



SPONTANEOUS GASTRIC RUPTURE IN PREGNANT WOMEN IN 36th WEEK OF PREGNANCY

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ABSTRACT

The case of young primigravida pregnant woman with spontaneous gastric rupture in perinatal period was reported. Rapid obstetric intervention during caesarean section made possible the survival of the neonatant. Prompt surgical laparotomy was performed with excision necrosis part of the bottom of stomach. The wall was repaired and it had the positive therapeutic effect. Authors indicate on diagnostic troubles, the way of obstetric and surgical treatment and complications in postoperative course.

Spontaneous gastric rupture is a very rare case, it is associated with high mortality rates in pregnant women and in fetuses (1, 2, 5). It is diagnosed after the delivery or after autopsy. Presented case is the first known to us from available worldwide literature case description in which mother and a child survived.

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INTRODUCTION

Case description

Patient D.K., 23 y.o. prima grivida in 36th week of pregnancy was admitted to Obstetrician and Pregnancy Pathology Ward in Vivoid Specialistic Hospital in Częstochowa because of lasting few hours constant, feeble pain distributed all over the abdomen. On the previous day patient complained about intensive vomiting after consummating heavy meal. After the physical examination data below were observed: Blood pressure: 130/90 mmHg, Heart rate: 100/min, Guarding over the abdomen tens with polished skin over it. Uterus was not tense, hard to access during the examination. Size was appropriate for the age gestational age. Fetus in cephalic presentation. Cervix was dilated - 3 cm. Amniotic fluid was clear. Heart rate of the foetus: 146/min umbilical artery flow PI= 0,7, RI= 0,45, CRP - 13,48, Leucocytosis: 23600 in mm³. After CTG intrauterine asphyxia of the fetus was observed and unidentified surgical pathology in abdomen. Decision about immediate surgery was made and immediate caesarean section was performed.

Horizontal incision above the pubic symphysis was done. After entering the abdominal cavity a odourless gas evaporated. In abdominal cavity big amount of brown fluid with low pH with aliment pieces was found. Bowel surface and momentum had dilated capillaries. Rupture of upper intestinal tract was diagnosed. Fluid from abdominal cavity was suctioned out and fetus was delivered. After the procedure uterus was sutured and drainage into the Douglas pouch was

inserted. Other layers of abdominal cavity were sutured. Team was joined by another surgeon who incised abdomen from the xiphoid process of sternum until the umbilicus. Necrosis of anterior and inferior part of the stomach about 25cm² in size with rupture. Partial resection of the stomach was done in borders of healthy tissue and then plastics of the stomach was performed. Abdominal cavity was flushed with voluminous amount of isotonic NaCl solution and drainage was inserted.

Histopathological examination of the resected section of a stomach confirmed the hemorrhagic necrosis. Bacterial cultures of from the abdominal cavity were clear.

Post surgical care was provided in the Intensive Care Unit. Respirotherapy with oxygen therapy, antibiotic therapy, Anti-shock drugs and antihemorrhagic drugs were given. Protein and clotting factors deficiencies were stabilised (AT III - 47,2%). During the central catheter insertion right sided pneumothorax occurred. Suction drainage was done. During the following days patient had fever up to 38 degree Celsius. Artificial respiration was used. Bowel peristaltic returned in 3rd day after the operation. Patient was unintubated and in 4th post operation day liquid diet was introduced. Since 12th day after the operation fever was stable until 38 degree Celsius. Inflammation of the post operative winds occurred. Bacterial cultures were drawn from the drainage equipment, trachea and Lung pleura and all were negative.

USG of abdomen and small pelvis was repeated few times. Broad spectrum antibiotic therapy was used and local aseptic techniques applied. On 28th post operative day fever was gone

and wounds were clean. Patient in good condition was discharged from the hospital. Gastroscopy performed 3 months after the operation showed no complications. Control gynecological test done on 3rd month and 6th month post operation showed no pathological changes in patients health.

Fetus

Birth weight 2900 g. Born with Apgar score of 3/4/7/8 points. Blood gasometry drawn from the umbilical blood showed pH of 6,88, pCO₂ - 108mmHg, pO₂ - 11mmHg, BE - 15,9 mmol/l, O₂ saturation - 8,3%. After fluid aspiration ventilation with Ambu ventilator was done. Next the newborn was transported into the incubator with additional oxygen. In 49th minute after delivery control blood gasometry was performed and showed pH - 7.306, pCO₂ - 26,1 mmHg, pO₂ 242 mmHg, Br 11,6 mmol/l, O₂ saturation - 99,7%. Twice performed USG of the fontanelles shows no pathologies in the CNS. According to mothers description neuromuscular development of the child is according to the standards.

DISCUSSION

Spontaneous gastric rupture is a rare case during pregnancy. In literature few cases were described. Most common pathogenesis of the rupture is a sudden increase pressure in the stomach lumen caused by the stretch in its walls cause by excessive amount of food. Historic work of Revilliod from 1885 shows big stretch capabilities of a stomach. Spontaneous rupture was observed after ingestion of 4L of liquid. That is why the pathogenesis of spontaneous rupture is connected with the gastric valves.

A hernia of the esophageal diaphragm and elevated diaphragm position, which occurs during advanced pregnancy (1,2), may be a factor disturbing the gastric admission. In advanced pregnancy, the bottom of the uterus presses against the stomach and increases blood pressure. Another factor in the pathogenesis of spontaneous gastric rupture is strong vomiting caused by stomach overfilling with food, splitting by gases after administration of some drugs, nasal tube insertion and even strong cough. In Mallory-Weiss syndrome, vomiting causes longitudinal splits in the gastric mucosa near the stomach antrum, which may penetrate deep into the muscle layer. Vomiting can also lead to a rupture in the end of the esophagus, i.e. Boerhaawe syndrome.

The difference is that the rupture of the esophagus occurs during food vomiting and the rupture of the stomach during vomiting reflexes (7). Despite the fact that the stomach is well supplied with blood, the possibility of arterial ischaemia of the stomach wall cannot be ignored when considering the etiopathogenesis of gastric rupture (7). Inflammatory conditions of gastric mucosa, often unnoticed by patients, may be of significant importance. The last factors quoted in the literature may be traumas, e.g. indirect massage of the heart or hitting the upper abdomen and chest (2,5,6).

In our case, the gastric rupture mechanism may have been caused by the coexistence of several factors. Excessive meal caused increasing nausea and vomiting. A high diaphragm setting intensified the gastric inlet closure. Pressure of the uterus fundus on the stomach increased the pressure inside the stomach and hindered the passage of gastric contents to the duodenum. Frequent inflammation of the gastric mucosa in pregnant women could reduce the strength of its walls. However, based on histopathological findings, we consider

gastric wall haemorrhagic necrosis to be the most probable ischaemic etiology.

Diagnostic difficulties of this rare complication of pregnancy caused that the decision about urgent surgical termination of pregnancy was based on fetal hazard and the proper diagnosis was made only after opening of the abdominal cavity. In all the studies known to us, the authors point out that the diagnosis of gastric rupture was made only during laparotomy. Clinical diagnosis of these cases, especially during pregnancy, is difficult due to little characteristic symptoms confused with pregnancy or perinatal ailments. The tactics preceding surgical intervention by caesarean section allow - by reducing the size of the uterus - free insight into the abdominal cavity and allows for precise supply of the damage (3). In all publications, the authors report numerous, often serious postoperative complications such as acute pancreatitis, coronary thrombosis, aortic dissection aneurysm, severe renal and circulatory failure (2,7). Anti-shock, anti-haemorrhagic, antithrombotic and broad-spectrum antibiotic therapy (1,2,4,7) are required. In our case, all three therapeutic methods were used. The first days after the operation were complicated by peritonitis. The second inflammatory symptoms occurred on the 12th day after the operation because of purulent foci in the peritoneal cavity confirmed by CT examination. These lesions were successfully treated conservatively.

All described cases of spontaneous gastric rupture in pregnant women resulted in fetal death. The authors see the causes of this condition as a significant decrease in maternal and placental flow caused by maternal hypovolaemia and immaturity of the fetus (1,4). In our case, early umbilical cord thrombosis, confirmed by histopathological examination of the umbilical cord, allows to suspect thrombotic etiology of impaired fetal-placental exchange.

The lack of correlation between the extremely low gasometric values of blood taken from the umbilical cord vessels of the newborn and its satisfactory and rapidly improving condition should be explained. Gasometric tests of arterial blood carried out after 49 min. showed normal results, and further observation of the child's condition did not show any abnormalities.

We believe that the result of the first examination was falsified by acidic abdominal secretion covering the umbilical cord.

CONCLUSIONS

High maternal and foetal mortality rates in this complication indicate that the success of treatment depends on quick implementation of surgical procedures and good cooperation between gynaecologist, surgeon, anaesthesiologist and neonatologist.

Work was done in Regional Hospital in Polczyn - Zdrój based on the patient case in Częstochowa Hospital conducted by one of the authors.

References

- Ae Seon Cha, Michael A.Krew, Todd Tamlyn, Prabhcharan Gill: Gastric rupture associated with pregnancy. *Obstet Gynecol* 2002; 100:1072-4
- Chapuis G., Tabrizian M., Saegesser F.: Ruptures spontanees de l'oesophage et de l'estomac et syndrome de Mallory-Weiss. *Schweiz.med.Wshr.* 100,1060-1066 (1970)

Dunphy E.,Way L.: Current diagnosis and treatment in surgery. PZWL 1980
Hennig G.,Jahn G., Saager A. : Zur Magenrupture unter der Gebur. Zentralblatt fur Gynakologie 1968; 49:1640-1644
Jakubowski S.: „Hydropneumothorax" caused by blockage and perforation of the stomach in post traumatic left sided diaphragm hernia in 32 - year old women in 9th month - Nowiny lekarskie (Doctor's news) 1996;65, 2:158-160

Moore E. i wsp.:Organ injury scaling: extrahepatic biliary, esophagus, stomach, vulva, vagina, uterus(nonpregnant), uterus (pregnant), fallopian tube, ovary. Fournal of trauma: injury, infection and critical care. 1995; 39, 6:1069-71
Wajda Z., Cichecki P., Kwiecifiska B. : Spontaneous rupture of the stomach in 18- year old women - Polski Przegląd Chirurgiczny (Polish Surgery Review).1997;69,11:1212-1216

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