Caecal Volvulus in Pregnancy: Is Delay in Diagnosis Avoidable?

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Intestinal volvulus is not an uncommon cause of obstruction in pregnancy. Diagnosis is often delayed due to poor knowledge of the condition and a hesitation to use abdominal X-rays in a pregnant patient. Here, two cases of caecal volvulus in pregnancy are reported. Proper diagnosis and early treatment of the condition is emphasized.


Key Words: volvulus, obstruction

Introduction

Volvulus of the caecum is an axial twisting or folding of the bowel on its mesentery resulting in acute intestinal obstruction.1 Its incidence during pregnancy ranges between 1/2,500 and 1/3,500 deliveries and it is the second most common cause of mechanical obstruction.2 Caecal volvulus presents as mild intermittent abdominal cramps, nausea, vomiting and constipation. These symptoms are usually attributed to the normal discomforts of pregnancy by the patient as well as the attending clinician, resulting in delayed diagnosis. In such circumstances, a simple mechanical obstruction of the viable bowel can become a serious case of volvulus with gangrene and possible peritonitis and shock, which could eventually lead to loss of both fetus and mother. This is a report of two pregnant patients with a similar history of delayed diagnosis, resulting in gangrene of the gut. One patient was saved and the other died. These brief case summaries are reported to highlight the consequences of delay in diagnosis of intestinal obstruction in pregnancy.

Case reports

Case 1
A 21-year-old patient at 34 weeks' gestation was admitted to the emergency surgical ward with complaints of pain, occasional vomiting and distension of the abdomen with non-passage of flatus and stools for 2 days. She had tachycardia and abdominal distension with no bowel sounds but normal fetal heart sounds. The rectum was found to be empty on rectal examination. The patient’s haematological and biochemical profiles were within normal limits. Skiagram revealed a single prominent large air-fluid level in the upper abdomen with absent gas shadows in the large gut (Figure). She was treated conservatively. Next day, she developed peritonitis and was taken for emergency surgery.

On exploration, there was a grossly distended, gangrenous caecum and ascending colon displaced to the left upper quadrant. The gangrenous gut was resected with ileotransverse anastomosis. The patient had an uneventful postoperative stay and delivered a healthy infant weighing 2.4 kg at full term.
Case 2
A 34-year-old multigravid female at 32 weeks of gestation presented with severe pain in the abdomen for 4 days and constipation with nausea and vomiting. Abdominal examination revealed a silent abdomen with guarding. Haematological and biochemical profiles were in the normal range except for a raised urea level and metabolic acidosis. Abdominal roentgenography revealed a dilated small gut with no gas in the large gut and free intraperitoneal gas. The patient underwent emergency exploration. The caecum, ascending colon and a small segment of the terminal ileum were distended and gangrenous with perforations in the caecal wall. After resection of the gangrenous gut, ileostomy was performed. The patient did not show clinical improvement and expired on the third postoperative day.

Discussion
Caecal volvulus is an important cause of intestinal obstruction in pregnancy and is associated with maternal and fetal morbidity and mortality. The incidence of caecal volvulus increases with the duration of gestation and is greatest at times of rapid uterine size changes, especially from 16 to 20 weeks, when the uterus becomes an intra-abdominal organ, from 32 to 36 weeks, as the fetus enters the pelvis, and in the puerperium, when uterine size changes rapidly again.

The diagnosis of this condition is often delayed, as was seen in the cases presented here, and is well illustrated in the literature (Table). This delay is because the signs and symptoms of intestinal obstruction are mistaken for hyperemesis, placental abruption or ruptured uterus, and because physicians avoid radiological study due to fears about fetal safety. The delay in diagnosis of caecal volvulus is avoidable if a high index of suspicion is maintained, along with timely roentgenography of the abdomen. The diagnosis of caecal volvulus can be made with abdominal plain X-ray (95% sensitivity). A characteristic coffee-bean deformity may be seen directed towards the left upper quadrant. The fetal risk from one or two exposures is minimal because the total dose in three abdominal films is 182 mrad, which is a small dose and unlikely to cause clinical problems. Moreover, because of the significant maternal and fetal mortality associated with undiagnosed intestinal obstruction in pregnant patients, the potential benefit of the X-rays outweighs the risk from radiation exposure. Contrast studies and colonoscopy are not favoured for the diagnosis of caecal volvulus.

Surgical treatment of caecal volvulus consists of untwisting the bowel, decompressing the distended segments, removing devitalized tissue and preventing recurrence.

Table. Summary of cases of caecal volvulus

<table>
<thead>
<tr>
<th>Authors</th>
<th>Age (yr)</th>
<th>Gestation (wk)</th>
<th>Surgery performed</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lopez Carral et al</td>
<td>25</td>
<td>39</td>
<td>Right hemicolecotomy</td>
<td>Good</td>
</tr>
<tr>
<td>Hamlin and Palermino</td>
<td>24</td>
<td>Postpartum</td>
<td>De-rotation of bowel with caecostomy</td>
<td>Good</td>
</tr>
<tr>
<td>Milne and Johnstone</td>
<td>30</td>
<td>37</td>
<td>Right hemicolecotomy</td>
<td>Good</td>
</tr>
<tr>
<td>Montes and Wolf</td>
<td>31</td>
<td>14</td>
<td>Surgical resection</td>
<td>Good</td>
</tr>
<tr>
<td>John et al</td>
<td>23</td>
<td>24</td>
<td>Right hemicolecotomy</td>
<td>Good</td>
</tr>
</tbody>
</table>
The surgical techniques described for caecal volvulus are caecostomy, caecopexy, resection with ileostomy and resection with primary anastomosis. Laparoscopic caecopexy for primary intermittent caecal volvulus may be an alternative to laparotomy in selected cases but is not indicated in the emergency situation. The caecopexy technique has low rates of complication and recurrence rates of 0–8%. However, resection is usually favoured for all cases of caecal volvulus in which caecopexy is technically difficult. Surgical resection eliminates the possibility of recurrence and usually results in low morbidity and mortality. As pregnancy results in marked displacement of the caecum, which may predispose to relapse of the volvulus, resection is the best procedure to avoid recurrence.

References