

## Full Term Abdominal Pregnancy with Healthy Newborn: A Case Report

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### Abstract

We report a case of full term abdominal pregnancy with healthy newborn. This is a rare variety of ectopics pregnancies whose evolution to the end remains exceptional. It is unique to developing countries with a high incidence of genital infections and poor pregnancy monitoring. It is associated with significant perinatal mortality because of fetal malformations and maternal morbidity related to hemorrhagic, infectious and occlusive risk. Ultrasound is almost unavoidable for positive diagnosis supplemented by magnetic resonance imaging detecting fetal malformations and allowing a better analysis of placental relations with the abdominal organs; decisive elements to optimize the care of the parturient.

**Keywords:** Abdominal pregnancy; Term pregnancy; Ultrasonography; Magnetic Resonance Imaging (MRI)

### Introduction

Abdominal pregnancy is a rare case, with an incidence of 1% of all the ectopic pregnancies [1]. It is defined as a primary or secondary implantation and development of the embryo, partially or totally in the abdominal cavity.

Term abdominal pregnancies with viable fetus are therefore exceptional with a high perinatal mortality and significant maternal complications. We present a case of abdominal pregnancy at full term with a healthy baby and without major malformations. The purpose of this study is to illustrate through this observation the role of imaging especially ultrasound and magnetic resonance imaging in positive diagnosis while clarifying placental relations with abdomino-pelvic organs, optimizing the take over and the care of parturient.

### Case Report

We report a case of a parturient from a rural area in southern Morocco, she is 26-years-old, without pathological antecedents, 2<sup>nd</sup> gravida, 2<sup>nd</sup> para, her first delivery was vaginal giving birth to a new born alive. She could not remember her last menstrual date but claimed she is at term of pregnancy. She never consulted for her current pregnancy and she is presented for abdominal discomfort.

On examination, she looked generally stable. She was not pale; vital signs were within normal parameters. Cardiovascular and respiratory systems did not reveal any abnormalities. The abdominal examination revealed symphysio-fundal height of 33 cm, transverse lie, fetal heart rate of 136 beats per minute and no uterine contractions.

Vaginal examination revealed a long cervix without dilatation. There was no vaginal bleeding. Abdomino-pelvic ultrasonography showed a globular and empty uterine cavity, increased in size, measuring 16 × 8.8 cm (Figure 1) with an intra-abdominal oncofetal and viable pregnancy (Figure 2) estimated at 37 weeks of amenorrhea. The fetal presentation was transverse. The placenta is in contact with posterior surface of the bladder and it is inserted on posterior surface of the body's uterus, its vascularization comes from the right iliac vessels (Figure 3).

Fetal magnetic resonance imaging (MRI) confirmed ultrasound data, fetal transverse presentation with head below the lower edge of the right liver (Figure 4), pushing the right colon back and outside and the kidney back and inside. The feet were positioned within the left parieto-colonic gutter (Figure 4), absence of fetal visceral malformation, absence of peritoneal effusion without amniotic fluid and sac detectable. MRI permit better analysis of placental contact with abdomino-pelvic



Figure 1: Ultra-sonographic imaging: Uterus increased in size with empty cavity.

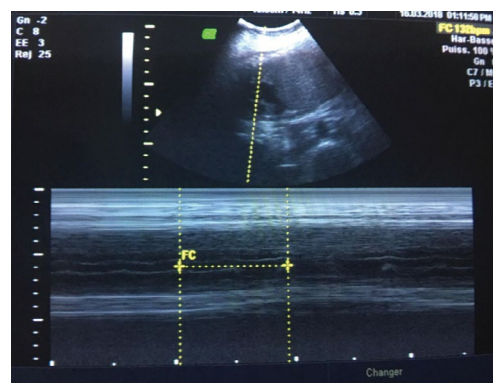


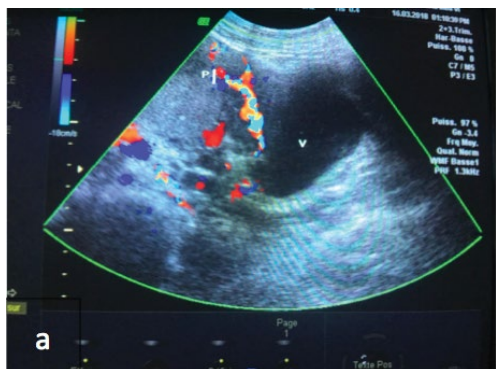
Figure 2: Ultra-sonographic imaging: Positive fetal cardiac activity.

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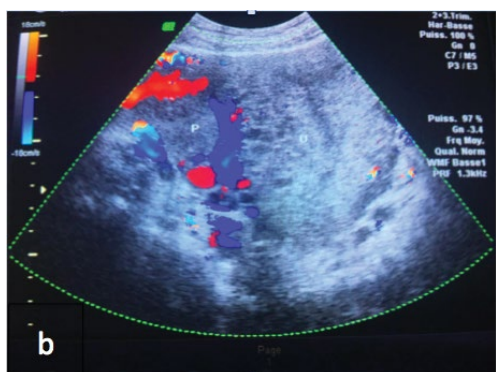
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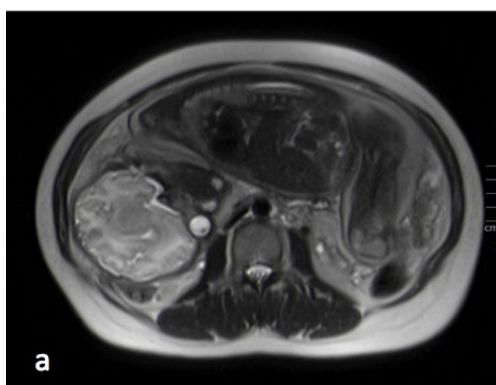
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**Figure 3a:** Ultra-sonographic imaging with Doppler color, placenta in contact with posterior surface of the bladder.

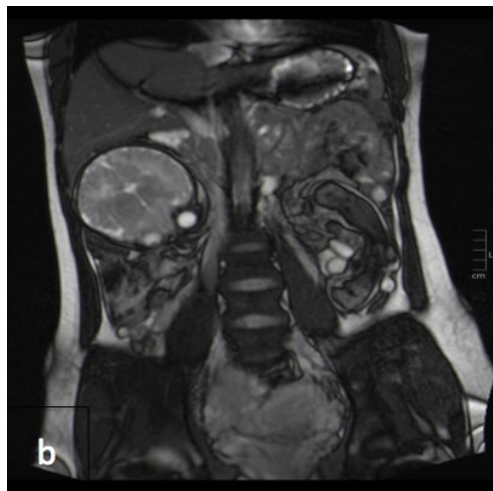


**Figure 3b:** Placenta is inserted on the posterior and superior surface of uterus and its vascularization comes from right iliac vessels.

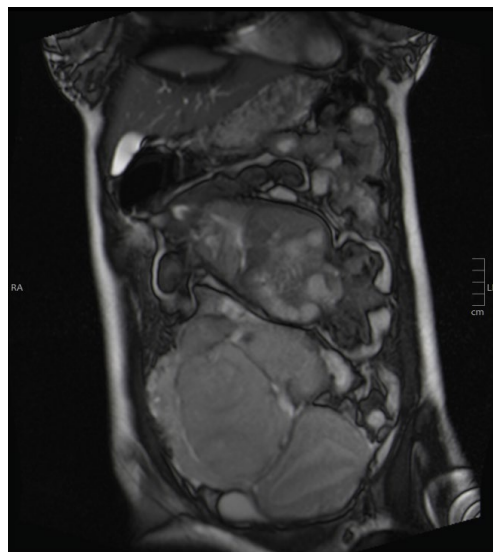


**Figure 4a:** MRI imaging with TRUFFI sequences. Axial plane: Intra-abdominal pregnancy with transverse presentation, absence of peritoneal effusion, and no amniotic fluid and sac detectable.

organs. It was globular, seated on the posterior and superior surface of the uterine body, lateralized on the right, in touch with the superior and posterior surface of the bladder without signs of parietal infiltration detectable (Figure 5). The parturient woman underwent midline laparotomy; surgical exploration confirmed the results of ultrasound and MRI especially the absence of sac and amniotic membrane. The newborn was female, healthy, Apgar 10/10, without malformation except a left club foot. The placenta could not be removed because of



**Figure 4b:** Coronal plane: Fetal head positioned in right flank below the lower edge of the right liver pushing the right and the feet were positioned within the left parieto-colonic gutter.



**Figure 5:** MRI imaging: Placenta was globular, seated on the posterior and superior surface of the uterine body, lateralized on the right, in touch with the superior and posterior surface of the bladder without signs of parietal infiltration detectable.

its adherence to iliac vessels and the patient is treated by methotrexate. Post-operative period was uneventful.

## Discussion

### Epidemiology

Ectopic pregnancies are rare events, accounting for about 1% of all pregnancies and more than 95% of them occur within the fallopian tubes [1-3]. Abdominal pregnancy is an extremely rare form of ectopic pregnancy where implantation occurs within the peritoneal cavity, outside the Fallopian tube and ovary. It is estimated that about 1% of ectopic pregnancies [4]. This incidence varies widely with geographical location ranging between 1/10 000 deliveries in the USA

[5,6] and 1/654 deliveries in Ibadan- Nigeria [5,7]. Most of the cases of abdominal pregnancies are secondary from aborted or ruptured tubal pregnancy. Those beyond 20 weeks gestation and with a viable fetus are an extremely rare condition, with an estimated prevalence of one out of 8099 hospital deliveries [8,9], healthy fetus is therefore unique and very few of such cases have been published during the last ten years. The wide variability in the incidence abdominal pregnancy depends mainly on the socio-economic level of the country and the quality of the surveillance of pregnancy but also on the high prevalence of sexually transmitted diseases, which cause tubal lesions, frequently observed in Africa with a black racial predominance up to 10 to 25 times that of the white race [10].

There are many predisposing factors common of all ectopic pregnancies, among them we quote: genital malformations, sequelae of tubal surgery or tubal inflammatory and the low socio-economic environment. Some observations of abdominal pregnancies on medically assisted procreation have been described. Multiparity is also incriminated, but it is reported in the literature that abdominal pregnancy was described in women over 30 years of age with few deliveries [10].

### Pathogeny

Abdominal pregnancy can be classified into two types Primary and secondary abdominal pregnancies:

1) Primary abdominal pregnancy is rare, there were only 24 cases of primary abdominal pregnancy reported up to 2007 [11]. It refers to pregnancy where implantation of the fertilized ovum occurs directly in the abdominal cavity.

In such cases, three criteria established by studio for diagnosing [12]:

- Fallopian tubes and ovaries are intact.
- Absence of uteroperitoneal fistula.
- A pregnancy related exclusively to the peritoneal surface and early enough to eliminate the possibility of secondary implantation following a primary nidation in the tube.

2) In contrast, secondary abdominal pregnancy accounts for most cases of advanced extra-uterine pregnancy. It occurs following an extrauterine tubal pregnancy that ruptures and gets replanted within the abdomen [13]. Under these circumstances, there is evidence of tubal or ovarian damage [8,14].

### Diagnosis

A high index of suspicion is needed to make a first diagnosis of abdominal pregnancy but that remains missed in a quarter of reported cases [15]. The physical examination is characteristic when it shows an abdomen spread at inspection in relation to an irregular presentation. The palpation confirms the abnormal position of the fetus which is superficial under the skin, not very mobile and especially irreducible [16,17]. It is interesting to note that abdominal pregnancy is associated with a wide range of signs and symptoms due to variable location of fetus and placental site attachment including attachment to the bowel or bladder obstruction. Abdominal pain is the most frequent symptom typically associated with gastrointestinal disturbances, painful fetal movements, abnormal presentations and unaffected cervix [18]. Our patient, however, did not have any symptoms during her pregnancy other than the intermittent abdominal discomfort that she experienced at the end of her third trimester. Clinical history and physical

examination alone are insufficient to make a preoperative diagnosis. Ultrasonography is the most effective method for diagnosing an abdominal pregnancy.

In our patient, the first obstetric ultrasound was performed at the end of the third trimester. The diagnosis was obvious, the ultrasound objectified a uterus increased on size whose cavity was empty. The placenta was inserted on its postero-superior surface and the vascularization was emanated from external right iliac vessels on Doppler examination. The fetus was in a transverse position with the head at the right flank below the lower edge of the liver and the feet at the left parieto-colic gutter. Non-contrast MRI is a non-irradiating imaging that can be performed without maternal and fetal risk spatially on third trimester. It is an essential examination carried out in addition to obstetric ultrasound that helps not only to confirm the diagnosis but also to detect fetal malformation, to identify placental vascularization and to delineate the precise its contact with abdomino-pelvic organs. It is a sensitive, specific and accurate method for evaluating abdominal pregnancy, and may help in surgical planning to avoid maternal morbidity linked to the bleeding related to placental extraction [19,20].

In our case, the MRI confirmed ultrasonographic data, Absence of fetal visceral malformation, absence peritoneal effusion without amniotic sac detectable. Placenta was globular, seat on the posterior and superior surface of the uterine body, lateralized on the right, in touch with the superior and posterior surface of the bladder without signs of parietal infiltration detectable.

### Prognosis

The perinatal mortality varies from 85 to 95%, and the rate of fetal malformation is reported to range from 20 to 90% [5]. The common fetal malformations include facial and cranial asymmetry, joint abnormalities, hypoplastic limbs and central nervous system malformations. Pregnancies with some vascular attachment to the uterus seem to be associated with a higher chance of fetal survival [21]. Lithopedion may result from dead and calcified abdominal pregnancy when it goes undetected for long periods. It may cause intestinal obstruction due to adhesions, intra-abdominal abscess [14]. Maternal mortality following abdominal pregnancy varies between 0 and 18% depending on the series, mainly due to infectious complications and hemorrhage [10,20]. In our case, after fetal extraction, the placenta was not removed consequently of its adherence to the iliac vessels and the patient received methotrexate as treatment.

### Conclusion

Abdominal pregnancy is a rare variety of ectopic pregnancies whose evolution at term remains exceptional. This is unique to developing countries with a high incidence of genital infections and poor pregnancy monitoring. It is associated with significant perinatal mortality because of fetal malformations and maternal morbidity related to hemorrhagic, infectious and occlusive risk. Ultrasound is almost unavoidable for positive diagnosis supplemented by magnetic resonance imaging detecting fetal malformations and allowing a better analysis of placental relations with abdomino-pelvic organs; decisive elements to optimize the care of the parturient and adopt the most appropriate method with a view to limiting materno-foetal morbidity and mortality.

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