

# Bowel Obstruction on Flange during Pregnancy: A Diagnostic Trap

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**Abstract:** Intestinal obstruction during pregnancy is a rare but potentially serious complication due to a high maternal and fetal mortality rate. The incidence of bowel obstruction in pregnancy reported in the literature ranges from 1 in 66,343 to 1 in 1,500 cases [1-2]. Bridle occlusion is the most frequent cause of intestinal obstruction during pregnancy representing 25 to 44% of cases [3-4]. The delay in diagnosis is related to the lack of specificity of the functional signs and the fear of fetal irradiation by abdominal CT. We report the case of a 38-years-old female patient admitted to the emergency department with an atypical clinico-biological picture revealing a bowel obstruction on flange. The presentation of this observation is an opportunity to discuss the diagnostic and therapeutic modalities of this rare association.

**Keywords:** Occlusion on flange · Pregnancy · Atypical clinical picture

**Introduction:** Bowel obstruction on flange is a rare complication of pregnancy of difficult and late diagnosis at the stage of complication since the clinic is not very specific often camouflaged by a symptomatology which can be related to the pregnancy. We report the case of a 38-years-old patient admitted at 24 weeks of amenorrhea with epigastralgia resistant to symptomatic treatment. The radiological exploration had found a mechanical intestinal occlusion on a flange.

**Case Presentation:** 38 years old, with a history of right ectopic pregnancy surgically treated by salpingectomy 5 years ago, pregnant with a spontaneous twin pregnancy of 24 weeks of amenorrhea and 4 days, was admitted to the emergency room for management of epigastralgia without any notion of cessation of matter or gas. Her history of the disease goes back to one week by the occurrence of epigastralgias put under symptomatic treatment by inhibitor of the proton pump and in front of the persistence of the symptomatology the patient was hospitalized in the private sector where a biological assessment including the lipasemia was carried out coming back normal then the patient was declared leaving under symptomatic treatment, then she was re-consulted in our hospital for the same symptomatology in which the examination found a conscious patient, hemodynamically and respiratory stable, blood pressure correct without edema of the lower limbs, afebrile, with at the obstetrical examination: the fetal heart sounds not perceived by the 02 fetuses and an epigastric sensibility, the obstetrical ultrasound objectified the presence of a monochorionic biamniotic twin pregnancy not evolving with homogeneous placenta and signs of recent death, a blow of abdominal probe showed an enormous gastric stasis from where the installation of a nasogastric probe bringing back 3 liters of purulent secretions, a filling by isotonic saline was carried out in parallel.

In view of this atypical picture, which raised the suspicion of an intestinal obstruction, an injected abdominal scan was performed, showing a bowel obstruction on a flange in the right iliac fossa without any signs of digestive distress (figure1).

The decision of the visceral specialists was to adopt a conservative attitude and to rehydrate the patient well and re-evaluate in 48 hours, an induction by dinoprostone was carried out, delivery by vaginal route of 02 stillborn babies carried out without particularities.

The evolution was marked by the installation of a hypotension with signs of shock from where the decision to carry out a median laparotomy with the exploration: presence of an effusion of great abundance aspirated and multiple adhesions between the small intestine and the abdominal wall, and between the small intestine and the uterus as well as an important distension of the small intestine with very extensive necrosis of the small intestine on the flange between the small intestine and the mesentery, presence also of a necrotic sigmoid adherent to the uterus (figure2). The operative procedure performed by the visceral surgeons consisted in sectioning the flange with extended bowel resection to the cecum and sigmoid resection with realization of a double stoma (figure3,4). As the uterus was slightly atonic, a ligation of the hypogastric tubes was also performed.

During the operation, the patient was put on drugs such as noradrenaline and then transferred after the operation to the intensive care unit, intubated, ventilated and sedated with noradrenaline.

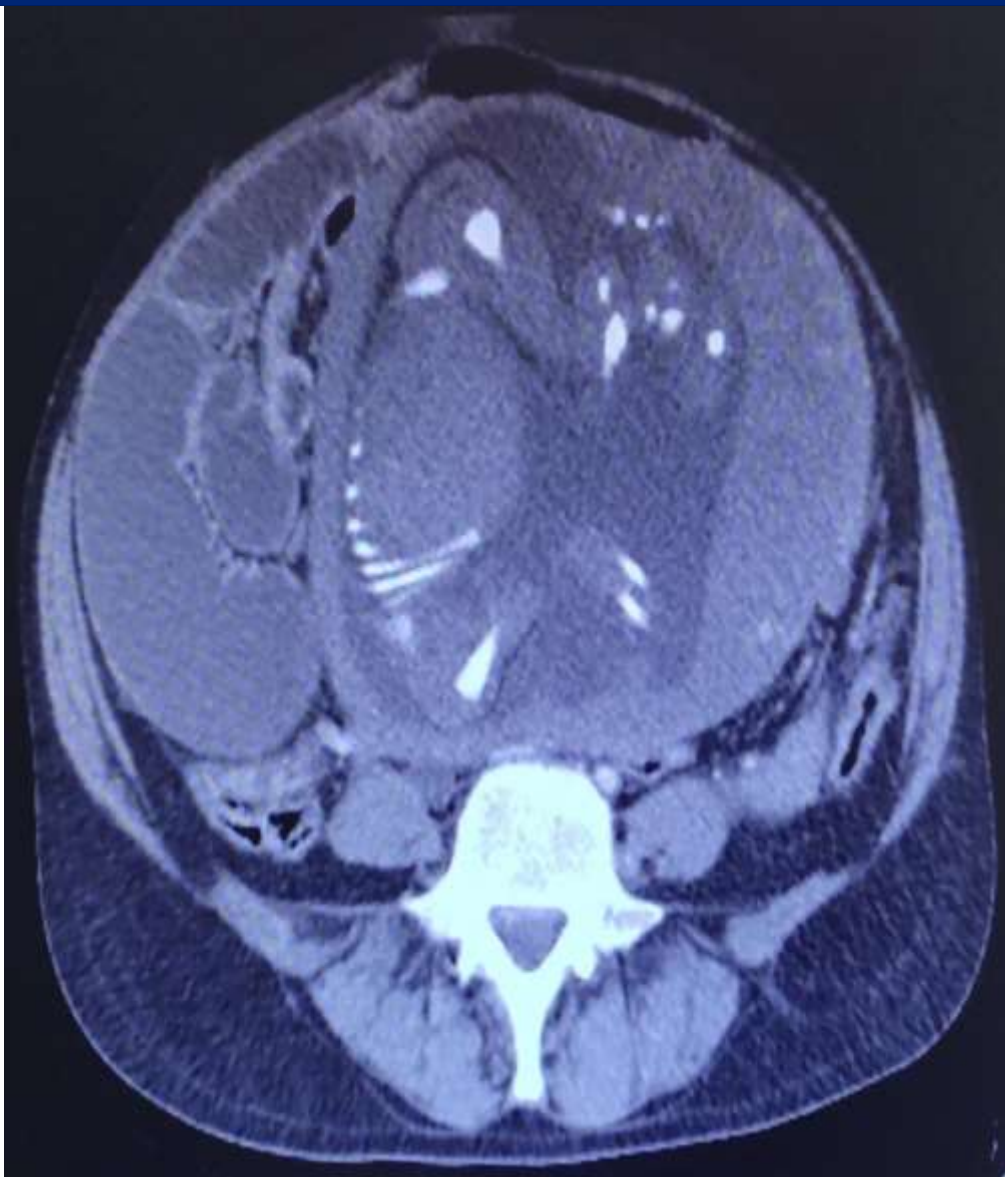
The postoperative follow-up was marked by a stay in the intensive care unit for 15 days, then the patient was transferred to the visceral surgery department for additional management, in particular parenteral nutrition and restoration of the continuity of the 2 stomas.

**Discussion:** Intestinal obstruction during pregnancy is very rare [1,2] with an incidence of 1/1,500 to 1/66,000 pregnancies [3,4]. Approximately 53-59% of intestinal obstructions are due to adhesions or adhesions secondary to previous surgical procedures or episodes of pelvic inflammatory disease [2-4]. During gestation, intestinal obstruction is favored by the decrease in intestinal peristalsis and the increase in habitual constipation due to progesterone impregnation favoring hypotonia of the intestinal smooth

musculature and by topographical modification of the adhesions sequelae of a previous operation following the development of the pregnant uterus [3,5] ; Thus the authors describe three periods of high risk, between 16 and 20 weeks of amenorrhea when the uterus becomes abdominal, around the 36th weeks of amenorrhea when the head descends into the pelvis and in the immediate post-partum period by a sudden decrease in uterine volume [6,7]. Clinical diagnosis is often difficult and delayed because the usual signs of occlusion (pain, distension, vomiting, constipation) are attributed to the sympathetic signs of pregnancy; in addition, the displacement of the abdominal organs as the pregnancy progresses gives atypical localizations of the pain. This shows the importance of clinical examination and careful observation in front of such a symptomatology [1]. Our patient presented with emesis while the cessation of matter and gas was not present. Biological analyses are often inconclusive; Pregnancy is accompanied by a physiological hyper leukocytosis that can vary between 9000 to 12000 due to increased adrenal activity and therefore would be an unreliable indicator in pregnant women [2,3,8]. However, a significant increase in leukocytosis within a few hours should attract attention [9]. In our patient, apart from a hyper leukocytosis and an atypical clinical picture suspecting an acute occlusion, a radiological confirmation was necessary. Abdominal ultrasound is the first-line diagnostic examination in case of suspected intestinal obstruction during pregnancy. It allows to exclude the diagnosis with a sensitivity of 89% and a specificity of 100%. Its safety allows repeated examinations to follow the evolution of the dilatation of the intestinal coxes [6,8]. This evolution allows to evaluate the relevance of conservative treatment and constitutes a determining element for the surgical decision. Ultrasound allows a complete assessment of the abdominal sphere and the pregnancy in search of other pathologies. The combination of informative abdominal ultrasound and clinical evaluation was sufficient to confirm the diagnosis of bowel obstruction. The unprepared abdominal radiograph (sensitivity: 75% and specificity: 53%) is a second choice, especially since the hydro-aerosic levels (HALS) usually sought are only present during the first hours when the intestinal obstruction is established, the aeric side being then filled by intraluminal stasis fluid. However, this imaging remains useful in the general work-up of intestinal obstruction in case of inconclusive ultrasound and the hesitation of clinicians to prescribe this imaging in pregnant women for fear of inducing fetal malformations is unjustified in view of the risk of morbidity and high mortality if the diagnosis is delayed [9]. The major complications resulting from delayed diagnosis are intestinal ischemia and septic shock, with a maternal mortality rate of 6-20% [10]. Nuclear magnetic resonance, if available in the center, can be used for differential diagnosis because of its safety for the fetus beyond the first trimester and the information it can provide [11]. While CT is not recommended during pregnancy, except in exceptional cases when the potential benefit justifies the risk to the fetus and on a case by case basis, in close consultation with the obstetrician and the digestive surgeon, in our case the patient had a terminated twin pregnancy and we had no problem performing the injected abdominal CT.

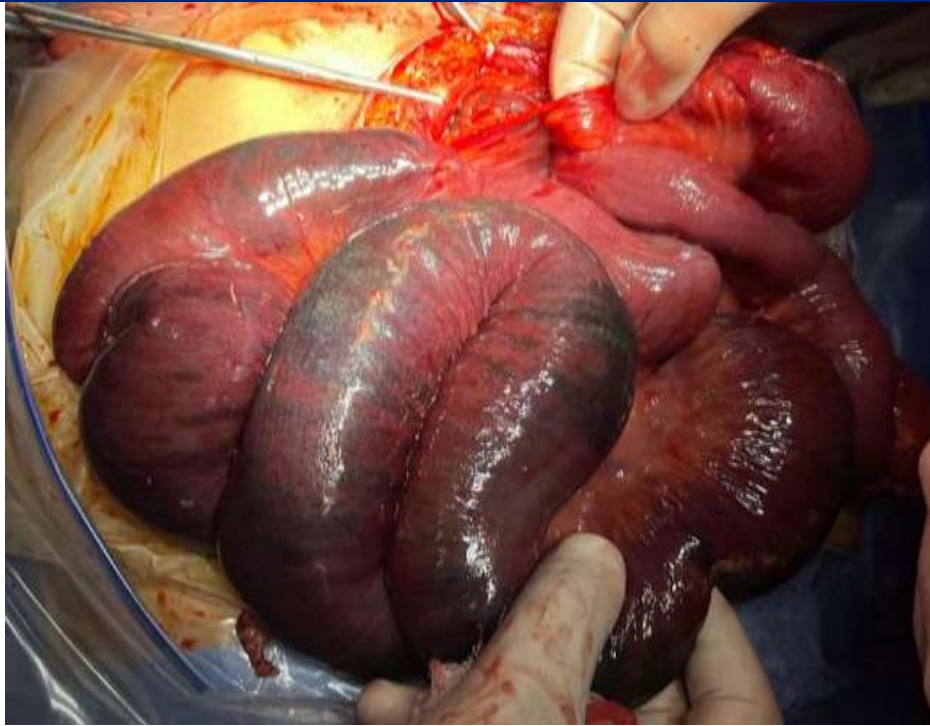
The majority of observations in the literature describe a medical practice aiming to institute conservative treatment in the hope of avoiding surgical treatment. This attitude does not seem appropriate. Pregnancy itself is an additional cause of the obstruction, and medical treatment in isolation most often fails. Surgical intervention is still performed in 89% of cases of intestinal obstruction occurring during pregnancy [3,4,12]. However, by delaying surgical management, this attitude contributes to the increase in maternal and fetal mortality [13]. Our patient had extensive necrosis requiring anastomotic resection probably due in part to the delay in surgery. The basis of treatment of occlusion is surgery at the appropriate time and early regardless of the term of the pregnancy to improve the prognosis and avoid the dreaded complications [14]. The principle of treatment varies according to the gestational age: Up to 26 weeks: laparotomy with removal of the occlusion, continuation of the pregnancy to term if possible; between 26 and 34 weeks : if possible fetal lung maturation followed by cesarean section with midline skin incision completed with surgical treatment of occlusion; between 34 weeks and term: cesarean section with midline skin incision completed with surgical treatment of occlusion; in all cases, laparotomy or cesarean section imperatively within 72 hours. The preoperative preparation of the patients must require a collegial decision including an obstetrician, a resuscitator-anesthetist and a surgeon in order to discuss prophylactic tocolysis, corticosteroid therapy for fetal maturation in the third trimester and the surgical indication on a case by case basis. The maternal-fetal prognosis depends on the rapidity of the diagnosis and the precocity of the treatment; Harer reported a maternal mortality of about 21% with a fetal mortality of 31% [15]. The development of obstetrical surveillance and early surgical management have improved the maternal prognosis with a mortality rate that is now almost zero. Fetal mortality has changed little over time, in the order of 20 to 30%, probably due in large part to prematurity [16]. In our case the patient had consulted at the stage of fetal death in utero.

**Conclusion:** The diagnosis of intestinal obstruction during pregnancy is often difficult and delayed because digestive disorders are often attributed to pregnancy. However, their persistence or their appearance after the first trimester should worry the clinician and prompt him to request the appropriate to ask for the appropriate complementary examinations. Multidisciplinary management and timely surgery is necessary to minimize maternal and fetal morbidity and mortality.



**Figure 1:** CT images in axial sections, passing through the abdominopelvic stage, with injection of iodinated contrast. Individualization of a zone of ileal caliber disparity, responsible for an upstream graft occlusion, without signs of digestive distress, in relation to a flange occlusion





**Figure 2:** Image showing extensive small bowel necrosis



**Figure 3:** image showing the 02 resected operative parts, the small intestine and the sigmoid colon



**Figure 4:** image showing double stoma, sigmoid colon and small intestine

**Conflit d'intérêt**

Les auteurs ne déclarent aucun conflit d'intérêt.

**Figures**

**Figure 1:**

**Figure 2:** Image showing extensive small bowel necrosis

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**Figure 4:** Image showing double stoma, sigmoid colon and small intestine

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