bigas MA. Decompression of the large intestine in Ogilvie's syndrome by a colonoscopically placed long intestinal tube. *Surg Endosc* 1994;8:116e7.
- [3] Dorudi S, Berry AR, Kettlewell MG. Acute colonic pseudoobstruction. *Br J Surg* 1992;79:99e103.
- [4] Datta SN, Stephenson BM, Havard TJ, Salaman JR. Acute colonic pseudo-obstruction. *Lancet* 1993;341:690.
- [5] Vanek VW, Al-Salti M. Acute pseudo-obstruction of the colon (Ogilvie's syndrome). An analysis of 400 cases. *Dis Colon Rectum* 1986;29:203e10.
- [6] Turegano-Fuentes F, Muñoz-Jiménez F, Del Valle-Hernández E, Pérez-Díaz D, Calvo-Serrano M, De Tomás J, et al. Early resolution of Ogilvie's syndrome with intravenous neostigmine: a simple, effective treatment. *Dis Colon Rectum* 1997;40:1353e7.
- [7] Saha AK, Newman E, Giles M, Horgan K. Ogilvie's syndrome with caecal perforation after Caesarean section: a case report. *J Med Case Reports* 2009;3:6177.
- [8] Ernst RM, Müller RC, Hess T. Ogilvie's syndrome (acute idiopathic colonic pseudo-obstruction) after Caesarean section. *Gynakol Geburtshilfliche Rundsch* 2007;47:236e9.
- [9] Reece EA, Petrie RH, Hutcherson H. Ogilvie's syndrome in the post-caesarean section patient. *Am J Obstet Gynecol* 1982;144:849e50.
- [10] Nanni G, Garbini A, Luchetti P, Nanni G, Ronconi P, Castagneto M. Ogilvie's syndrome (acute colonic pseudoobstruction): review of the literature (October 1948 to March 1980) and report of four additional cases. *Dis Colon Rectum* 1982;25:157e66.
- [11] Villar HV, Norton LW. Massive cecal dilation: pseudoobstruction versus cecal volvulus? *Am J Surg* 1979;137:170e4.
- [12] Strodel WE, Nostrant TT, Eckhauser FE, Dent TL. Therapeutic and diagnostic colonoscopy in nonobstructive colonic dilatation. *Ann Surg* 1983;197:416e21.
- [13] Clayman RV, Reddy P, Nivatvongs S. Acute pseudo-obstruction of the colon: a serious consequence of urologic surgery. *J Urol* 1981;126:415e7.
- [14] Lopez MJ, Memula N, Doss LL, Johnston WD. Pseudo-obstruction of the colon during pelvic radiotherapy. *Dis Colon Rectum* 1981;24:201e4.
- [15] Munro A, Youngson GG. Colonoscopy in the diagnosis and treatment of colonic pseudo-obstruction. *JR Coll Surg Edinb* 1983;28:391e3.