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Case Report

Spontaneous Caecal Perforation Five Days After a Caesarean Section, A Case Report & Review of the Literature

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Abstract

Background: *Cases of spontaneous cecal perforation are rarely seen. It is normal to get confused with paralytic ileus or Ogilvie syndrome due to rapidly decreasing concentrations of oestrogens and the anaesthesia drugs administered during surgery and afterwards for pain relief. Colonic perforation cases generally happen in obese patients after bowel edema due to sub acute obstruction.*

Case: *A 34-year-old woman, P1+ with previous caesarean section reported at 2 AM with pain abdomen and bleeding. She was taken up for Caesarean section immediately. It was a complicated and prolonged surgery due to excessive bleeding from the uterus. Postoperatively, the patient developed signs consistent with a paralytic ileus and was initially managed conservatively. CT scan showed no abnormality but patient's condition did not improve. On Post op day-5, she complained of fever and excessive pain abdomen. Laparotomy showed multiple Perforations in caecum & ascending colon with leakage of contents which had led to peritonitis and fever. Resection of perforated cecum and part of ascending colon with loop ileostomy was done. Ileostomy was closed later. She recovered well.*

Conclusion: *Since this is a rare complication, it is difficult to suspect. If patient presents with abdominal distension for more than 24 hrs not responding to conservative treatment,*

Introduction

Caesarean section is associated with an increased risk for bowel obstruction (OR 2.92; CI 2.55–3.34), surgery for bowel obstruction (OR 2.12; CI 1.70–2.65), incisional hernia (OR 2.71; CI 2.46–3.00), surgery for incisional hernia (OR 3.35; CI 2.68–4.18), and abdominal pain (OR 1.41; CI 1.38–1.44).

Overall complications are seen in 6% for elective caesarean to 15% for emergency caesarean.

In Caesarean section, we don't manipulate bowel, hence injuries or complications are uncommon. It is more common to have urinary tract complications. A perforated cecum after a Caesarean section has been described in 20 previous case reports, the first from 1954. Bowel obstruction can be due to either mechanical or functional causes. In case of deterioration, one should not hesitate to perform laparotomy for inspection. Depending upon the condition of the patient, a primary ileo-colic anastomosis or a caecal resection followed by ileostomy can be done.

The most common mechanical etiologies are adhesions (58%), volvulus (24%), and intussusception (5%). Although Ogilvie's syndrome and paralytic ileus are rare, they are the two most common causes of functional bowel obstruction. One of the most severe sequelae of these etiologies is a bowel perforation, with the cecum being the most susceptible. Mortality rates from a cecal perforation range from 30% to 72%.

Case Presentation

A 34-year-old woman, P1+ with previous caesarean section reported at 2 AM with pain abdomen and bleeding. Although she was booked for a VBAC but due to midnight presentation with excessive bleeding (Antepartum hemorrhage), she was taken up for Emergency Caesarean section immediately. Baby girl delivered by vertex, 2 loops of cord were noticed around the neck, baby cried immediately after birth, placenta was removed by Controlled cord traction, IV methergine was given, IV Ceftriaxone was given. Uterus was closed in 2 layers with vicryl no.1. There was excessive left uterine angle bleeding inspite of multiple stitches, hence left uterine artery was ligated. Excessive left cornual bleeding started hence left ovarian artery was also ligated. Abdominal drain was inserted. Abdominal wall was closed in 3 layers. Vagina was mopped. Any active bleeding was ruled out. She was advised to stay nil by mouth for next 4-6 hours.

Series of events after caesarean:

Post Op D-0: Patient comfortable, drain = 300 ml serosanguinous, urine output adequate. Patient complained of gastric discomfort. IV Pantoprazole & ranitidine given.

Post Op D-1: Patient comfortable, good urine output, Drain—100 ml, planned to remove drain next day.

Post Op D-2: Catheter removed, patient mobilising and eating semi-solids, Drain= 200 ml hence not removed, Complete blood count showed leucocytosis (TLC- 21,800).

Post Op D-3: Abdominal distension observed, bowel movements sluggish, Enema given early morning for bowel evacuation. Patient passed stool but continued to have discomfort with sluggish bowel sounds. Ryle's tube inserted in evening to decompress the distension—bilious fluid started draining, abdominal drain was now showing 800-900 ml (Straw coloured) over 24 hrs. Drain fluid was examined in the lab to check the nature of fluid. Pathologist found creatinine and epithelial cells in the fluid hence this raised a high suspicion of urine in the abdomen (Iatrogenic ureteric injury). This report came late night. Her CBC, LFT, RFT, Blood sugar- all blood parameters were within normal limits and consistent with a post operative finding.

Post Op D-4: Patient was reviewed by general surgeon who advised immediate CT abdomen

CT scan was done with contrast urography. Report came back normal except for multiple dilated small bowel loops and fluid in caecum & ascending colon. There was no collection seen in abdomen and the Urinary tract was reported to be intact. This gave us a sense of relief that there is no iatrogenic injury. Its probably just peritonitis causing excessive fluid accumulation coming in the drain although not able to explain the large amount!

Post Op D-5: Early morning at 3:00am, patient complained of severe pain in Rt Iliac fossa with fever and abdominal distension. IV Pacimol, IV Buscopan given and patient immediately shifted to Operation Theatre.

Surgeon & Urologist called in. Cystoscopy was performed by Urologist, he found the urinary tract to be absolutely intact, hence a prophylactic DJ stenting was done bilaterally keeping in mind the large amount of fluid in the abdomen.

After this, a diagnostic Laparoscopy was done by general Surgeon. He found brownish ?billious fluid anterior to uterus which was highly suspicious of bowel perforation. Attendants were immediately prognosticated and a consent was taken for Colostomy if required.

A suspicion of Iatrogenic bowel perforation was high at that time although I as a gynecologist could not recollect a single moment where intestines may have been handled during caesarean.

Immediate exploratory laparotomy was done by Surgeon, whole of small bowel and large bowel were examined including rectum & sigmoid colon and rest of the solid organs.

Finding: Multiple 0.5x0.5 cm (Total 3) perforations with serosal tears seen in Caecum anteriorly, with small perforations in ascending colon as well. Caecum was grossly dilated with localised 100 cc biliopurulent collection in pelvis and Right Iliac Fossa. At that moment, the quality and perfusion of the remaining small bowel and colon was good. We reckoned performing an ileostomy versus a ilio- colic anastomosis. Because of the hemodynamically stable situation and otherwise healthy patient we chose a primary side-to-side isoperistaltic ileo-colic anastomosis without a diverting ileostomy. Right hemicolectomy with ilio-transverse end-to-end anastomosis done with proximal loop iliostomy. Peritoneal lavage done & abdominal drain No. 28 put in pelvis. Colostomy bag applied.

Postoperative period was uneventful, ileostomy stoma care was continued. After 6 weeks, ileostomy closure done.

- Day 5/0 Evening: Patient NBM, stable, Complete blood count showed a TLC of 14,100, Hb of 12.7 gm%. All other parameters like LFT, RFT, Blood sugar were all normal. She was advised to stay nil by mouth for 2-3 days till ileostomy starts working.
- Day 6/1: Patient stable, ileostomy started working, repeat CBC was within normal limits.
- Day 7/2: Ryles tube removed, oral liquid diet allowed, Dressing changed, patient was absolutely stable, just ocassionally mild fever.
- Day 9/4: Foley's catheter removed, Abdominal drain removed, Dressing changed, semisolid diet started.
- Day 10/5: Patient recovered well, Dressing changed, discharged

At the time of discharge she was advised to take semi solid diet, and then switch to solid diet.

Histopathology confirmed distended caecum with signs of fibrinopurulent serositis confirming chemical peritonitis. There were no signs of blowout, volvulus, ischemia, vasculitis, or thromboembolism

After 6 weeks, she was called to close the ileostomy.

Clinical Discussion

Iatrogenic gastro-intestinal injuries during a caesarean section are rare 0.08% . The clinical presentation is diverse and computed topography may not always be very helpful. During pregnancy, diagnosing colonic obstruction clinically can be especially difficult due to the gravid uterus distending the abdomen. Constipation, nausea, and vomiting occur relatively frequently in pregnancy and makes the diagnosis difficult.

The first clinical sign of colonic obstruction is usually abdominal distension due to dilatation of bowel loops without the passage of flatus. If there is a perforation present, the patient may begin to exhibit signs of intra-abdominal sepsis such as fever, hypotension, or tachycardia. An X-ray with erect and supine views of the abdomen is the single most reliable diagnostic study but it is not helpful in post caesarean cases. Similarly presence of free fluid in abdomen is consistent with postop findings after surgery.

To avoid potential morbidity and mortality, the surgeon must consider performing a laparotomy in case of a deteriorating patient when conservative treatment fails.

Why caecum? Caecal perforation occurs because it has the thinnest wall in the colon and the largest diameter. This allows it to expand three times faster than other areas of the colon. There is a competent ileo-caecal valve which allows one way flow of contents preventing retrograde decompression of the cecum and proximal colon. This tension inside causes stretching of the caecal vessels, followed by occlusion, ischemia, and then necrosis. It is reported that the average caecal diameter after a Caesarean section is 6.4 cm, it comes in severe danger of perforation if dilated to more than 9 cm. So far, no iatrogenic perforations (Periprocedural perforations) have been reported.

There are several other bowel related conditions & complications, which have similar signs & symptoms- lets discuss them briefly.

1. Ogilvie syndrome- Acute colonic pseudo-obstruction (ACPO), is a distinct form of colonic dilatation without evidence of underlying mechanical or anatomic cause. Dilatation of the bowel is classically confined to the cecum and ascending colon with transition near the splenic flexure.It may occur with or without perforation (recognizable by an elongated tear of the intestine). It occurs 24–48 hours after surgery and can end in caecal or colonic blowout.Ogilvie's syndrome is specific to the colon. In this condition, bowel sounds are higher pitched and hyperactive. Patients may continue to pass stool. Nausea and vomiting are rare in patients with Ogilvie's syndrome but are part of the natural progression in a paralytic ileus. Ogilvie's syndrome develops gradually over three to five days and takes longer to resolve than a paralytic ileus. In addition to bowel rest with use of a nasogastric tube, other interventions may benefit a patient like- Colonoscopy may help in diagnosis and may decompress the colon to allow for the resolution of the colonic obstruction. In patients treated with colonoscopic decompression, there is a 15% failure rate necessitating repeat colonoscopy or abdominal surgery. In extreme cases, bowel resection is needed even when there is no perforation or extravasation of bowel contents.

2. Postoperative ileus- is an expected and a very commonly seen temporary impairment of gastrointestinal motility that follows abdominal surgery. There is a disruption in the normal coordinated movement of the small and large intestines, which results in failure of peristalsis of intestinal contents. The term paralytic ileus is used when the impairment lasts beyond the expected postoperative time for that particular surgery. It is often rapid in onset, within one to two days of surgery, and may progress to complete cessation of gut motor function. Signs and symptoms include abdominal distension, abdominal tenderness, cessation of the passage of stool or flatus, nausea, vomiting, and absent bowel sounds. A paralytic ileus often resolves after stopping oral intake and reverting to parenteral fluid replacement with or without nutrition. A nasogastric tube may be used to allow for decompression and removal of upper gastric contents and air to allow the gut to recover its normal function. Potassium infusion also helps in retaining the bowel function. Ambulation has also been shown to help restore normal gastrointestinal motility.

Hence we should follow these steps in such kind of patients—

a. Abdominal X Ray if distension and absence of bowel sounds persist for 48 hours.

b. Try conservative management if mild symptoms.

c. However, if symptoms do not subside and if colonic dilatation is of 9–12 cm, a decompression procedure such as insertion of a nasogastric tube or a colonoscopy should be carried out. If there is uncertainty about whether there is a perforated bowel, a CT scan may be done to help to establish the diagnosis.

d. If there are any signs of imminent perforation or there are obvious signs of bowel perforation or sepsis, the patient should undergo an emergency laparotomy in order to prevent intra-abdominal sepsis from leakage of bowel contents.

Conclusion

Colonic obstruction is characterized by a clinical picture suggestive of a mechanical bowel obstruction. It's incidence during pregnancy varies from 0.001% to 0.2%.

Caecal perforation must be considered as complication after a caesarean section. An ileocecal resection is necessary in this situation. This case report shows that a primary anastomosis is a possible option in a healthy patient that is hemodynamically stable during the operation.In this healthy patient it was possible to perform an ileocolic anastomosis, the decision was based on the general condition and the hemodynamic stability during the operation. This case report is noteworthy due to the unusual complication, and successful surgical outcome that is not commonly seen. In case of an unhealthy or hemodynamic unstable patient, the safest option is a temporary ileostomy.

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