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Abdominal pregnancy: Case report

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Abstract: The Abdominal pregnancy is defined as the establishment and development of the egg, fertilized partially or entirely in the abdominal cavity, in a primary or generally secondary way. This is a rare event in the evolution of pregnancy since it accounts for only 1% of the ectopic ovular locations. The goal is to present its pathophysiological and clinical aspects, the complications and the principles taken into account in order to think of evoking this experience so as not to discover it during a very serious complication or per operating. We reported a case of evolutionary abdominal pregnancy diagnosed to 18 SA in 22 years old patient without particular pathological antecedents. The echography and the nuclear magnetic resonance (NMR) confirmed the diagnosis. The processing was surgical and the post operative consequences were simple.

Keywords: Abdominal pregnancy, Echography, Emergency, Uterine extra pregnancy

1. Introduction

An extrauterine abdominal pregnancy is a very rare form of ectopic pregnancy [1,2], with very high morbidity and mortality for both the mother and the fetus, it is defined as the establishment and development of egg fertilized partially or entirely in the abdominal cavity. It can appear either in original form or secondary to a tubo-abdominal abortion or a ruptured ectopic pregnancy. The diagnosis and management can pose some difficulties especially in low-resource centres.

The evolved forms beyond the fifth month are more common in developing countries [2,3]. It is responsible for a perinatal mortality ranging between 40 and 95% [3,4]. Maternal mortality is of 5.2 ‰ [1,3]. Early diagnosis reduces significantly the maternal risk [2,4].

Through at the analysis of a new study of abdominal pregnancy diagnosed at 18 weeks and a literature review, the authors put the point on the epidemiologic aspect, the methods of diagnosis and the therapeutic principles of this kind of pregnancy.

2. Observation

This is Mrs. AM 22 years old without particular pathological antecedents, with regular menstrual cycle 5 days/28 without using contraceptives, a second movement primiparous, her first pregnancy was held smoothly with childbirth by the natural ways of a newborn weighing 3000g, the rest of layers were simple.

The second pregnancy is not followed and the dates of the last menstrual cycles are unknown. The evolution was marked by pelvic pain since the beginning of pregnancy, but became more intense few days before admission, associated with tiny metrorragies made of blackish blood, tenesmus and unencrypted weight loss without digestive or urinary disorders.

The examination on admission found a patient in fairly good condition, weighing 52 Kg to a size of 1,60 m, his blood pressure in 100 mmHg of maxima and 60 mmHg in minima, his conjunctiva was slightly discolored, the abdominal examination found the soft abdomen without defense nor diminishes with a diffuse pelvic sensivity; in the obstetrical examination, the cervix was macroscopically

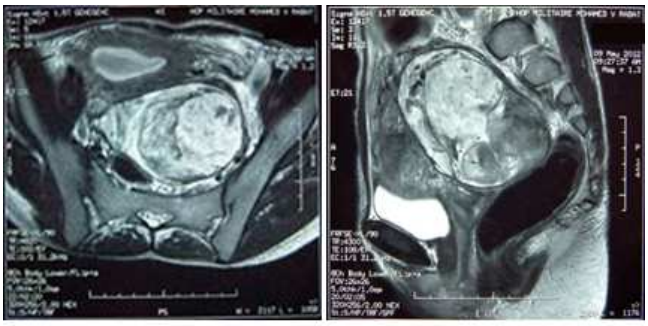
healthy, long, closed and without bleeding; with the vaginal examination, the uterus was of a normal size with a perception of a bulging mass in the bottom of Douglas painless bag to mobilization.

(a) (b)

Figure 1a. *The endovaginale ultrasonography showing the empty uterus with hematometra. The extrauterine pregnancy is located in the Douglas pouch.* ***b.*** *the pelvic ultrasonography showing the cephalic pole and the intracerebral structures of normal aspect of the living fetus developed intraabdominally.*

The Pelvic echography showed the presence in retro-uterine of gestational bag, with alive fetus of which the biometrics corresponding to the gestational age of 15 SA. The uterus was the seat of an anechoic image without trophoblastic crown compatible with so called gestational bag "Fig.1 a-b".

The imagery by nuclear magnetic resonance (MRI) pelvic made in axial, sagittal, and coronal cuts in SP T2 showed: a deciduous uterus with endometrial thick sit of a hydrometric, an extra uterine gestational bag located in the bottom of Douglas bag. The placenta was inserted on the front of the rectum "Fig. 2 a-b".



(a) (b)

Figure 2a. *Axial cut of the abdominal pregnancy in imagery by nuclear magnetic resonance showing retrouterine position and the placenta inserted in the anterior face of the rectum.* ***b.*** *sagittal cut of the abdominal pregnancy in imagery by nuclear magnetic resonance displaying retrouterine pregnancy, the empty uterus and the insertion of the placenta on the anterior face of the rectum.*

Preoperative laboratory tests showed no abnormalities except an anemia with a 10g/dl. The Laparotomy, under general anesthesia, objectified a hemoperitoneum estimated at 400 ml. The gestational bag was located in the inter utero-rectal, the placenta was adherent to the posterior surface of the uterus and superficial to the anterior ligament of the rectum and wide left; after extraction of the embryo we proceeded to incomplete excision of part of the placenta located on the rectum, hemostasis was satisfactory.

The postoperative consequences were simple; the rate of beta HCG at the second postoperative day was to 12,235 IU. The patient underwent a cure of Methotrexate rightly 1 mg/kg. The evolution is marked by a gradual degression of the rate of beta HCG to total negativity to 1 month and a half of post-operative. In the histological report, we can see a fragment measuring 10x8x2 cm with an umbilical cord of 9 cm at the level of the cranio caudal length. The histological examination of the sections shows the presence of chorionic villis lined with a syncytiotrophoblast and cytotrophoblast with a regular vascular connective axis. Besides we note the presence of a gravidarum endometrium made up with endometrial glands with decidualised cells

3. Discussion

The first case of abdominal pregnancy (AP) was described by an Arab surgeon (1000 BC.) [5]. Bayle has reported a case of lithopedion in 1678 [2,3,4]. Since then, many cases of AP have been described with different clinical aspects, depending mainly on diagnostic term.

It is rare and its frequency varies in Africa from 0.009% in Morocco to 0.152% in Nigeria [5]. In the West, it is even more rare because its frequency varies from 0.014% to 0.006% [5]. These frequencies, certainly weak, seem to show that the AP is more common in developing countries [1,4,5,6].

On the etiopathogenic, we distinguish a primary abdominal pregnancy with early implantation of the egg in the abdominal cavity of the secondary AP where trophoblast implantation is done in the abdominal cavity after tubal abortion [3,5,6,7].

In primary pregnancy, the fertilized egg near the ovary will erroneously route into the abdominal cavity and will feed on tissues highly vascularized [4,6], There were only 24 cases of primary abdominal pregnancy reported up to 2007 [7].Studdiford described in 1942 three criteria for determining the diagnosis of primary AP [4,5,6,8]

- No evidence of recent lesion;
- Utero-peritonale absence of fistula;
- Peritoneal localization of pregnancy less than 12 weeks;

The implementation of these pregnancies site may be in the pelvic (CDS Douglas, bottom or rear side of the uterus) as well as in the rest of the pregnant abdomen (diaphragm, liver, spleen, omentum) or retroperitoneal [5,6,8] .

Several contributing factors are incriminated: sequelae of tubal infections, septic abortions often with endo-uterine operations, infertility, intrauterine device, pregnancy obtained after in vitro fertilization (IVF), a cervical traumatic antecedent abortion by suction, uterine scar recurrence AP at the same location, segmental caesarean scar or segmento-corporeal [2,3,5,6,8]. The AP after hysterectomy are also described anecdotally [4,5,9].

In contrast, secondary abdominal pregnancy occurs following an advanced extrauterine tubal pregnancy that

ruptures and gets re-implanted within the abdomen [10]. Under these circumstances, there is evidence of tubal or ovarian damage.

The clinical diagnosis of abdominal pregnancy is difficult preoperatively because there are no specific symptoms [3,4,5,9]. High readiness and awareness are required to make a prompt diagnosis especially in low resource centers [11], in 50% of the cases, AP discovery is coincidental and surgical, then the absence or delay of clinical diagnosis perpetuates the error and prevents appropriate care

The diagnosis of abdominal pregnancy is rarely mentioned. The diagnosis is surgical in front of the report of a normal examination utero-annexie; the site of the pregnancy presence is sometimes difficult to find in clots. The diagnosis is confirmed by the histological examination found that invasive trophoblast implants [3,6,8].

On the maternal level, we often find an abdomino-pelvic paroxysmal episode in early pregnancy followed by a chronic painful evolution unexplained. Various signs must draw attention: persistent nausea and vomiting, bleeding, contrasting anemia with the modest nature of the metrorragies. The diagnosis is often made on the time of complications, it may be an intra-abdominal hemorrhage, toxemia, amniotic embolism, peritonitis or intestinal obstruction [2,4,6,9], and the maternal death occurs 90 times more often than during an intra-uterine pregnancy [1,3,12].

On fetal level, the discovery of oligohydramnios with decreased fetal active movements (MAF), an unexplained intrauterine fetal death (IUFD), an unexplained painful MAF of late intrauterine growth with a permanent transverse presentation, all that should suggest the diagnosis [2,4,5,9].

On the biological level, high maternal serum Alpha-fetoprotein levels and lack of myometrial response to oxytocin stimulation are other tools to help diagnose abdominal pregnancy [13].

With the clinical examination, we are looking for an impression o fetus "molded" by the abdominal wall or, conversely, the "uterine" ill-defined contours. The pain in the palpation with parietal reaction can sometimes suggest a contractile uterus. On vaginal examination, the cervix is readily retro symphysis. Palpation of the empty uterus is difficult [2,3].

In case of early abdominal pregnancy, the ultrasonography is a versatile and safe imaging modality to diagnose ectopic pregnancy, it reveals direct and indirect signs of ectopic pregnancy, and rarely evokes the diagnosis of AP. In the case of advanced AP ultrasonography is a valuable contribution and provides over 50% of cases the diagnosis preoperatively to an empty uterus with no uterine wall around the fetus [3], It usually shows fetal parts that are very close to the abdominal wall and direct contact with the digestive, abnormal lie and/or no amniotic fluid between the placenta and the fetus.

The hormonal environment in ectopic pregnancy can produce an intrauterine fluid collection that mimics the gestational sac.

Identification of an intrauterine gestational sac with yolk sac on a transvaginal ultrasound during early pregnancy rules out ectopic pregnancy in most cases. This finding should be reinforced by threshold β-HCG level (1000-2000 IU/L with transvaginal approach, 6500 IU/L with transabdominal approach) at which an intrauterine gestational sac can be reliably seen in normal pregnancy [14].

MRI is the standard examination in the diagnosis who finds an empty uterus, a fetus in the abdominal cavity not circumscribed by the myometrial tissue, frequently transverse presentation, oligohydramnios also allows for a complete inventory of various reports of the placenta with pelvic abdominal organs [2,3,4,7], so it can provide important information to the surgeons into pre-operational [1,2,4,8, 9]. Teng et al reported an interesting case in which MRI played a decisive role in the diagnosis [15], unfortunately these advanced imaging technologies are not available in most parts of the third world.

The coverage of abdominal pregnancy is a function of the term, before 20 SA, its discovery usually leads to a medical interruption of pregnancy, and most authors recommend laparotomy once the diagnosis is done due to the unpredictable evolutionary profile of this pathology. According to the authors, laparoscopic surgery is achievable during pregnancy under 12 SA [1,2,4,7,9].

The chances of survival of a newborn are very low with the perinatal mortality rate being 40-95% full term [16]. About 21% of babies born after an extrauterine abdominal pregnancy have birth defects, presumably due to compression of the fetus in the absence of the amniotic fluid buffer. Typical deformities include limb defects, facial and cranial asymmetry, joint abnormalities and central nervous malformation.

After 20SA, a several questions arise: should we keep this pregnancy? What are the criteria we should have to keep it! To what extent it must be extracted? And what are the risks of surgery?

The multidisciplinary study should be conducted with parental consent and comprehensive analysis of the pregnancy, circumstances, context, opportunities for access to training tailored surgical ICU and medical means at our disposal [2,4,6 ,12,17].

Martin has proposed criteria that can discuss a conservative attitude in the case of pregnancy higher than 20SA, there are eight criteria: a live baby during pregnancy already advanced, the absence of major congenital malformation, the absence of fetal or maternal distress, constant fetal well-being, placental location low in the abdomen near the liver or spleen, a pocket of water with intact amniotic fluid around the baby, a continuous hospitalization of the patient in a maternity equipped with multidisciplinary teams and intramural, transfusional opportunities, patient informed and willing .

The follow-up of pregnancy must be careful and rigorous, obstetrical echography should be regular with morphology, doppler and amount of amniotic fluid, RCF every day, the mother should be hospitalized in a adapted structure with

close monitoring of hemodynamic status, biological, radiological and detecting any complications should lead to laparotomy in urgency [3,5,6,12].

In the absence of maternal or fetal emergency the term of extraction is 34 SA, a reasonable term as recommended by several authors [5,6,8,9].

The Complete deliverance must be ideal if it is easy to produce after inventory of reports of placenta with pelvic-abdominal organs because massive bleeding can occur when the placenta is removed. This is due to the adhesion of the placenta, which unlike the uterus, does not contract.

The placenta can be left in situ after cord clamping flush with the placental surface, the time for spontaneous involution is variable. For some authors [1,3,4], it remains functional for 50 days. Its preservation can lead to complications: secondary hemorrhage, sub-occlusive syndrome, sepsis, ureteral obstruction [1,5,9,17], choriocarcinoma, and increased morbidity associated with increased risk of reoperation.

In case of the preservation of the placenta we supervise by doppler echography and HCG until its absorption, others keep it in situ and associates Methotrexate like our case [1,5,6,8], but it would increase the risk of secondary infection due to the accumulation of necrotic tissue [2,3,4,9,12], hemorrhage, sepsis, and a patient might need to undergo another surgery [18].

4. Conclusion

The Abdominal pregnancy is a rare affection in which the problem of the diagnosis and its coverage arise. The importance of this case report is the fact that an extra-uterine abdominal pregnancy could be missed during antenatal care despite repeated clinical and ultrasound examinations, Always think about mentioning it in order for it not to be discovered in pre-operational. Each clinician should be very vigilant in diagnosing this condition and should ask for help from more experienced clinicians when in doubt.

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