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Case Report

A Case Report of Abnormally High β-hCG Levels Seen in an Ovarian Ectopic Pregnancy Masquerading as a Molar Pregnancy

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Abstract

Ovarian ectopic pregnancies are rare, and ovarian molar pregnancies are exceptionally rare with high morbidity and mortality, requiring urgent interventions. Clinically, they have similar presentations, and ultrasound cannot accurately diagnose this rare condition. Further, β-hCG levels are a poor marker, with wide variations from anticipated levels in an ectopic and molar pregnancy. We present a case of a suspected ovarian molar pregnancy and the diagnostic challenges that accompany it, prompting a need for a more accurate diagnostic tool. Such presentations run the risk of either being overcautiously over treated or these may additionally present in a seemingly innocuous manner. This might inadvertently entice the physician to take a less vigorous approach, which may have disastrous consequences. As a clinician, these cases may be exceptionally rare, it is important to entertain a bird's eye view on the investigative data and keep into consideration the possibility of this complication.

Keywords: Ectopic Pregnancy; Molar Pregnancy; Ovarian ectopic; β-hCG; Diagnostic challenge.

Introduction

A pregnancy involving the implantation of the blastocyst in sites other than the endometrium of the uterine cavity is called an ectopic pregnancy. Some of the uncommon implantation sites for such an ectopic pregnancy include the interstitial segment of the fallopian tube, uterine myometrium (cornual), ovary, and peritoneal cavity [1]. Among the various ectopic sites, the most common is a tubal ectopic pregnancy (96%), followed by the abdominal cavity (1%) and ovaries (3%) [2].

Another form of complicated early pregnancy is a hydatidiform mole which is due to disordered proliferation of trophoblastic epithelium and villous edema. It is a type of Gestational Trophoblastic Disease (GTD) and can be classified as complete or incomplete. A distinguishing fact between them is that complete mole pregnancies are diploid, androgenic in origin with no evidence of foetal tissue. Whereas a partial is usually triploid, with evidence of foetal tissue [3]. The chances of a molar pregnancy transitioning into a post-gestational trophoblastic neoplasia are 15~20% from a complete mole and less than 1~5% from partial [4,5]. The definitive diagnosis of a molar pregnancy remains histopathological examination [6].

In normal pregnancies, beta human chorionic gonadotropin (β-hCG) may begin to rise from eight days following ovulation and almost doubles (49% increase) in over 48 hours. In ectopic pregnancies or if early pregnancy loss is suspected, then a slower-than-expected rate of increase or a decrease in β-hCG levels is seen in the majority of cases [7]. The levels of β-HCG in molar

pregnancies have often seen to be significantly higher [8]. Both these complications can require emergency surgical intervention, and we present a case with a suspected ectopic molar pregnancy. As the guidelines for such a presentation are unavailable and the only guidance is through a handful of case reports, we found it incumbent to share our clinical findings.

Case Report

A 23-year-old Pakistani female, primigravida, at 6 weeks 6 days presented with complaints of lower abdominal pain and irregular vaginal bleeding. She had no prior history of pelvic infections (pelvic inflammatory disease, PID), pelvic surgery, or previous irregular periods. On examination, she remained hemodynamically stable, the abdomen was soft, non-tender and there showed no evidence of any palpable mass or free fluid. Further intimate gynecological examinations (per vaginal and per speculum) remained inconclusive. The patient's initial β-HCG levels were 65,112 mIU/ml at 5 weeks 4 days and rose to 94,814 mIU/ml, 9 days later. Following a transvaginal ultrasound (TVS), a partial septate/arcuate uterus of normal size, with no intrauterine gestational sac was seen. Additionally, a large heterogenous mass was seen residing in the left adnexal location, measuring approximately 5.4 x 4.6cm in size. There were no obvious well-defined cystic structures seen suggestive of a gestational sac within the lesion and the left ovary was not well visualized separately. The mass showed a diffusely heterogeneous echotexture and the presence of multiple linear structures with multiple other anechoic areas interspersed within it. A Colour Doppler revealed significant peripheral, as well as central areas of colour flow. One of the largest anechoic cystic areas was measured to be of 17 x 11.4cm.

In view of the clinical history, the patient's possibility of a left adnexal ectopic pregnancy with an associated hematoma was considered. However, the possibility of an associated molar pregnancy could not be ruled out in view of the marked elevation in β-HCG levels. The patient had no pre-operative renal, hepatic, or hematological abnormalities and underwent laparoscopic surgery under general anesthesia. Intra-operatively, a 5 cm, hyper vascular, left adnexal mass was extracted along with blood clots from the Pouch of Douglas (Figure 1). The left ovary was not visualized and therefore thought to be adherent with the left adnexal mass. Other intra-operative findings revealed friable unhealthy granulation tissue on the lateral pelvic wall and were consequently excised. Post-operative period remained uneventful and her β-HCG levels dropped to 33,590 mIU/ml 8 hours following the surgery and further decreased to 2,659 mIU/ml 6 days later.

A histopathological examination (HPE) of the excised mass showed ovarian tissue with areas of hemorrhage and necrosis along with infiltration by variably sized chorionic villi and trophoblasts. The granulation tissue comprised of reactive fibrous tissue, hemorrhage, haemosiderin-laden macrophages, and ultimately negative for malignancy.

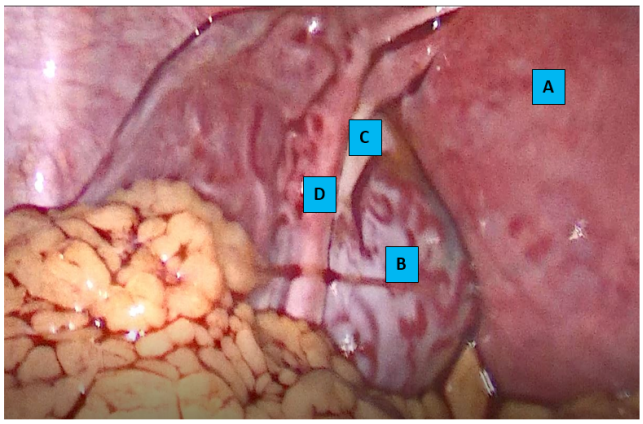

Figure 1 : A. Uterus. B. Ovarian Mass. C. Ovarian Ligament. D. Fallopian Tube.

Discussion

Clinically, a molar pregnancy can present with similar symptoms to that of an ectopic pregnancy, therefore an ultrasound may be useful in differentiating between the two. β-hCG was used as a supplementary marker for both GTD and ectopic pregnancy [9]. However, in this case, the signs on the TVS gave a confounding picture suggesting an ectopic molar pregnancy. A similar case reported, showed a tubal ectopic pregnancy with histological molar changes in the foetus and exploratory laparotomy was performed [10]. However, the β-HCG level for the patient was 5,308 mIU/ml; unlike, the extremely high levels seen in a hydatidiform mole. A clinical need for more effective diagnostic modalities is imperative in such cases, as a ruptured ectopic molar pregnancy can be fatal [11].

In our patient, due to the absence of an identifiable gestational sac in utero and the hypervascularity of the ectopic lesion, a differential of a complete ectopic mole was considered. The β-HCG levels also rose to 45.6% in 9 days, arousing a clinical suspicion of GTD. Even among ectopic pregnancies, ovarian ectopic pregnancies are rare, with an incidence of 1–3% of all ectopic pregnancies [12]. A literature review showed that only 5 cases of an ovarian molar pregnancy have been reported [13]. A study has also shown that there is potential for over-diagnosis of complete moles in tubal pregnancy due to a more florid extra-villous trophoblastic proliferation when compared with evacuated uterine products of conception (POC) [14]. Another case study also showed that β-HCG levels in early ectopic molar pregnancy slowly rose consistent with an ectopic tubal pregnancy, further confounding the use of the β-HCG test [15]. It is crucial to note that the test can present different pictures than the true nature of

the pregnancy. It reinforces the idea of β-HCG testing being useful more in management and follow up rather than in diagnosis.

These findings, in our opinion, make the case extremely complicated and prove that a multidisciplinary approach is essential. It also justifies reason in most cases; the intervention being an exploratory laparotomy owing to the potential fatal complications that may ensue [16]. In our patient, a laparoscopic surgery was performed as the patient was clinically stable. More detailed imaging such as MRI preoperatively and the use of ancillary techniques such as immunohistochemistry and DNA ploidy analysis by fluorescent in vitro hybridization (FISH) post operatively can prove to be useful in the diagnosis of an ectopic molar pregnancy [12,17]. From a clinician's perspective, though these cases may be rare, the possibility of its occurrence must be considered.

Conclusion

- Ovarian ectopic pregnancies are rare and ovarian molar even rarer, both bearing urgent interventions.
- Clinical presentations of an ectopic and a molar pregnancy may overlap or suggest the presence of both simultaneously.
- A multidisciplinary approach to such cases is essential for improving patient outcomes.
- B-hCG readings can be confounding in some cases clinically, and therefore the usefulness of ancillary techniques such as p57 immunochemistry in the effective identification of molar pregnancies [17].

Conflict of Interest: We, the authors, declare no conflict of interests in the making of this case report.

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