

Secondary Abdominal Pregnancy with Diagnostic Errors, Two Cases at Public Health Establishment 1 Ndamatou (Senegal): Literature Review

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Abstract

This paper presents two case reports of secondary abdominal pregnancy resulting from cesarean scar dehiscence and uteroplacental invasion, respectively. Both cases involved initial diagnostic errors via ultrasound, resulting in fetal death and requiring laparotomy for management. The authors review the literature to discuss the high rate of diagnostic oversight, the role of imaging, and surgical outcomes in low-resource settings.

Keywords

Abdominal Pregnancy, Death Fetal, Failure Labor, Ultrasound, Laparotomy

1. Introduction

Abdominal pregnancy (AP) is defined as the implantation and development of a fertilized egg in the peritoneal cavity. It is most often secondary, linked to a tubal-abdominal abortion or a ruptured tubal ectopic pregnancy (EP), and the primary form is extremely rare. It remains a rare type of ectopic pregnancy. Advanced forms are more common in developing countries. The diagnosis is often overlooked and must be suspected clinically and confirmed by ultrasound or MRI [1]. Maternal mortality ranges from 0% to 18% and the fetal prognosis is poor, with a stillbirth rate of 75% to 95% [2]. Treatment is mainly surgical.

We report two cases of secondary abdominal pregnancies with the aim of re-

viewing the literature and preventive measures to avoid diagnostic errors.

2. Observations

2.1. Observation 1

K.D., aged 39, 6th pregnancy, 3rd delivery with a history of two intrauterine fetal deaths and cesarean section, referred for management of a retained dead fetus based on an obstetric ultrasound scan in a context of severe gestational hypertension. The pregnancy was monitored in our structure by gynecologists and she had attended three prenatal consultations. A dating ultrasound was performed, showing a single intrauterine pregnancy at 13 weeks of amenorrhea + 1 day, and the biological assessment was without particularity.

On examination, she was in good general condition, with normal-colored mucous membranes, blood pressure of 20/12 cmHg, and heart rate of 110 bpm. The obstetric examination revealed a Pfannenstiel incision scar, uterine height of 16 cm, and absence of fetal heart sounds. On vaginal examination, the cervix was long, posterior, and closed, and the presentation was unclear.

The ultrasound revealed fetal death in utero at 25 weeks of gestation. Laboratory tests were unremarkable, with hemoglobin at 13.3 g/dL, platelet count at 341,000/mm³, white blood cell count at 8420/mm³, creatinine at 7 mg/L, and prothrombin at 100%.

Parenteral treatment with Nicardipine was initiated and two rounds of artificial labor induction with misoprostol at a dose of 200 µg every 6 hours were performed without success.

A second ultrasound scan was performed, revealing a single intra-abdominal pregnancy that had stopped at 24 weeks of gestation, with maceration and anamnios associated with signs of peritoneal irritation (**Figure 1**).

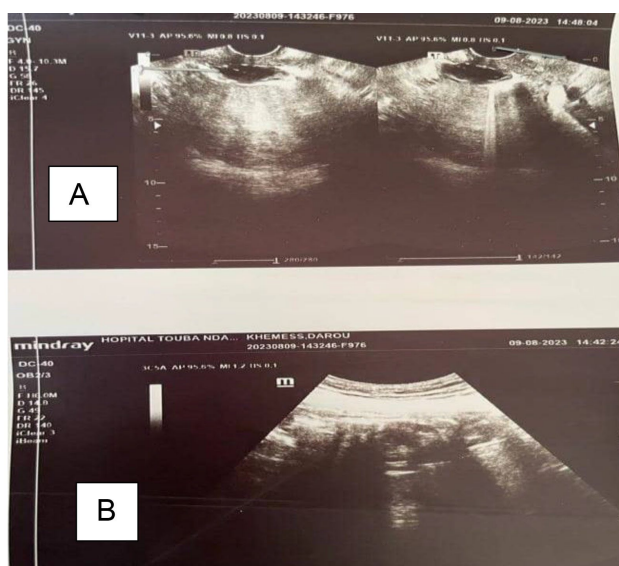


Figure 1. Ultrasound image of a discontinued abdominal pregnancy. (A): empty uterus; (B): fetal death outside the uterus.

Laparotomy revealed significant hemoperitoneum, an abdominal pregnancy with a macerated stillbirth surrounded by the amniotic membrane containing foul-smelling amniotic fluid, and a chorion adhering to the small intestine, sigmoid colon, and posterior surface of the uterus with dehiscence of the cesarean scar (**Figure 2**, **Figure 3**).

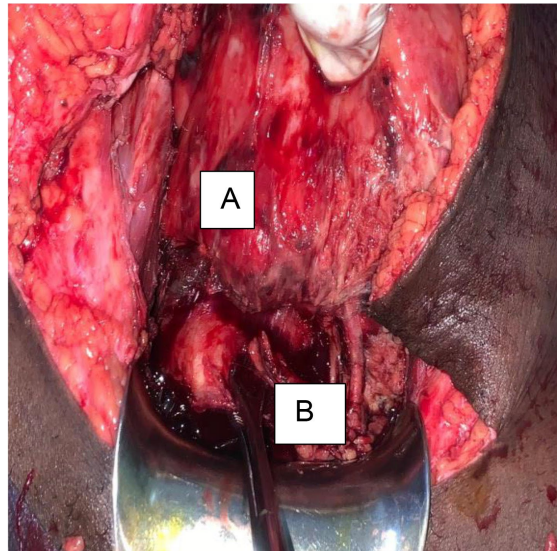


Figure 2. Surgical view of a cesarean scar dehiscence that caused pregnancy migration. (A): Anterior uterine wall; (B): Cesarean scar dehiscence.



Figure 3. Surgical specimen from an abdominal pregnancy, macerated stillborn fetus, and placenta.

Aspiration of hemoperitoneum, adhesiolysis with complete delivery followed by extraction of a macerated female stillbirth weighing 500 g, segmental hysteror-rhaphy, abdominal lavage, and closure of the various layers. Parenteral antibiotic therapy with Ceftriaxone 2 g/day and Metronidazole 500 mg $\times$ 3 days for 48 hours, followed by oral treatment with Amoxicillin-clavulanic acid 1 g/125 mg $\times$ 2/day and Metronidazole 500 mg $\times$ 3/day for 7 days. The patient was hospitalized for 12

days. The postoperative course was marked by parietal suppuration on the 15th postoperative day, which responded favorably to local treatment.

2.2. Observation 2

B T, aged 37, 10th pregnancy 8th delivery, 6 living children, 2 deceased, referred for exceeding 43 weeks of amenorrhea, absence of active fetal movements, and minimal metrorrhagia.

The medical record shows a single prenatal consultation at 20 weeks of amenorrhea. An obstetric ultrasound revealed an evolutive intrauterine monofetal pregnancy of 17 weeks + 6 days and an organic cyst on the right ovary measuring 90 × 65 mm (**Figure 4**). On examination, she was in good general condition, with normal-colored mucous membranes, blood pressure of 118/88 mmHg, heart rate of 114 bpm, uterine height of 27 cm, abdominalized fetus, and absence of fetal heart sounds. On vaginal examination, the cervix was closed, long, and the presentation was unclear.



Figure 4. Ultrasound image of intra utérine pregnancy at 17 weeks + 6 days.

The ultrasound scan revealed an abdominal pregnancy with fetal death at 30 weeks of gestation. The laparotomy revealed an abdominal pregnancy with a macerated stillbirth, fundal and omentoplacental adhesions, and an organic ovarian cyst on the right ovary measuring approximately 10 cm (**Figure 5**).

An epiploplacental adhesiolysis, extraction of a macerated female stillbirth weighing 2400 g, total hysterectomy with right adnexectomy removing the adherential chorion due to uteroplacental bleeding causing hemodynamic instability, and closure of the various planes were performed. A whole blood transfusion and parenteral treatment with Ceftriaxone 2 g/day and Paracetamol 4 g/day were administered after surgery.

The patient was hospitalized for 8 days and there were no complications following the operation.

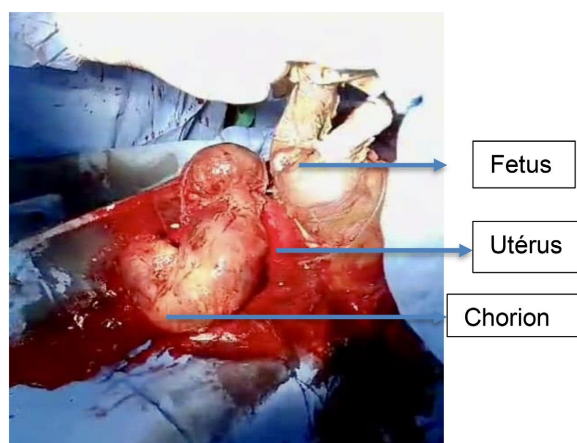


Figure 5. Operative view of secondary pregnancy at abdominal pregnancy.

3. Discussion

Abdominal pregnancy (AP), defined as intra-abdominal peritoneal trophoblastic implantation, accounts for 1% of ectopic pregnancies (EP). Its incidence is 1 per 10,000 live births, according to a study conducted in the United States [3]. In Africa, data varies widely, ranging from 0.009% in Morocco to 0.152% in Nigeria; in Senegal, Diouf et al found a frequency of 0.09% [4].

There is a secondary form, which is the most common, linked to tubal abortion or rupture of a tubal ectopic pregnancy (EP), and a rare primary form, which must meet Studdiford's criteria, which are as follows: normal fallopian tubes and ovaries, absence of uteroperitoneal fistula, and exclusive contact of the egg with the peritoneal surface [5].

Both of our cases are secondary forms, as excluded by Studdiford's criteria.

For Patient 1 there is a uteroperitoneal fistula characterised by the dehiscence of the cesarean scar and for the Patiente 2, the secondary forms is characterised by the organic cyst and the uteroplacental invasion.

Preoperative diagnosis of abdominal pregnancy is difficult; the nonspecific nature of the symptoms and the clinical polymorphism associated with term pregnancy mean that the diagnosis will be incidental and surgical.

On the maternal side, there is often an episode of paroxysmal abdominal-pelvic pain in early pregnancy followed by unexplained chronic pain. Various signs should be noted: persistent nausea and vomiting, metrorrhagia, and anemia contrasting with the modest nature of the metrorrhagia. The diagnosis is sometimes made when treating massive hemoperitoneum in an unrecognized pregnancy.

In terms of the fetus, the discovery of oligohydramnios, decreased fetal movement (DFM), unexplained intrauterine fetal death (IUFD), painful active fetal movements, unexplained intrauterine growth restriction, or persistent transverse presentation should raise suspicion of the diagnosis [6].

In both cases, the diagnosis was marked by fetal death in utero, failure to induce labor artificially, abdominalized fetus, and post-term pregnancy.

Fetal death is very common at the time of diagnosis in the literature [2] [7].

Delayed diagnosis due to intrauterine location or failure to recognize the diagnosis on ultrasound early in pregnancy, poor clinical symptoms, or poor prenatal care, particularly in the absence of further ultrasounds during follow-up, contribute to fetal death at the time of diagnosis. In addition, high blood pressure and post-term pregnancy, which exacerbate fetal-placental vascular abnormalities in abdominal pregnancies, contribute to fetal death in our patients at the time of diagnosis.

Failure to induce labor artificially and post-term pregnancy are also circumstances in which abdominal pregnancy is frequently discovered in the literature [8] [9]. In these situations, the diagnosis is often made after clinical and ultrasound reassessment or during surgery. A similar situation was found in one of our patients (Patient 1).

Ultrasound provides valuable information and sometimes leads to a diagnosis in cases of unexplained oligohydramnios, a fetus not circumscribed by the myometrium, or visualization of an empty uterus, often considered a “pelvic mass.” Ultrasound is crucial, suggesting the diagnosis and indicating the need for an MRI.

Numerous publications have demonstrated the decisive contribution of MRI in establishing the diagnosis, which reveals an empty uterus, a fetus in the abdominal cavity not circumscribed by myometrial tissue (particularly clearly visible at the bladder level), a frequently transverse presentation, and oligohydramnios.

MRI also provides information on the location of the extrauterine placenta, providing valuable preoperative information [6].

In our two cases, ultrasound enabled the diagnosis to be corrected before surgery by revealing an empty uterus associated with retained fetal death. Diagnostic errors have been reported in 50% of cases in certain series [10] [11]. This may be due to an inherent reduction in the field of view during ultrasound [12]. During the procedure, the possibility of an ectopic pregnancy must always be considered. Individualization of the uterus, clearly highlighting all of its walls as well as the ovaries, ensures that this diagnosis is not overlooked when a gestational sac appears to be intrauterine. Abdominally, an anterior placenta can be a source of diagnostic error. It can be confused with the thickness of the uterine wall separating the maternal bladder and the fetus. The endovaginal route is more effective for diagnosing asymptomatic abdominal pregnancy, particularly in early pregnancy [13].

According to the literature, the diagnostic error rate often reaches 50% in retrospective series [7] [10] [11] (**Table 1**).

Table 1. Outcomes of retrospectives series on diagnostic errors.

Authors	Number of cases	Error rate	Year of publication	Country
Sunday Adeoye <i>et al.</i> [7].	20	50%	2011	Nigeria
OA Ayinde and <i>et al.</i> [10].	14	50%	2005	Nigeria
CeYu Chen <i>et al.</i> [11].	17	70.59%	2023	Chine

Treatment is always surgical. If the fetus has died in utero, a planned laparotomy is scheduled to avoid exposing the mother to infection and coagulation disorders. If the fetus is alive, termination of pregnancy must be discussed before 20 weeks. The usual approach is laparotomy, although a few rare cases of laparoscopic surgery for pregnancies of less than 12 weeks have been reported. After 20 weeks, a laparotomy will be scheduled at 34 weeks, after fetal lung maturation has been achieved. Due to the risk of uncontrollable bleeding, any attempts to remove the placenta are strictly prohibited if the placenta is attached to a vital organ or vessel. If delivery is possible, it is performed intraoperatively. The standard approach is to leave the placenta in place and cut the cord as close as possible. Placental resorption is monitored by ultrasound and placental hormone levels (chorionic gonadotropin). Methotrexate may be recommended to accelerate placental resorption [14].

All of our patients underwent laparotomy, and a spontaneous placental bleeding complicated by hemodynamic instability was observed, leading to hysterectomy to remove the placental mass, followed by blood transfusion. Thus, maternal mortality was zero, but neonatal mortality was 100%, close to the data in the literature, mainly related to poor uteroplacental vascularization, delayed diagnosis, or other comorbidities.

4. Conclusion

Abdominal pregnancy remains a rare form of ectopic pregnancy and is difficult to diagnose. However, in our context, ultrasound plays a key role in diagnosis. We present these two cases to draw the attention of healthcare providers to the practice of ultrasound and suggestive contexts in order to reduce diagnostic errors.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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