

Case Report

Surgical and medical management of 05 cases of acute intestinal obstruction on pregnancy in university hospital center of Treichville, Côte d'Ivoire

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Received: 26 May 2018

Accepted: 27 June 2018

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ABSTRACT

From January 2003 to December 2017, the authors report five cases of acute intestinal obstruction during pregnancy. Two of them were received in digestive and proctological surgery emergencies. The other three patients were received urgently from the obstetrics and gynecology department. This association is a rare event. Clinical polymorphism delays the therapeutic management. In 1/5 cases only the diagnosis of occlusion on pregnancy was made. In 2/5 of the cases the diagnosis of occlusion was made and that of the pregnancy which at the 1st trimester was unknown. In last 2/5 of cases the pregnancies were at the 3rd trimester, the diagnosis of occlusion during pregnancy was made intraoperatively; Caesarean section being indicated for the fetal in distress on probable urinary tract infection. Authors did not have any maternal-fetal deaths. Through five cases of this association and a review of the literature, authors highlight the diagnostic and therapeutic difficulties and the therapeutic attitudes likely to improve the foeto-maternal prognosis. This fetal prognosis depends essentially on the age of the pregnancy and the speed of the management.

Keywords: Acute intestinal obstruction, Digestive surgery, Fetal-maternal prognosis, Pregnancy

INTRODUCTION

The occurrence of Acute Intestinal Obstruction (AIO) during pregnancy is extremely rare.¹⁻³ Because of its clinical polymorphism, the diagnosis is often late and requires a strong presumption.²⁻⁵

Diagnostic wandering and reluctance of some practitioners to seek radiative exploration frequently engages the foeto-maternal prognosis.^{2,4,6-8} Management should involve the visceral surgeon, obstetrician, resuscitation anesthesiologist and radiologist.^{2,6,9} This collegiate care can be a source of conflict when the lives of the child and the mother have to be preserved.¹

Authors report in this work the diagnostic and therapeutic difficulties as well as the therapeutic attitudes likely to improve the foeto-maternal prognosis through a review of the literature.

METHODS

This retrospective work covers the period from January 2003 to December 2017, when five patients were received for acute intestinal obstruction during pregnancy. Two of them were received in digestive and proctological surgery emergencies for acute intestinal obstruction. The diagnosis of pregnancy was made incidentally during surgery and confirmed by a

pregnancy test and then by a uterine ultrasound. The other three patients were received urgently from the obstetrics and gynecology department. The management of these patients was done in a collegiate manner and involved besides the visceral surgeon and obstetric gynecologist, the resuscitator, the radiologist and the neonatologist pediatrician. Observations were recorded in Table 1.

CASE REPORT

In studied patients 1 and 2 (first trimester of gestation) the diagnosis AIO was evoked but that of the pregnancy unknown, hence the need to eliminate a pregnancy by a test or uterine ultrasound in case of surgical abdomen in the young female girl. In studied patients 4 and 5 the surgical indication was a fetal distress on probable urinary tract infection.

Table 1: Clinical and paraclinical signs and treatment of patients with AIO on pregnancy.

Patients -Age -Gestivity -parity -Gestational age -TEO	Clinical signs	Antecedents medico surgical	Paraclinical examination	Intraoperative lesions	Treatment
Patient 1					
21 years G2P0 10 WA 11 days	Abdominal pain + Vomiting + Nausea SIT + AGC +distention + Irritation+ contractions + fetal H.S	Abortion with complications 2 years ago	X ray : Hydroaeric level images Ultrasound : evolutionary pregnacy of 10 WA WBC :12,5 10 ³	Adhesions between ileum and ileum; between ileum and uterus	Adhesiolysis Resection of ileum (25 cm) anastomosis Natural delivery
Patient 2					
20 years G2P1 8 WA 6 days	Abdominal pain + Vomiting + Nausea + SIT + AGC Distention + Irritation +Contractions + BDC fetaux	Appendicectomy 2 years ago	X ray : Hydroaeric level images Ultrasound : evolutionary pregnacy of 08 WA WBC :11 10 ³ /ml	Adhesions between ileum and coecum and wall	Adhesiolysis Natural delivery
Patient 3					
32 years G2P0 21 WA 5 days	Abdominal pain + Vomiting + Nausea SIT + AGC + distention Irritation + Contrctions + Fetal H.S	Abortion with complications 3 years ago	Ultrasound : evolutionary pregnacy of 21WA; distention and intestinal loops thickening WBC : 14 10 ³ /ml	Adhesions between jejunun and uterus and ileum	Jejunal resection (10 cm) + Jejunostomy resuscitation with parenteral nutrition + Anastomosis at 26 th WA+ Natural delivery
Patient 4					
37 years G3P2 35 WA 2 days	Abdominal pain + Vomiting + Nausea + SIT + AGC distention Irritation + Contractions + Fetal H.S	Pelvi peritonitis	Ultrasound : evolutionary pregnacy of 35WA and bradycardia Distension and intestinal loops thickening WBC : 12 10 ³ /ml	Adhesions between ileum and pelvis, ileum volvulus	Adhesiolysis + Cesarean delivery
Patient 5					
23 years G3P1 33 WA 4 days	Abdominal pain Vomiting + Nausea SIT + AGC distention Irritation + Contractions + Fetal H.S	Salpingectomy for ectopic pregnancy 3years ago	WBC : 17 10 ³ /ml	Adhesions between ileum and caecum with ileum necrosis	Cesarean delivery + Ileum resection (10 cm) + Ileostomy + Anastomosis 90 day later

AGC: alteration of the general condition; **Fetal HS**: fetal heart sounds; **GP**: Gestivity and parity; **SIT**: shutdown of intestinal transit; **TEO**: time of evolution of occlusion; **WA**: Week of Amenorrhea; **WBC**: white blood cells

All patients were systematically tocolysed as soon as the pregnancy diagnosis was performed. Patients 1, 2, 3 continued tocolysis rectally on their exit. It was interrupted in patients 4 and 5 as soon as the indication for caesarean section was made.

The first two patients with simple follow-up were discharged at postoperative D10. They gave birth vaginally respectively to 40 and 39 week of amenorrhœa (WA) of a girl and a boy. Their birth weights were respectively 2700 g and 2350 g with an Apgar at 7, 8, 9 for the little girl and 7, 7.8 for the little boy. Both infants were apparently healthy and had no malformations despite irradiation during the organogenesis period.

The third patient benefited from parenteral nutrition in hospital environments up to 25 WA or the restoration of digestive continuity was done. She came out on day 12 of this second intervention and delivered vaginally a boy weighing 1980g Apgar 6, 7.8 and healthy at 38 WA. The indication for caesarean section in the fourth and fifth patients despite prematurity was a fetal distress. The newborns had respectively 2100 g, Apgar 6, 7, 8 and 1800 g Apgar 5,6,7. They were healthy. The fourth patient was discharged at day 12 with simple postoperative follow-up. The fifth patient was discharged at day 30 after complicated follow-up of a parietal suppuration with cutaneous release. Cutaneous opening was sutured after local care before discharge.

In addition, the newborns of the patients 1, 2 were taken to the neonatologist for exposure to Rx during the period of organogenesis and that of the patient 3 for low birth weight. The new ones of patients 4 and 5 were seen for prematurity and fetal distress. The discharged patients were reviewed two weeks later.

DISCUSSION

These observations illustrate the difficulties encountered in the management of parturients in an African context with limited resources. These difficulties concern the monitoring and evolution of pregnancies especially when they are associated with other pathologies, the dissemination of information and collaboration between different specialties and the absence of obstetrician gynecologist in the care of studied patients received in surgical emergency.

The incidence of acute intestinal obstruction (AIO) and pregnancy is poorly known worldwide.^{2,4} However since the description of the first case in 1830 by Houston, its incidence would be increasing passing from 1 case in 66 000 pregnancies to 1case in 1 500 pregnancies in the last decades.

5 cases were reported in 11 years in Morocco by Najih.^{4,6} In Côte d'Ivoire, in 25 interventions combining pregnancy and digestive diseases Lebeau et al described 1case over four years.¹⁰

The etiology of AIO during pregnancy is dominated by intestinal adhesions: 53 to 60% of cases compared to 64 to 77% of cases in the general population.^{2,6}

The frequency of the involvement of the intestinal adhesions is explained by the resurgence of abdominal surgery in women, including appendicectomies and pelvic inflammatory diseases.^{2,4} Also AIO on pregnancy would be common among primiparous women (2/3 of cases) and would occur during the first pregnancy following surgery.² The other causes of AIO in pregnant women include intussusception, cancer, hernias, appendicitis, and volvulus (Table 2).^{5,7}

Table 2: Etiologies of AIO during pregnancy according to Juglard and Twite.^{2,4}

Etiologies	Percentage
Adhesions	53-60
Volvulus	23-25
Invagination	5
Hernia	1,7- 3
Cancer	1
Appendicitis	0,5- 1
Rare causes	10

The occurrence of AIO on pregnancy is favored by hypotonia of the intestinal smooth musculature responsible for a reduction in peristalsis and worsening of pre-existing constipation following progestative impregnation.^{4,6} In addition, the increase in the volume of the uterus is synchronous with the increase in the frequency of the AIO (Figure 1).^{2,4}

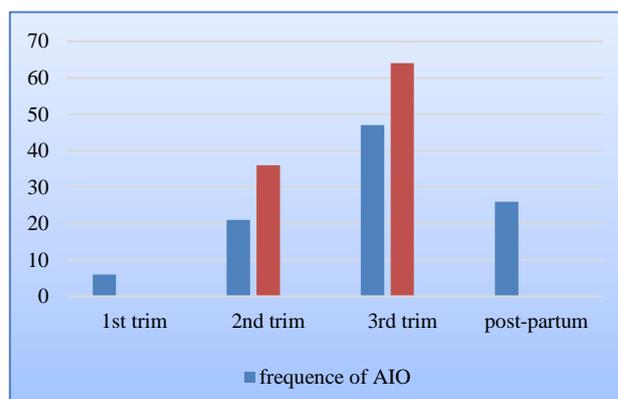


Figure 1: Occurrence frequencies of AIO and fetal mortality by gestation period according to Twite.⁴

Of which 1/3 is accompanied by vomiting.² The meteorism is masked by the distention of the abdomen due to the volume of the gravid uterus.¹ The net and early cessation of gases and stool is uncommon (30%) and is confused with aggravated pre-existing constipation.⁴

Para-clinical investigations make first-line use of abdominal ultrasound.^{1,4,6} It is innocuous, repetitive at will with a sensitivity and specificity of 89 and 100%.^{4,6}

It eliminates the other causes of ileus of biliary and renal origin.^{2,4,8} It is the only one to specify fetal or embryonic vitality.^{2,8}

In addition to the diagnosis of AIO, it makes it possible to follow the evolution of a conservative treatment which will be interrupted in case of a thickening of the intestinal wall reflecting an ischemia.^{2,6}

The use of radiation tests determines two groups of practitioners. Reluctant practitioners who counter indicate in a relative or formal way the use of these explorations because of the risks of malformation during organogenesis.⁶

Non-reluctant practitioners, who estimate that 0.01 Gray represents 10 times the dose of abdominal x-ray leads to a risk of malformation of 1 case in 3,000 pregnancies compared to 1 case in 1,000 pregnancies in the general population, don't understand the reluctance of the first.⁴ The sensitivity and specificity of the abdominal x-ray decrease with gestational age.² They are respectively 53 and 75% globally.⁴ Authors recommend it for non-contributory ultrasound even in the first trimester.

Computed tomography (CT) remains the gold standard for the diagnosis of intestinal obstruction.² However, it is contraindicated during organogenesis because of high doses of irradiation.^{1,2,6}

Magnetic resonance imaging (MRI) would be, for some authors, contraindicated in the 1st trimester even during the pregnancy.⁶ Recent studies have demonstrated that it is anodyne for the fetus, making it an excellent alternative to CT in its SS-FSE frequency in case of diagnostic impasse and contraindication of the latter.^{2,8}

In terms of biology, hyperleucocytosis, particularly in the 2nd trimester due to adrenal corticosteroid impregnation, is the rule.^{2,6} Its recent variation has a great presumptive value.⁴

Thus, the initial diagnosis referred to an AIO in the pregnant woman is often misplaced even in the presence of evocative imagery, as was the case with studied patients 4 and 5.^{2,4} The diagnosis requires clinician familiarity with the chart and thus a strong index of suspicion.^{3,5} It will be necessary to evoke an AIO during the pregnancy in case of frequent and uncontrolled vomitings in the 1st trimester and in particular in the 3rd trimester.⁶

The failure of a well-conducted anti-emetic treatment combined with an anamnesis of abdominal surgery is very suggestive of the diagnosis.^{4,6}

In principle, informative abdominal and pelvic ultrasonography and evaluative clinical examination are sufficient for diagnosis.⁴ In case of evasive diagnosis, do not hesitate to use abdominal x-ray as authors did for 2 of

studied patients in the first trimester with children born without malformation.^{6,8,9} In case of formal contraindication of CT, use MRI (SS-FSE) which is safe for the embryo and the fetus with the same sensitivity and specificity. In authors' practice these exams are not available in emergency and even, so they are their access is limited by their cost.

The therapeutic modalities of the AIO during pregnancy are not unanimous.² Some authors institute conservative treatment.^{2,4} In the case of intestinal adhesion, 89% of the conservative treatment is unsuccessful.⁴ For us, conservative treatment could be considered to achieve a close goal before surgery: fetal viability, the exit from the prematurity period, fetal lung maturity or even the term of pregnancy. In no case will it be considered to break the vicious circle of abdominal surgery, adhesion, occlusion, abdominal surgery

When the occlusion is colon-embedded, endoscopic treatment (untwisting or sten insertion) may be considered to prepare better conditions for surgery.^{5,7,8}

Prior to the collaborative intervention the College of Specialists discuss prophylactic tocolysis as was the case in two of our patients, corticosteroid therapy (third trimester lung maturation) and surgical indication.⁶

The accepted principle of treatment is function of gestational age:

- up to the 26th WA laparotomy, lifting of the occlusion and continuation of the pregnancy until term if possible,
- between the 26th and 34th WA, if possible, fetal lung maturation, Caesarean first, then treatment of the occlusion,
- from the 34th WA, caesarean then treatment of the occlusion
- at any time in the presence of criteria of gravity, laparotomy with lifting of the occlusion, caesarean section or leave the pregnancy evolved.⁶

It must be borne in mind that the life of the mother takes precedence over that of the child.^{1,6} The risk of significant fetal hypotrophy associated with prematurity in the 3rd patient made us suspend the caesarean at the time of the restoration of the digestive continuity to the 26th WA for a term delivery.

The opening of the abdomen is done by umbilical medial laparotomy that can be enlarged.^{4,6} It must allow a treatment of the occlusion with minimal manipulation of the uterus.⁸ Laparoscopy is not recommended especially in the 3rd trimester.⁴

In these physically and psychologically weakened patients the occurrence of postoperative peritonitis by

anastomotic release is a serious complication (risk of puerperal infection with multiorgan failure and haemorrhage).⁸ also the indication of an intestinal resection with anastomosis at the same time (Rey Bar) must be rigorous.

In addition, patients with a stoma must benefit from parenteral nutrition in intensive care in case of jejunostomy (patient 3) or psychological refusal of an oral diet.^{11,12} The importance of psychological support is not neglected in these patients and the restoration of digestive continuity should be done as soon as possible if authors decide to continue the pregnancy as in studied patient 3.⁸

Maternal mortality is down sharply.⁶ It rose from 20 to 31% in 1958 to 6% or even zero at present because of the progress of resuscitation.^{1,6,11} However, fetal mortality stagnates between 20 and 30% due to prematurity and fetal hypoxia secondary to maternal hypotension.^{2,4,6,11} Fetal mortality also varies with age of gestation: none in the first trimester reaches 36 and 64% in the 2nd and 3rd trimesters (Figure 1).⁴

CONCLUSION

The rarity and lack of clinical specificity make the diagnosis of the combination of acute intestinal obstruction and pregnancy difficult and late. Morbidity and fetal mortality remain high. Early diagnosis and prompt treatment are the only alternatives to improve this prognosis. Conservative treatment has no other purpose than to prepare the surgery at the right time.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Traore L, Ango PD, Anoh AN, Kouadio L, Dia LJ, Kouadio GK. Surgical and medical management of 05 cases of acute intestinal obstruction on pregnancy in university hospital center of Treichville, Côte d'Ivoire. *Int Surg J* 2018;5:2921-5.