

## Management of acute colonic pseudo-obstruction (ACPO) in post caesarean patients: Case series

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### Abstract

Acute colonic pseudo obstruction (ACPO), also known as Ogilvie syndrome, a rare entity associated with massive dilatation of the colon in the absence of any obstruction. Increase in luminal pressure of dilated colon causes bowel ischemia followed by perforation and rupture. Bowel ischemia and necrosis is associated with severe morbidity and mortality. We are reporting 4 cases of ACPO in post-caesarean patients diagnosed and managed at department of OBG (Vanivilas hospital), Bangalore medical college and research institute, Bangalore. We managed two patients conservatively and two patients underwent emergency laparotomy and caecostomy and hem-colectomy.

**Keywords:** Ogilvie syndrome, ACPO (acute colonic pseudo-obstruction), colonoscopy, neostigmine, hemi-colectomy

### Introduction

Acute colonic pseudo-obstruction (ACPO) is an acute pseudo-obstruction of the colon with a massive dilatation of the cecum and the ascending colon, without mechanical obstruction. It is a potentially life threatening condition with a risk of colonic perforation <sup>[1]</sup>. ACPO Occurs in hospitalized patients in association with severe illness, trauma, sepsis, metabolic imbalance, hip surgery, cardiac surgery, spinal anaesthesia, caesarean delivery <sup>[2]</sup>. No specific risk factor identified for ACPO. Pathophysiology is not correctly understood. Sir William Heneage Ogilvie who introduced this condition in 1948 suggested that it is an imbalance between sympathetic and parasympathetic innervation of the colon responsible for erratic peristaltic activity resulting in progressive colonic dilatation (atonic distal colon) and functional proximal obstruction (overactive sympathetic and underactive parasympathetic nervous system) <sup>[3]</sup>. While ACPO is more common in older patients, typically following abdominal surgery or secondary to medical comorbidities, it is also associated with

pregnancy and delivery, particularly following caesarean section <sup>[4]</sup>. Although ACPO after caesarean section is uncommon, it is associated with significant morbidity and even mortality <sup>[5]</sup>. Most of the post-operative patients presents with abdominal distension (90%), abdominal pain (80%), vomiting (60%), constipation (40%), paradoxical diarrhoea (40%), dyspnoea (40%), on examination most of the patients will be febrile with tachycardia and tachypnoea, abdomen will be tympanic to percuss, bowel sounds present in 80-90% of the patients, may be sluggish or absent. Mild to moderate tenderness present, guarding, rigidity and rebound tenderness suggestive of colonic ischemia and perforation <sup>[6]</sup>. Some patients continue to have normal bowel sounds, pass flatus and defecate, making the clinical picture unclear, thus delaying treatment. Blood investigations may be normal or in accordance with underlying conditions. Radiological investigations are definitive to diagnose such as plain radiograph of erect abdomen, computed tomography, water soluble contrast enema. Dilated colon has got increase in intra-colonic limal pressure which causes ischemia of colonic wall if persists can cause perforation. Risk of colonic perforation is more when caecal/colonic diameter exceeds 10-12cm and when distension present for more than 6 days. Conservative management should be tried in the beginning for 24-48 hours with nil by mouth, Intravenous fluids, pro-kinetic medications, nasogastric tube aspiration, 12-24 hourly monitoring of colonic diameter by radiograph. Colonic decompression is the most widely accepted therapy to treat patients of ACPO. Intravenous neostigmine has also been proven effective for the medical decompression of the colon <sup>[7]</sup>. Emergency laparotomy with resection is indicated in cases of colonic ischemia or perforation.

## Case reports

### Case-01

30 year old lady with diagnosis gravida-2 para-1 living-1 with 39 week period of gestation cephalic presentation with previous caesarean admitted for elective caesarean and sterilization. Antenatal, intraoperative period was uneventful. Patient was started on liquids on post-operative day 2. On post-operative day 3 she developed abdominal pain and distension associated with nausea and vomiting. On examination pulse-114bpm, BP-108/66mmhg, RR-20cpm, SpO<sub>2</sub>-96% on room air, abdomen uniformly distended with girth of 102cm, moderate tenderness present. No guarding-rigidity, Bowel sounds were sluggish. Serum electrolytes, liver function and renal function tests were normal. Plain x-ray erect abdomen showed dilated bowel loops. Initially treated for post-operative ileus. Kept on nil by mouth, intravenous fluids, inj. Pantoprazole and Metoclopramide with antibiotics. Ryle's tube was inserted, she was encouraged to mobilize, and surgical unit review was taken. However she continued to be very uncomfortable and all conservative measures failed to relieve her symptoms. CT abdomen was done on day 5 suggestive of massively dilated proximal colon with colonic diameter of 10cm. patient was given Inj. Neostigmine 2mg intravenous over 5min. continuous monitoring of vitals done. On post-operative day 6 colonoscopy decompression was done following which she was comfortable. Patient's vitals were stable throughout hospital stay. She got discharged on day 10.

### Case-02

A 27-year-old primigravida admitted at 39 + 2 weeks gestational age with preeclampsia for labour induction. Laboratory examination of the patient revealed haemoglobin 9.8 g/dl and platelets 1.98lakh. Her liver function tests and renal function tests were normal. There was evidence of one plus proteinuria on dipstick. Continued oral labetalol 100mg twice daily. Labour induced with dinoprostone gel 2 doses 6 hours apart followed by artificial rupture of

membrane and oxytocin infusion. Patient underwent emergency caesarean due to non-progression of labour. A live male baby weighing 3450 gm was delivered with no intraoperative complication. On postoperative day-2 mother developed a low grade temperature of 38.2°C and was managed conservatively. Next day she developed gross abdominal distension and an inability to pass flatus. On examination her temperature remained mildly elevated at 38.1°C, a respiratory rate of 28 cycles/ min, oxygen saturations was 97% on air and she had tachycardia (122b/min). Her blood pressure was 98/54mmhg. Her abdomen was tense and distended with sluggish bowel sounds. She was shifted to high dependency unit and monitored. After 24hours, she was better but her abdomen remained distended with no flatus passed. The abdominal distension persisted into day-4 post-partum at which point she developed nausea and vomiting. She was kept nil by mouth, a nasogastric tube was inserted, an abdominal X-ray was performed and a surgical unit opinion taken. Abdominal X-ray showed marked gaseous distension of both the small and large bowel. Computed tomography scan showed dilated colon to the level of the sigmoid colon. The patient managed with a prokinetic metoclopramide which significantly improved her condition. On postoperative day-6 she started passing flatus and her bowels opened. The patient discharged on day-10.

### Case-03

A 30-year-old woman was admitted in latent labour. Her earlier pregnancies had ended with 3 normal deliveries. She had no significant medical, surgical or family history. In the index pregnancy, she had an unremarkable antenatal course. She was admitted to labour room with spontaneous rupture of the membranes. She underwent emergency caesarean section due to non-reassuring cardio-toco-graph (CTG) in active labour. The procedure was uneventful, with the delivery of a female infant of 3600gm. Sterilization was done in accordance with the patient's antenatal request. On the third post-operative day, the patient complained of generalized moderate abdominal pain and distension. She was pale and had low-grade pyrexia. There was generalized abdominal guarding as well as rebound tenderness in the right hypochondria. Bowel sounds were present. She had not had passed stools for the first 2 post-operative days after which she developed diarrhoea. Full blood count, liver function tests, serum electrolytes and renal function tests were within the normal ranges. An ultrasound scan showed minimal ascites and a distended ascending colon (8 cm in diameter). An abdominal X-ray showed a hugely enlarged caecum, colon and ileum with no mucosal oedema (diameter >10 cm) the patient was placed nil by mouth and a nasogastric tube inserted. Blood, urine samples were sent for culture and sensitivity and started intravenous cefoperazone and sulbactam with metronidazole. Following a combined surgical review, a laparotomy was decided. A midline laparotomy revealed that both the small and large intestine were significantly dilated with no ischaemic changes or perforation. The small intestine was decompressed into the caecum followed by decompressing the caecum via a cecostomy tube. Post operatively she was monitored in the intensive care unit for 48 hours then transferred to high dependency unit. She had a good recovery, and the cecostomy tube was removed 15 days after the laparotomy. She was discharged on the 19th post-laparotomy day.

### Case-04

26-year-old female underwent emergency caesareans due to abruption. The following day she developed abdominal pain, tachycardia, and moderate abdominal distension, which continued for the next 2 days. She had progressive, non-resolving right upper quadrant pain. On examination, there was low grade temperature, tachycardia, distended tympanic abdomen, tender to palpate but more in the right upper quadrant, and bowel sounds were sluggish.

Abdominal X-ray showed hugely distended small and large bowel. Computed tomography was done which showed dilated loop of large bowel, right colon being significantly dilated (cecal diameter of more than 11 cm) than left. Because of poor response to conservative management, on the sixth post-caesarean day, she underwent emergency laparotomy and right hemi-colectomy for large ischemic perforation in the cecum. She was discharged 14 days later.

## Discussion

ACPO is associated with massive dilatation of colon in the absence of any mechanical obstruction may resulting in significant mortality and morbidity. It is surprising that, caesarean section has been reported the leading cause associated with OS. Clinical presentation of ACPO is similar to mechanical obstruction of bowel. The presence of abdominal tenderness and fever should raise the suspicion of impending caecal perforation. Abdominal X-ray is the cornerstone diagnostic modality showing the features (dilated colon) consistent with bowel obstruction<sup>[8]</sup>. Water-soluble contrast enema is very helpful to rule out the mechanical cause of large bowel obstruction. However, it carries the risk of barium contamination of peritoneal cavity if perforation does occur. In addition, because of its osmolality, it can work as pro-kinetic agent resulting in colonic decompression. Caecal dilatation has been reported an excellent indicator for impending bowel perforation. Caecal diameter of 10-12 cm should be considered the critical point where urgent decompression is imminent to avoid the consequences of bowel wall ischemia and subsequent perforation. In study by *Ponec et al.* ACPO presented with a median cecal diameter of 13<sup>[11]</sup>. Once diagnosed, patients under strict observations with proper hydration by intravenous fluids, nasogastric tube should be inserted and aspirated routinely, Patients should be fasting, if possible all narcotic analgesics should be stopped. If conservative management fails to improve the clinical condition of the patients, then colonoscopy decompression should be considered<sup>[9]</sup>. Caecal resection or hemi-colectomy are needed in the presence of extensive necrosis or perforation. Pharmacological treatment with neostigmine may be considered but caution should be taken when cecum is significantly dilated. Naloxone, erythromycin, and cisapride are few other pharmacological agents, which may potentially be used for decompression in patients of OS<sup>[10]</sup>. In *Ponec et al.* study 17 out of 24 women were treated with neostigmine<sup>[11]</sup>, whereas 24 out of 65 women received Neostigmine or colonoscopy in the study by *Jayaram et al.*<sup>[10]</sup>. These comparisons suggest that, conservative management still be an option we diagnose ACPO earlier and kept under good observation.

## Conclusion

Although ACPO is an uncommon but potentially life threatening problem in patients undergoing caesarean section. It must be considered in patients who present with features of bowel obstruction. ACPO is characterised by increasing abdominal distension, both clinically and on radiography. Intestinal perforation will present with peritonitis and sepsis, necessitating urgent laparotomy. Medical treatment with neostigmine or bowel decompression via colonoscopy. Mortality rates in Ogilvie syndrome is as high as 45-50%. In our patients, the diagnosis of ACPO was made after CT scanning. We tried conservative management followed by colonoscopy decompression in two patients. Early diagnosis and intervention prevented bowel ischemia and perforation which mandates emergency laparotomy and bowel resection as done in last two cases described.

### Conflict of interest

The authors have no conflict of interests.

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