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Cornual pregnancy – a case report and literature review

Nicolae Bacalbasa[1,2], Irina Balescu[3], Claudia Stoica[4,5], Cristina Martac[6], Valentin Varlas[1,7], Andrei Voichitoiu[1,8], Lucian Pop[1,8], Sorin Petrea[9], Mihaela Vilcu[9,10], Iulian Brezean[9,10], Corina Grigoriu[1,11]

[1]Department of Obstetrics and Gynecology, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania
[2]Department of Visceral Surgery, Center of Excellence in Translational Medicine, Fundeni Clinical Institute, Bucharest, Romania
[3]Department of Visceral Surgery, Ponderas Academic Hospital, Bucharest, Romania
[4]Department of Anatomy, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania
[5]Department of Surgery, Ilfov County Emergency Hospital, Bucharest, Romania
[6]Department of Anesthesiology, Fundeni Clinical Institute, Bucharest, Romania
[7]Department of Obstetrics and Gynecology, Filantropia Clinical Hospital, Bucharest, Romania
[8]Department of Obstetrics and Gynecology, "Alessandrescu-Rusescu" National Institute of Mother and Child Care, Bucharest, Romania
[9]Department of Surgery, "Dr. I. Cantacuzino" Clinical Hospital, Bucharest, Romania
[10]Department of Surgery, "Carol Davila" University of Medicine and Pharmacy, Bucharest, Romania
[11]Department of Obstetrics and Gynecology, Emergency University Hospital, Bucharest, Romania

ABSTRACT

Cornual pregnancy refers to the situation in which the gestational sac is situated at the level of the uterine horn in the condition of a normal or pathological constitution of the uterine body. In such cases an abnormal implantation of the gestational sac will conduct once the pregnancy increases, a significant risk of uterine rupture, cataclysmic hemorrhage and even maternal death. Therefore, in such situations, surgery should be taken in consideration. The aim of the current paper is to report the case of a 39 year old patient diagnosed with cornual pregnancy in which conservative surgery and fertility preservation were successfully performed.

Keywords: cornual pregnancy, excision, partial hysterectomy

INTRODUCTION

Although ectopic pregnancy represents less than 2% of all reported pregnancies, it is responsible for almost 3% of all pregnancy related deaths especially due to the high risks of rupture and hemorrhagic shock [1,2]. Therefore such conditions should be rapidly recognized and diagnosed, endovaginal ultrasound remaining the most important investigation which should be correlated with the serum levels of beta human chorionic gonadotropin (bHCG). In cases in which an intrauterine gestational sac is found but it has an abnormal implantation, in a horn of a bicornuate or septate uterus the term of cornual pregnancy is used. Such cases are also considered and treated as ectopic pregnancies due to the high risk of uterine rupture and fulminant, life threating hemorrhage [3,4]. Therefore, once the diagnostic is suspected, surgery should be taken in consideration in order to save the patient's life; moreover, in cases in which the malformation of the uterus is not so important, fertility preservation should be taken in consideration.

The aim of the present paper is to report the case of a 39 year old nullipara patient diagnosed with a cornual pregnancy in who conservative surgery was successfully performed.

CASE REPORT

The 39 year old nulligesta nullipara woman was investigated for amenorrhea and diffuse abdominal pain and was diagnosed with a gestational sac inserted on the left part of the uterus, probably out-

Corresponding author:
Nicolae Bacalbasa
E-mail: nicolae_bacalbasa@yahoo.ro

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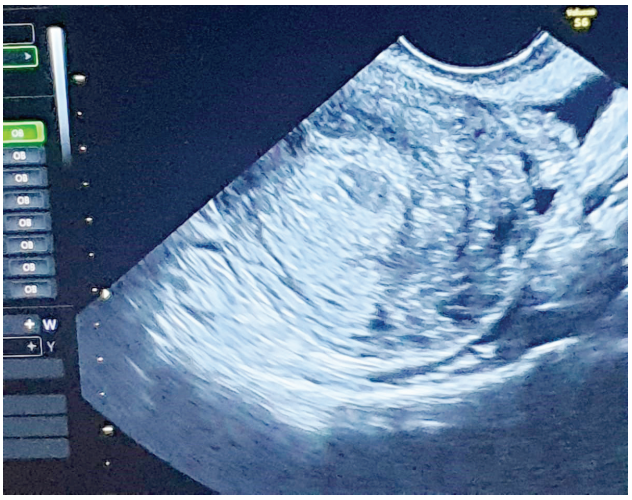

FIGURE 1. Transvaginal ultrasound demonstrating the presence of a cornual pregnancy

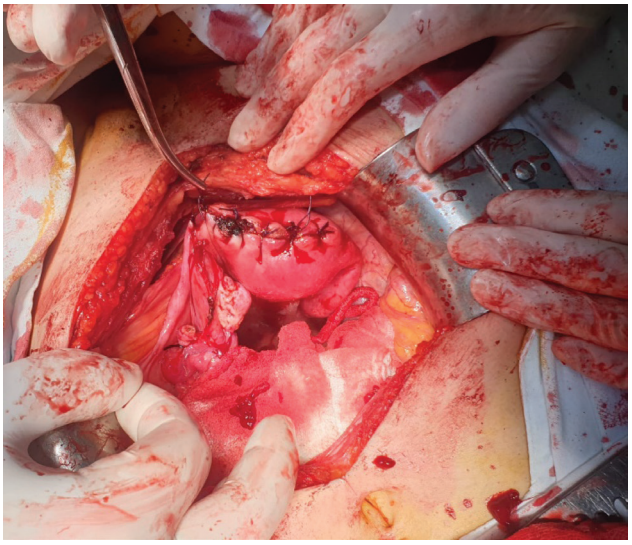

FIGURE 3. Intraoperative aspect after removal en bloc with wedge uterine resection and uterine reconstruction

side of the uterus, in the left broad ligament; the crown–rump length was of 23,3 mm suggesting a nine week pregnancy while embryonic cardiac activity was present. Meanwhile the serum levels of bHCG were of 6324 mUI/mL. The pelvic magnetic resonance imaging confirmed the suspicion of ectopic pregnancy, therefore she was submitted to surgery. Intraoperatively a cornual pregnancy developed at the level of the left uterine corn was found and was excised while the rest of the uterus was successfully preserved and reconstructed (Figures 1-4). The postoperative course was uneventful, the patient being discharged in the fifth postoperative day.

DISCUSSIONS

Cornual pregnancy was initially described in 1952 by Johnston and Moir and refers to the abnormal situation in which an intrauterine gestational

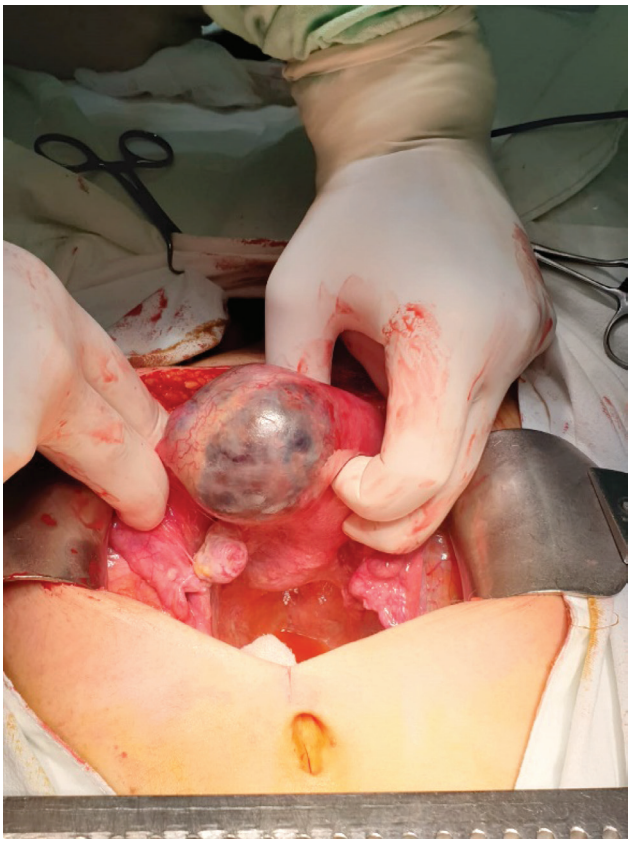

FIGURE 2. Initial intreaoperative aspect revealing the presence of a cornual pregnancy

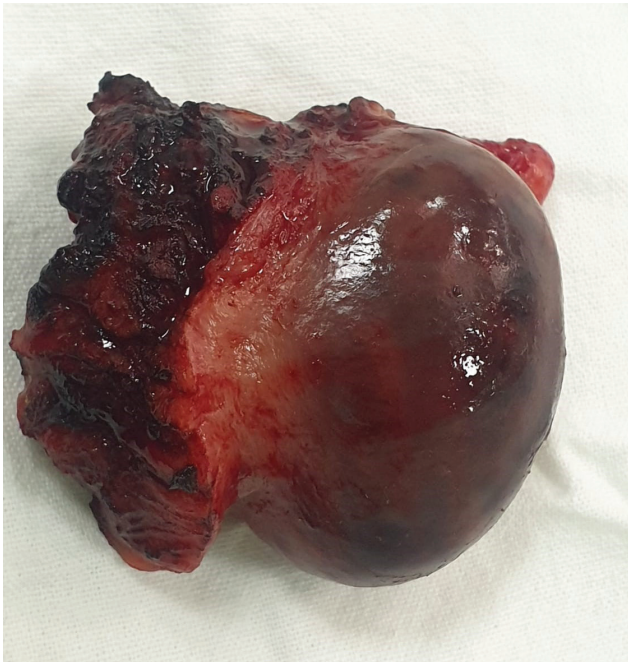

FIGURE 4. The gestational sac after excision – the final aspect of the specimen

sac coexists with a bicornuate or septate uterus [3,4]. Twenty years later Mahler and Grimwade underlined the fact that a cornual pregnancy can develop both in abnormal or normal uterus [3,5]. In this respect, the precise differentiation between normal, intrauterine pregnancy and ectopic preg-

nancy might be difficult to be established; moreover, in such conditions a normal, intrauterine pregnancy might be inappropriately managed as ectopic pregnancy or inversely, this fact having a significant psychological impact on women, especially in nullipara patients [6,7]. Therefore, in the case that we reported the relatively advanced age of the patient in association with the absence of any pregnancy and with the desire to preserve fertility and to obtain a future pregnancy made the therapeutic decision even harder to be taken. In this respect we should not omit the fact that in such cases fertility desire and vital risks such as uterine or uterotubal rupture should be carefully weighted and analyzed before taking a decision [7].

In certain cases medical therapies such as methotrexate administration might be taken in consideration in order to induce abortion; however, this procedure might be associated with severe side effects including uterine rupture and hemorrhagic shock [8-10]. Cases presenting a higher than 6000mIU/mL bHCG level, embryonic heart beats as well as those presenting unruptured masses larger than 3,5 cm in diameter are considered as contraindications for methotrexate administration [11]. Therefore, in the case that we presented, a higher than 6000 mIU/mL and the presence of heart beats enabled us to consider that methotrexate administration should not be taken in consideration.

Another therapeutic strategy which has been proposed with promising results consists of hysteroscopic exploration and morcellation of the gestational sac. However, the efficacy of the method seems to be influenced by the dimensions of the gestational sac, by its location and by the presence of different uterine malformations [9].

Wedge resection of the gestation sac en bloc with the uterine horn seems to be an effective method in order to provide a good local control of the pathogenic condition and to maximize the chances of fertility preservation. Even if surgery is performed in relatively safe conditions – patient with a good hemodynamic condition, with no signs of fulminant intra abdominal bleeding, in certain cases attention should be focused in avoiding intraoperative cataclysmic bleeding. Therefore, cases in which a large gestational sac is encountered, the surgical procedure might begin by blocking the uterine arteries by using clips or stiches. Once the gestational sac is retrieved and the uterus is reconstructed, the material placed at the level of the uterine arteries in order to prevent fulminant bleeding should be taken out [12]. However, in our case this safety method was considered unnecessary due to the relatively small dimensions of the gestational sac.

CONCLUSIONS

Cornual pregnancy represents a potential life threatening condition which should be rapidly diagnosed and treated, especially due to the risk of hemorrhagic shock which might appear if uterine rupture occurs. Therefore, a rapid therapeutic plan should be proposed. Although it seems to be the most facile for the patient, methotrexate administration has certain limitations and disadvantages, as well as the hysteroscopic approach. Therefore, in cases presenting large gestational sac, surgery consisting of gestational sac retrieval en bloc with the affected uterine segment and followed by uterine reconstruction remains the most efficient therapeutic option.

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