

Case Report

# Recurrent Acute Colonic Pseudo-obstruction Following Cesarean Section

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Acute colonic pseudo-obstruction (ACPO), also known as Ogilvie's syndrome, is a rare clinical entity. It is characterized by large bowel obstruction in the absence of mechanical obstruction. Management of ACPO includes mechanical decompression and conservative therapy with neostigmine. Surgery may be required when conservative treatment fails, or bowel ischemia and perforation are suspected. We described a 19-year-old female patient with recurrent ACPO following cesarean section and treatment with neostigmine.

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**Keywords**

Acute colonic pseudo-obstruction;  
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An acute colonic pseudo-obstruction (ACPO), also known as Ogilvie's syndrome, is a rare clinical entity characterized by a large bowel obstruction in the absence of a mechanical obstruction. It was first described by Ogilvie in 1948<sup>1</sup> and later named after him. The syndrome is reported to be associated with metabolic disorders, traumatic factors, history of recent surgery, neurologic disorders, serious infections, and idiopathic causes.<sup>2,3</sup>

ACPO is believed to be caused by either sympathetic overactivity or parasympathetic suppression, resulting in an adynamic ileus. The diagnosis of ACPO is acute abdominal distention, colonic dilatation on image and exclusion of mechanical obstruction by imaging methods, such as abdominal radiography and

computed tomography (CT).<sup>4</sup> Management of ACPO initially consists of mechanical decompression and conservative pharmacological therapy. For the majority of patients, the condition is frequently relieved after pharmacological manipulation is offered.<sup>2,3</sup> Surgery is indicated when conservative treatment fails, or bowel ischemia and perforation are suspected.

We describe the case of a 19-year-old female patient with repeated intermittent abdominal distention and pain for 1 year after cesarean section. A 19-year-old woman (gravida 1, para 1) underwent cesarean section 1 year prior. She suffered from repeated abdominal distention and intermittent abdominal pain after the cesarean section, and the symptoms frequently resolved after conservative treatment. However,

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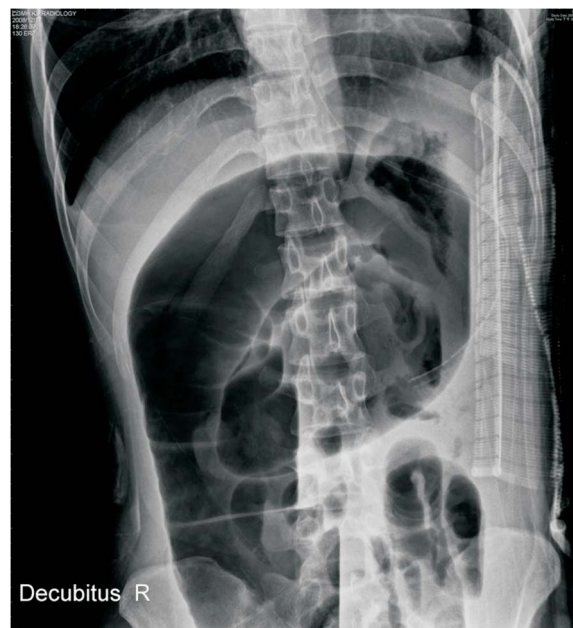
this time, she was transferred to the ER from a local hospital due to the failure of conservative treatment after continuous attacks of diffuse abdominal distention and pain. She had no stool passage or flatus for 3-4 days, with repeated vomiting. Physical examination on arrival revealed a distended tender abdomen and decreased bowel sounds. Blood tests revealed only hyponatremia. There was no leukocytosis, no left shifting, and no elevated C-reactive protein (CRP) or lactate. Plain abdominal radiography (Fig. 1) and abdominal CT showed diffuse colon dilatation. Owing to failure of conservative treatment, we performed emergent exploratory laparotomy. However, neither an organic lesion nor adhesion was found. Besides, diffuse colon dilatation with transitional zone over recto-sigmoid junction was the only operative finding. T-loop colostomy was created for decompression. A diffuse right colon dilatation over 12 cm was found 3 days after operation (Fig. 2). Suction for decompression via colostomy was performed; however, repeated abdominal distension was still noted 1 day later. Slowly infused intravenous neostigmine (1 mg) were then administered and repeated the same dose about 12 hours after initial treatment. Although bedside EKG and vital signs monitoring were set up, she still sustained an episode of near syncope while going to bathroom. Or-

thostatic hypotension was highly suspected. Flatus passage via colostomy noted on the next day and no recurrence of colonic distention occurred. She was later discharged, and colostomy removal was scheduled and performed 3 months later. She received regular follow-up in our outpatient department and had no disease recurrence.

Colonic pseudo-obstruction is described as a constellation of symptoms and signs of a large bowel obstruction without evidence of structural obstructive lesions in the colon. This syndrome presents both as acute and chronic disorder. It is reported that 95% of cases of ACPO are associated with medical or surgical conditions,<sup>3</sup> with most cases being associated with metabolic, traumatic, postoperative, and idiopathic causes and pregnancy.<sup>5</sup> It is reported that 3-15% of ACPO lead to ischemia and perforation if appropriate treatment is not immediately provided. As high as 50% of the mortality is associated with perforations, highlighting the need for prompt diagnosis and appropriate treatment.<sup>2</sup> The most important differential diagnosis is mechanical obstruction of the colon. Neither nausea nor vomiting is noted in the majority of patients with pseudo-obstruction; however, stool passage or flatus is sometimes reported.<sup>6</sup> In the present case, massive distension with significant abdominal



**Fig. 1.** Plain abdominal X-ray before treatment.



**Fig. 2.** Plain abdominal X-ray 3 days after laparotomy.

pain and vomiting were noted. CT scan showed a dilated colon with collapsed sigmoid colon. Exploratory laparotomy was performed due to failure of conservative treatment.

The pathogenesis of ACPO is not clearly understood but is most likely involved in an imbalance between sympathetic and parasympathetic colonic innervation.<sup>7</sup> These two systems act on the smooth muscles of the bowel, maintaining a balance, which promotes normal bowel function.<sup>7</sup> The signs and symptoms resemble those of a paralytic ileus. Due to the underlying pathology, temporary neuropraxia of the sacral parasympathetic nerves S2-4 was suggested.<sup>7,8</sup> These nerves pass through the inferior hypogastric plexus in close proximity to the cervix, vagina, and broad ligaments before terminating to supply the left colon and may be injured during surgery or trauma in this area.<sup>9</sup> Although the pathogenesis is multifactorial, this may explain the cause of ACPO in the obstetric and gynecological settings. ACPO diagnosis after vaginal or forceps delivery, cesarean hysterectomy, and preterm labor have been reported. In healthy women of childbearing age, cesarean section is the most common operative procedure associated with this syndrome. Most reported cases have abdominal pain (80%), mimicking a mechanical large bowel obstruction. The most typical finding (90-100%) is progressive abdominal distension.<sup>7,10,14</sup> Our case presented as diffuse abdominal distention and abdominal pain following cesarean section. She received conservative treatment 10 times at the local hospital and was transferred to our hospital due to the failure of conservative treatment for the tenth attack.

Plain abdominal radiography is the most important diagnostic tool for imaging of large bowel dilatation, especially the cecum, with minimal or no distention of the small intestine. Mechanical obstruction can be ruled out using a water-soluble radiographic contrast enema and presence of pneumoperitoneum to confirm bowel perforation.<sup>7</sup> Colonoscopy is feasible to not only differentiate a pseudo-obstruction from a mechanical obstruction but also to offer therapeutic decompression if there are no signs of bowel perforation or ischemia. Colonoscopic decompression for ACPO is considered with good initial successful rate

but recurrence occurs in up to 40% of cases.<sup>11,12</sup> The risk of cecal ischemia and perforation was associated with either rapid cecal dilatation or a cecal diameter of > 11-13 cm.<sup>2,10</sup>

In general, initial treatment of cecal dilatation of < 10-cm diameter includes conservative treatments, such as restriction of oral intake, nasogastric decompression, rectal tube placement, correction of fluid and electrolyte imbalance, and treatment of the underlying illness.<sup>2,7</sup> A variety of pharmacological agents have been tried for active reversal of ACPO; however, neostigmine is the only one that has provided consistent and positive results.<sup>2</sup> Neostigmine is contraindicated for patients with a heart rate < 60 beats per minute, systolic blood pressure < 90 mmHg, active bronchospasm, and signs of bowel perforation.<sup>13</sup> Surgery is then indicated if conservative treatment is ineffective or if there is evidence of cecal perforation or ischemia. Complications of ACPO include perforation, peritonitis, and shock. The spontaneous perforation rate for ACPO is 3-15%. The mortality rate may be 43-50% and 12-30% in cases with or without perforations, respectively.<sup>2,3</sup>

Although ACPO is a rare complication after cesarean section. In a recent systemic review, cesarean section is indicated as the single most common associated risk factor for postpartum ACPO, and emergency cesarean section is associated with two thirds of these cases.<sup>14</sup> The actual pathogenesis is not mentioned in the review article, but it has been reported that in the postpartum state, declining serum estrogen levels also causes a decrease in parasympathetic tone<sup>15</sup> and interruption of S2 to S4 parasympathetic fibers also induce an atonic distal colon and a functional proximal obstruction.<sup>16</sup>

Exclusion of a mechanical bowel obstruction is important before the treatment of ACPO. Colonic perforation and surgical intervention can be avoided if ACPO is diagnosed and treated early. In our experience, treatment with neostigmine is safe and effective.

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**病例報告****剖腹產術後復發性急性結腸假性阻塞**吳昆霖<sup>1</sup> 李克釗<sup>1</sup> 陳鴻華<sup>1</sup> 歐育哲<sup>2,3</sup><sup>1</sup>高雄長庚紀念醫院 外科部 大腸直腸外科<sup>2</sup>高雄長庚紀念醫院 婦產部<sup>3</sup>嘉義長庚紀念醫院 婦產部

急性結腸假性腸阻塞 (ACPO)，也稱為 Ogilvie 氏症，是一種少見的臨床疾病。其特徵是在沒有機械性阻塞的情況下發生大腸阻塞。ACPO 的處置包括機械減壓和 Neostigmine 的保守治療。當保守治療失敗或懷疑腸缺血和穿孔時，可能需要手術。我們個案報告提出了一名 19 歲的女性患者，在剖腹產後復發 ACPO 並以 Neostigmine 治療成功。

**關鍵詞** 急性結腸假性阻塞、剖腹產、Ogilvie 氏症、Neostigmine。