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GYNAECOLOGY
Case Report

Ogilvie's Syndrome: A Caesarean Section Complication (A Two Cases Report and Review of the Literature)

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Received: January 10, 2015; **Published:** January 14, 2015

Abstract

The Acute colonic pseudo-obstruction is an unusual postsurgical complication with significant mortality. This disease, also referred to as Ogilvie's syndrome, is characterized by acute and massive colon distension without mechanical obstruction. This syndrome is serious because of the risk of caecal rupture or ischemia leading to death. Early detection and prompt appropriate management are critical to avoid perforation and minimizing morbidity and mortality.

We report two cases of Ogilvie's syndrome following a cesarean section and medically treated. Etiologic factors, pathophysiology, clinical presentation, diagnostic and treatment are discussed referring to the literature.

Keywords: *Ogilvie's syndrome; Acute colonic pseudo-obstruction; Cesarean section; Pregnancy*

Introduction

The Ogilvie's syndrome or the acute colonic pseudo-obstruction (ACPO) is defined by a major colonic distension without an organic obstacle (intrinsic or extrinsic to intestinal wall) [1]. It is a rare disease and it is often seen in post operative conditions. As for women, the caesarian section is the most frequent surgical intervention associated to the ACPO [2]. The mortality rate associated to this syndrome varies from 15 to 31% [2,3] and can reach up to 45% in the case of caecal perforation [3]. Therefore, the ACPO is considered as an emergency and should be diagnosed and managed promptly in a way to avoid colonic perforation and reduce the morbidity and mortality rate in this illness [4].

Case N°1

Mrs S., 23 years old, nullipara and primigravida, without pathologic history came presented to our ward for delivery at full term (40 weeks of amenorrhea and 4 days). The physical examination at the admission showed a normal hemodynamic state, a fundal height of 34 centimeters, a 3 centimeters cervix dilatation and 80% effacement. During labor, a deceleration of the fetal heart frequency was noticed, followed by a progressive bradycardia resulting in an acute fetal sufferance, indicating an emergency caesarian section. The latter was performed under general anesthesia and gave birth to a baby boy weighing 3.2 kilograms. This caesarian section was hemorrhagic and hard to manage due to the rupture of posterior uterine varices belonging to utero-sacral ligament.

Forty eight hours after the operation, the parturient developed an important abdominal distension, associated with nausea, vomiting and stop of intestinal transit. No peritoneal irritation signs were found. An up-right plain X-ray of the abdomen showed a diffuse colonic dilatation with no air fluid levels (Figure 1)

This colonic obstruction was medically managed in association with a nil peros diet, volume and electrolytes resuscitation and nasogastric tube administration. The evolution showed the persistence of the abdominal distension, the onset of an increasing abdominal pain which led to the administration of erythtromycin (2g/24h) followed by the administration of neostigmine by IV route at a dose of 2.5 mg while monitoring the heart frequency. Laboratory evaluation was performed and showed no electrolytes abnormalities. Despite this medical management, abdominal meteorism persisted and the patient showed asthenia leading to perform a CT scan of the abdomen. Images showed a massive dilatation of the right and transverse colon and the absence of any intra-colic obstacle, volvulus or an intra abdominal foreign body (Figure 2). These findings correspond to the diagnosis of Ogilivie's syndrome authorizing an exsufflation of colonoscopy after 48 hours from the onset of the symptoms. The patient progressively recovered a normal intestinal transit in the 12 hours following colonoscopy, and regular external patient follow up examination revealed the absence of recurrence of colonic obstruction.

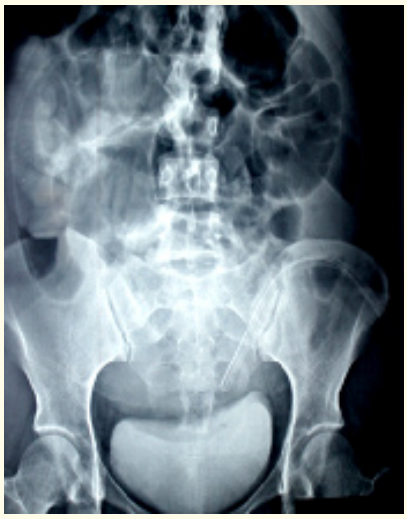

Figure 1*: Radiography of abdomen without preparation: Important and overall colic dilation without hydroaeric level.*

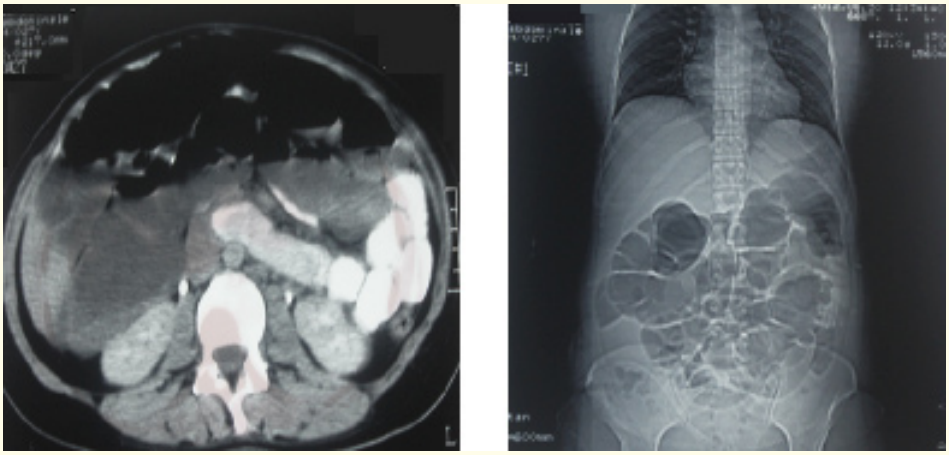

Figure 2*: Abdominal scan: important digestive distension without mechanical obstacle.*

Case N°2

Mrs. W., 38 years old, a forth-time pregnant, without medical history and giving birth three times with natural vaginal delivery was directed to our ward by her physician at 39 weeks of pregnancy after the discovery of an utero fetal death. The physical examination revealed a patient in good health, a fundal height of 33 centimeters, an obliterated cervix, no uterine contractions and the absence of fetal heart beat sounds. The ultrasound exam confirmed the in-utero death, a cephalic presentation and an oligoamnios.

The laboratory tests showed no hemostatic disorders. It was decided to make a natural vaginal delivery and the cervix was matured by Prepidil® (dinoprostone) gel. Labor started spontaneously 6 hours after cervix maturation, she was marked by a failure to deliver indicating a caesarean section. A dead macerated new born boy was extracted, weighing 3.6 kg and a complete artificial delivery was performed. Thirty six hours after surgery, the patient developed an important abdominal distension, vomiting, nausea, fever (38°C) and a diffuse abdominal pain without defense. Plain abdominal X-ray exams showed colectasia on the right and transverse colon (Figure 3).

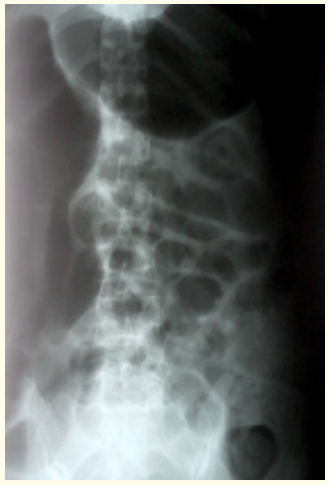

Figure 3*: Radiography of abdomen without preparation in standing position: important colectasia of ascending and transverse colon with distension of the small intestine, without hydroaeric level.*

Laboratory tests did not show abnormalities (correct renal function and correct blood electrolytes). It was decided to treat this colonic obstruction medically; a nasogastric tube was inserted, fluid resuscitation and administration of glycerin suppository twice a day. After 24h, no improvement in the physical examination was noticed and it was decided to administrate a neostigmine by slow IV route at a dose of 2.5 mg associated to a close pulse monitoring. Seventy four hours after surgery, the patient developed an abdominal contracture, a 39°C fever and collapse. The patient was promptly directed to the intensive care unit were she deceased 40 minutes after arrival. A forensic autopsy was performed and revealed a fecal peritonitis due to caecal perforation due to sphacelous right colon. No intrinsic or extrinsic obstacle was found in the rest of the colon.

Discussion

The Ogilvie syndrome (OS) generally occurs after a trauma or after an abdominal or pelvic surgery [4]. For women, caesarian section is the most frequent surgery associated to OS. Nevertheless, this illness was also encountered after a series of child birth by vaginal delivery [4]. Both cases described in our report occurred after caesarian sections.

The physiopathology of the OS remains uncertain. Multifactorial etiology is wildly admitted by a lot of studies [4,5]. The most admitted theory is the association of a malfunction of the autonomous nervous system of the colon to ischemic phenomena resulting from a surgery [1,6]. An inhibition of the parasympathic innervation of the left colon might exist and is associated to the preservation of the right colon's innervations. This creates a difference in the innervations of two territories of the colon, inhibiting peristaltism in the left colon and creating therefore a functional obstacle between the two colic territories. As a result of this disturbance, the right colon expands and parietal hyper pressure occurs resulting in capillary circulation interruption. This results to ischemia, then necrosis and ultimately perforation. The perforation occurs preferentially in the caecum, portion of the colon which is the most expanded and with highest parietal pressure. This colonic parietal ischemia also affects the autonomous innervation of the colon creating a vicious circle that could only be ruptured by decompression [7,8].

The traumatic hypothesis which can lead to the appearance of an OS is explained by the injury of the sacral parasypmathic innervation roots of the right colon. These nervous roots are proximate to the uterus cervix, to the vagina and to the broad ligament and can be injured after trauma, vaginal delivery, pelvic surgery or after caesarian section, leading to the atony of the right colon. This theory can explain the occurrence of an OS while managing gynecologic or obstetrical pathologies.

The typical clinical symptomatology is a distal intestinal obstruction with a progressive onset that occurs during the 72 hours after surgery. Nevertheless, the onset can be fast or delayed up to 7 days [2-4]. In our two patients, the OS occurred in 36 and 48 hours postpartum.

Physical examination finds a distension of the abdomen with increased bowel sounds [2]. In the absence of necrosis or perforation, the palpation of the abdomen does not reveal tenderness and the general condition of the patient is good. The block of intestinal transit is present in half of the cases while nausea and vomiting are inconstant. Caecal perforation is suspected when we have the appearance of a pain located in the right iliac region or the onset of fever [4]. In our study, the clinical presentation was complete as we noticed in both cases abdominal distension, nausea, vomiting and the block of intestinal transit.

A differential diagnosis of the OS can be made with a paralytic ileus. The latter has a prompt onset compared to OS. The bowel sounds are absent in paralytic ileus but are pronounced in OS. The bowel and flatus movement are absent during paralytic ileus but can be replaced by diarrhea during OS [5].

Laboratory findings are not specific for the diagnosis of OS. The main disturbances that can be noticed are an elevated white blood cell count (hyperleucocytosis) and electrolytic imbalance. Hyperleucocytosis is found in 27% of non complicated cases but is found in 100% in case of caecal perforation [4].

Medical imaging is a key investigation for the diagnosis of OS. The plain X-ray of the abdomen should be prescribed in first intention. This radiography shows a globally or partially dilated colon, which is always dominant in the caecum. In 30% of the cases, we notice a small bowel dilatation. Air fluid levels are inconstant [2]. In our study, both cases showed colon and small bowel distension. None had air fluid levels. Caecal perforation can be diagnosed by CT scan with contrast media injection. The CT scan can also help for differential diagnosis such as sigmoid volvulus, caecal volvulus, organic obstacle (tumor, fecaloma,…) or peritonitis [4]. In our study, only the first patient had a CT exam, which helped to establish the diagnosis of OS (absence of a mechanical obstacle) and eliminated a complication (caecal perforation).

The OS is a diagnostic and a therapeutic emergency. The guidelines for treatment depend on the general state of the patient, the size of the caecum in imagery and the presence or not of a caecal perforation. The main goal of the treatment is to reduce as quickly as possible the size of the caecum in the aim to avoid perforation. Studies have shown that the mortality rate is multiplied by 5 when decompression is made in the seventh day rather than the four first days [4].

In the absence of perforation, the first intention treatment is conservative. This symptomatic treatment should be undergone in a surgical environment, with a daily clinical and radiological supervision. In 2012, the American Society for Gastro-intestinal Endoscopy (ASGE) established the guidelines for the treatment of OS which consists of a nil peros diet, the insertion of a nasogastric tube, correction of electrolyte disturbances, and insertion of a rectal tube and suppression of colotoxic drugs. Changing the patient's position is also recommended since it stimulates intestinal transit.

The criteria of success of this treatment are based on the regression of abdominal distension, abundant emission of flatus and stool and downsizing of the caecal diameter in X-ray imaging [11]. For both our patients, initial treatment was based on a nil peros diet, nasogastric tube insertion and correction of electrolyte disorders.

Para sympathomimetics, such as neostigmine, are considered to be the treatment of reference after 24 hours of symptomatic treatment and in the absence of contraindications. Nevertheless, these drugs should not delay endoscopic decompression or surgical intervention. Neostigmine is used in IV route, with slow administration at a dose of 2 to 2.5 mg. However, in 10% of the cases, side effects are observed. These can be minor such as hypersalivation, abdominal cramp, and nausea and vomiting. The side effects of neostigmine can also be major such as bronchoconstriction, bradycardia and arterial hypotension imposing close monitoring of heart beat rate, blood pressure and proximity of atropine. In our study, both patients neostigmine was administrated by slow IV route and no side effects were observed. Contraindications of neostigmine are dominated by mechanical intestinal obstruction, colic perforation, mechanical urinary obstruction, asthma, active bronchospasm and bradycardia [4]. None of our patients had neostigmine's contraindication.

Endoscopic decompression can be useful for diagnosis and treatment of OS. It is often indicated when caecal diameter exceeds 9 or 12 centimeters or after failing of a 48h medical treatment in the absence of perforation. It is an efficient technique with a success rate raging from 61 to 100%. This endoscopy establishes the integrity of the colonic wall, the vacuity of the lumen and the state of the mucosa. This endoscopy is known to be a difficult procedure in OS and should be carried out by experimented physicians. Air insufflation should be minimized during endoscopy in a way to avoid perforation, which may occur in 5% of the cases [11].

Surgical management of OS should be performed after the failure of the medical treatment and in the case of signs of necrosis or perforation. In the absence of necrosis or perforation, the caecum or the transverse colon can be exteriorized (cecostomy). In case of necrosis or perforation, segmental or subtotal colectomy should be performed, and in the majority of cases, without primary anastomosis.

Conclusion

The Ogilvie's Syndrome is a rare complication after a ceasarian section but potentially dangerous due to the risk of caecal necrosis and perforation. The diagnosis is based on the presence of an intestinal obstruction associated with an abdominal pain and colic distension on plain X-rays of the abdomen. An early diagnosis is essential to avoid lethal complications and medical treatment should be started promptly. The treatment is initially symptomatic and conservative in the absence of signs of necrosis or perforation. Emergency surgery carried out without delay when a complication is suspected.

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Volume 1 Issue 1 January 2015