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Cecal volvulus during pregnancy. Case report

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SUMMARY: **Cecal volvulus during pregnancy. Case report.**

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Introduction. *Acute intestinal obstruction in pregnancy is a rare, but life-threatening complication associated with high fetal and maternal mortality.*

Case report. *A 20-year old gravida presented with a 24 hour history of several episodes of vomiting, complete constipation and severe crampy abdominal pain. The patient was admitted with the diagnosis of acute abdomen associated with septic shock. On examination echography showed distended intestinal loops and presence of free peritoneal fluid. Abdominal X-ray with shielding of the fetus revealed colonic air-fluid levels. The obstetrician consult diagnosed dead fetus in utero and was decided to operate immediately. On laparotomy was found complete cecal volvulus with gangrene of cecum, part of ascending colon and terminal ileum. A right hemicolectomy was performed with side to side ileotransverse anastomosis. Afterwards a lower segment cesarean section was made and a stillborn fetus was delivered. The patient made an uneventful recovery and was discharged on 9th postoperative day.*

Conclusion. *Cecal volvulus during pregnancy is a rare, but serious surgical problem. Correct diagnosis may be difficult until exploratory laparotomy is performed. Undue delay in diagnosis and surgical treatment can increase the maternal and fetal mortality.*

RIASSUNTO: **Volvolo del cieco in gravidanza. Caso clinico.**

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Introduzione. *L'ostruzione intestinale acuta è una rara, ma molto pericolosa complicazione in gravidanza, associata a elevata mortalità fetale e materna.*

Caso clinico. *Una paziente ventenne gravida presentava da 24 ore ripetuti episodi di vomito, costipazione completa e dolori colici addominali. La paziente è ricoverata con diagnosi di addome acuto associato a shock settico. Durante l'esame diagnostico l'ecografia evidenziava anse intestinali distese e la presenza di liquido peritoneale libero. La radiografia diretta dell'addome, con protezione del feto, metteva in evidenza livelli idro-aerei. L'ostetrico chiamato a consulto diagnosticava feto morto in utero. È stata posta indicazione all'intervento chirurgico d'urgenza. Alla laparotomia è stato trovato un volvolo ciecale, con gangrena del cieco e di parte del colon ascendente e dell'ileo terminale. È stata pertanto eseguita una emicolectomia destra con anastomosi ileotrasversaria latero-laterale. Si è proceduto inoltre a taglio cesareo sul segmento inferiore estraendo il feto morto. La paziente ha avuto un decorso postoperatorio regolari ed è stata dimessa in nona giornata senza complicazioni.*

Conclusioni. *Il volvolo del cieco in gravidanza è una complicanza chirurgica rara, ma grave. La diagnosi può essere difficile e spesso solo la laparotomia la consente. Ritardi eccessivi nella diagnosi e nel trattamento chirurgico possono aumentare la mortalità materno-fetale.*

KEY WORDS: Cecum - Volvulus - Pregnancy - Bowel obstruction.
Cieco - Volvolo - Gravidanza - Ostruzione intestinale.

Introduction

Acute intestinal obstruction during pregnancy is a rare, but dangerous complication associated with a high maternal mortality in the range from 6–20% (1, 2). Cecal volvulus in pregnancy is a relatively common cause of intestinal obstruction, occurring in 25–44% of cases (3, 4).

Despite advancement in medical technology, preoperative diagnosis is still inaccurate. Diagnosis is often delayed due to poor knowledge of the condition and a hesitation to use abdominal X-ray in a pregnant patient (4, 5). Early diagnosis and immediate laparotomy are essential to avoid the high morbidity and mortality associated with cecal volvulus in pregnancy (6).

We report a case of a 20-year old gravida, at 27 weeks of gestation, complicated with cecal volvulus. Typical

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symptoms and signs are the same as in non-pregnant women, but in cases of gangrenous bowel the clinical presentation is of extreme gravity and immediate resection, after successful resuscitation, is mandatory (4, 7).

Cecal volvulus is an important entity to consider in any pregnant patient with severe abdominal pain and shock (8). It demands from the general surgeon and obstetrician a high index of diagnostic suspicion; prompt diagnosis and immediate resuscitation and surgical treatment (9).

Case report

A 20-year old gravida 1 at 27 weeks of pregnancy was admitted to Surgical Emergency Service UHC "Mother Theresa" with the diagnosis of acute abdomen. She presented with history of several episodes of vomiting, complete constipation and severe crampy abdominal pain since 24 hours.

On physical examination the patient looked extremely ill: pulse rate was 168 b/min; blood pressure was 90/60 mmHg; and respiratory rate was 40 resp/min. The abdomen was distended and there was presence of generalized tenderness. Prompt rescuscitation was initiated and a gastric tube was inserted. Her laboratory tests were as follows: WBC 29 000/mm³; RBC 2 890 000/mm³; Hb 8,9 g/dL; Htc 29%; glucose 114mg/dL; amylase 117 U/L, all other tests were normal.

Abdominal ultrasound showed distended intestinal loops (10 cm) and revealed the presence of free peritoneal fluid (Fig. 1).

Direct X-ray with shielding of the fetus revealed signs of intestinal obstruction (Fig. 2).

The obstetrician–gynaecologist consult diagnosed dead fetus *in utero* and jointly was decided to operate immediately. A midline laparotomy was made and 2 litres of necrotic – haemorrhagic fluid were aspirated from the peritoneal cavity, as a consequence of complete (closed loop) cecal volvulus in clockwise direction, with frank gangrene of cecum, part of ascending colon and terminal ileum (Fig. 3).

In this extreme situation, a right hemicolectomy was immediately performed with side to side ileo-transverse anastomosis (Fig. 4).

Afterwards, a lower segment cesarean section was made and a "stillborn" fetus was delivered (dead fetus *in utero*). After complete hemostasis and peritoneal lavage, drains were placed in Morrison cavity, left subphrenic space and Douglas pouch. The patient received 1 unit of cross-matched blood intraoperatively. Postoperatively, the patient was treated in ICU for 4 days. WBC returned normal on 2-nd postoperative day. The patient made an uneventful recovery and was discharged from hospital on 9-th postoperative day.

Discussion

The incidence of cecal volvulus is 25–44% (of all causes of mechanical obstruction during pregnancy) (3, 4), increases with duration of gestation and is greatest at time of rapid uterine size changes. Most commonly, obstruction occurs in the third trimester, when maternal mortality can be as high as 10 – 20% (4, 6). As the uterus enlarges during pregnancy, it raises the cecum out of pelvis, increasing the incidence of the cecal rotation around a fixed point (4, 10). The degree of twisting of the bowel can vary

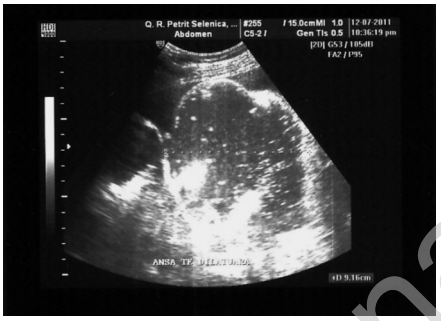

Fig. 1 - Abdominal ultrasound shows distended intestinal loops.

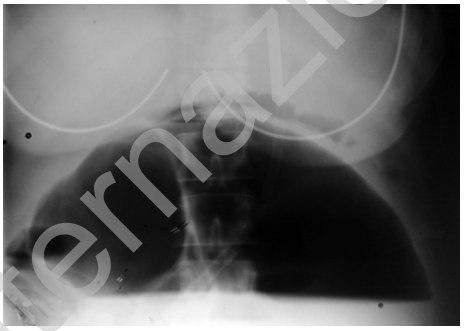

Fig. 2 - X-ray with shielding shows colonic air-fluid level.

Fig. 3 - Cecal volvulus with gangrene of the bowel.

Fig. 4 - Specimen.

from 90 – 360 degrees or more and can occur in an clockwise or anticlockwise direction (9, 11). Complete rotation will result in a closed loop obstruction, leading to trapping of intestinal contents within the loop and compromise of the vascular supply, resulting in necrosis (12). In later stages, the distended bowel together with extravasated fluid can cause abdominal compartment syndrome and severe shock (9, 11, 12). The abdominal distention can also lead to severe compromise in respiratory function.

The clinical presentation of cecal volvulus during pregnancy is difficult to asess. The uterus, cervix and adnexa share the same visceral innervation as the lower ileum, cecum and following segments of colon and distinguishing between pain of gynecologic and gastrointestinal origin is very difficult (4, 13). Severe crampy abdominal pain, complete constipation and frequent vomiting are the typical symptoms of cecal volvulus in pregnancy (14). The diagnosis of cecal volvulus can be made with abdominal plain X-ray with 95% sensitivity. Abdominal ultrasound is heplful in diagnosis, but with lesser sensitivity. Limited use of x-rays with shielding of the fetus is of minimal risk and useful for early diagnosis of cecal volvulus (5, 8, 14, 15). Because the cecum is mobile, the dilated cecal loop may actually appear anywhere in the abdomen (7, 15). The presence of air – fluid levels is diagnostic, as in nonpregnant women (16). The significant maternal and fetal mortality associated with bowel obstruction outweight the potential risk of fetal radiation exposure (4).

The therapeutic algorhythm is the same for pregnant and nonpregnant women. Unsuccessful medical treatment, or the appearance of septic shock in association with severe crampy abdominal pain and tenderness warrant immediate surgical exploration. The presence of gangrenous bowel makes prompt resection mandatory (4, 6-9, 14, 17). The surgical techniques described for cecal volvulus are cecostomy, cecopexy, resection with ileostomy and resection with primary anastomosis (4, 15). Resection eliminates the possibility of recurrence, usually resulting in low morbidity and mortality and is always indicated if bowel necrosis is evident (4, 7, 8, 12, 14, 17). Maternal mortality can range from 6-20%. Fetal death following maternal intestinal obstruction is between 20-26% (1, 2, 6, 8, 9, 15).

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