Persistent Low Levels of Beta-hCG: A Pitfall in Diagnosis of Retained Product of Conception

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Abstract- Persistent low level of beta-hCG (PLL) is defined as rising hCG level no more than two-fold over a three months period. Almost many types of PLL can lead to the wrong diagnosis. Here, we presented two cases of the retained product of conception (RPOC) with persistent low levels of beta-hCG. Both cases were presented with persistent low levels of beta-hCG and abnormal uterine bleeding since first-trimester pregnancy termination. Ultrasonography revealed a vascular mass with extension from the endometrial cavity to myometrium imitating gestational trophoblastic disease (GTD) or arteriovenous malformation (AVM). The final pathologies of both cases were retained product of conception. Imaging features of RPOC can closely imitate those of an AVM or GTN; so, hysteroscopy is one of the best non-invasive procedures which may be helpful in diagnosis and selection of appropriate treatment especially in young patients who desire to preserve their fertility.

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Introduction

Persistent low level of beta-hCG (PLL) is defined as rising hCG level no more than two-fold over a three months period. Some causes of this situation are early pregnancy, pituitary hCG secretion, false positive β-hCG, quiescent gestational trophoblastic disease (GTD), placental site trophoblastic tumor (PSTT), and hCG consumption (1-3). Retained products of conception (ROPC) refer to a portion of placental tissue which retained in the uterine cavity after abortion or full-term delivery. These retained pieces of placental tissue are common causes of abnormal uterine bleeding (AUB) in women of reproductive age (4). The incidence of PROC varies widely and depends on the initial treatment of miscarriage (surgical or non-surgical), diagnostic criteria (symptoms and signs), and duration of follow-up (5). The combination of echogenic endometrial mass and AUB is a sensitive indicator of ROPC (6,7). Radiologic findings of RPOC may be similar to what is seen in GTD or arteriovenous malformations (AVM) (8). Another important issue is abnormal adherent placenta which can lead to massive hemorrhage and hysterectomy at the time of uterine curettage. This condition may be considered when a patient has had prior uterine surgery like cesarean section or uterine evacuation (9,10).

Hysteroscopic evaluation has both advantages of simultaneous diagnosis and treatment and is most appropriate for women without heavy uterine bleeding. It may be best used for cases with persistent signs of RPOC on imaging. This procedure has the advantages of visualizing complete tissue and its removal (11,12).

Almost many types of PLL can lead to the wrong diagnosis of gestational trophoblastic disease, so overtreatment like chemotherapy or aggressive surgery like hysterectomy may be performed in this situation. Here, we presented two cases of RPOC with persistent low levels of beta-hCG and uterine mass.

Case Report

Case 1

A 29-year-old woman, P2 L2 ab1 referred to the gynecology clinic of our academic hospital because of AUB since three months ago. She had an abortion at eight weeks of gestation three months ago, and curettage was done. At that time, pathologist reported the product

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of normal conception. Serum β-hCG was 3909 IU/L before surgery. Three months after curettage, she referred because of AUB. Physical examination and laboratory assessment were normal except β-hCG to titrate which was 63 IU/L. Vaginal ultrasonography showed normal size uterus and ovaries, but a 20×29×34 mm Prominent vascular mass with slow flow in grayscale and marked vascularity in color Doppler is seen near the fundal part which extending focally in full thickness of myometrium. These sonographic findings were highly suspicious to GTD or PSTT (Figure 1). Because of the persistent low level of β-hCG, we suspected to PSTT. Unfortunately, we didn't have any access to check human placental lactogen (HPL) for more confirmation of our diagnosis. Patient's vaginal bleeding was continued, so the second vaginal ultrasound was done two weeks later. Serum β-hCG was rechecked, and it was 48 IU/L (declined), and urine β-hCG was positive. Abdominal ultrasound and chest X-ray was also normal. The second vaginal ultrasound showed the same result. With regard to this evidence, our diagnosis was PSTT and hysterectomy was planned. The final pathological assessment showed no malignant tumor in the uterus, and the diagnosis was retained product of conception.

Serum β-hCG become zero 10 days after surgery, and then, the patient didn't have any symptoms.

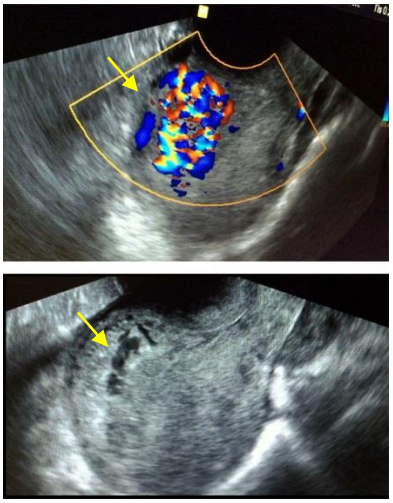

Figure 1. Longitudinal color Doppler and grayscale vaginal US image shows prominent vascular space with marked vascularity isolated to the full thickness of myometrium (arrows)

Case 2

A 22-year-old woman P1L1ab1 referred to our academic hospital because of persistent AUB and persistent low-level beta-hCG (12 IU/L) after first-trimester abortion. Pregnancy termination was done by medical treatment (misoprostol) because of missed abortion one month ago. The patient was pale; vital signs showed blood pressure 90/60 mm/Hg; pulse rate 110/min and normal temperature. Vaginal examination showed bleeding not more than menstrual bleeding and cervix was normal. Complete blood count showed anemia (HCT: 24%). Beta-hCG was 13 IU/L. Other laboratory data were normal. The vaginal ultrasonography revealed an irregular hypoechoic area with 27×19 mm diameter and marked vascularity isolated from myometrium near the uterine fundus (Figure 2).

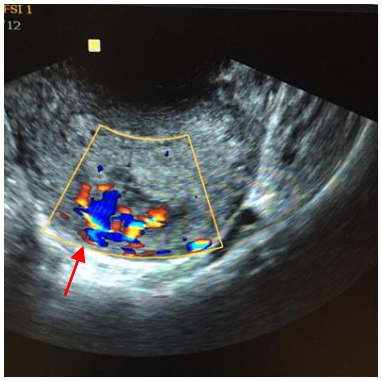

Figure 2. Axial color Doppler vaginal US image shows marked vascularity isolated to the myometrium (red arrow)

Also, MR imaging showed vascular mass with obvious enhancement in the uterine cavity and prominent vessels near the myometrium (Figure 3).

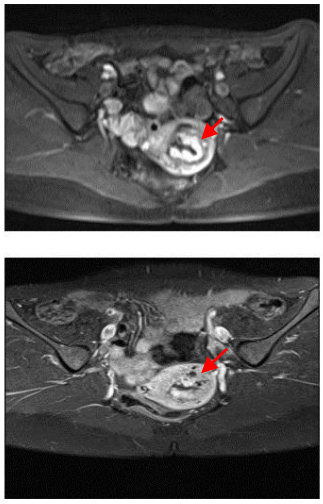

Figure 3. Axial contrast-enhanced fat-saturated T1-weighted MR image shows vascularized mass lesion with obvious enhancement in the uterine cavity and prominent vessels in myometrium (arrows)

Transfusion was done by 2 units of packed red blood cells. With regard to the experience from the first case,

we decided to evaluate uterine cavity by hysteroscopy which again the retained product of conception was observed, and uterine curettage was done successfully. Beta-hCG becomes zero 2 days after curettage and patient discharged without any symptoms.

Discussion

This report presented a pitfall in diagnosis and management of patients with AUB and positive Beta-hCG after first-trimester pregnancy termination.

In the first case, she presented with AUB after first-trimester pregnancy termination by uterine curettage. In one similar article, patients presented with heavy uterine bleeding after the first-trimester termination of pregnancy (13). This difference could be due to the main pathology; since the arteriovenous malformation could be the cause of heavy uterine bleeding. However, in our second case, she presented with heavy uterine bleeding which complicated her condition with anemia. So, ROPC can cause both light and heavy uterine bleeding. Our patients had persistent low level of beta-hCG (<100 IU/L) several weeks after pregnancy termination. In similar reports, patients were assessed because of persistent low-level serum beta-hCG after first-trimester miscarriage. Like our patient, almost many of them had serum beta-hCG level less than 100 IU/L (13-15).

Our cases were young women (22 and 29-year-old) with low parity, so fertility preservation was an important issue for them. In similar reports also many cases were young women with low parity (13-15).

Vaginal ultrasonography and color Doppler assessment in both cases showed normal size uterus and adenex, but prominent vascular mass with slow flow in grayscale ultrasonography and marked vascularity in color Doppler is seen near the fundal part extending focally in full thickness of myometrium. These characteristics raised suspicion of malignant lesions like PSTT or invasive molar pregnancy. One study reported hypervascular lesion with even some extension to myometrium after first-trimester pregnancy termination which their final diagnosis was arteriovenous malformations (AVM) (13). In another case report, a woman with heavy menstrual bleeding was admitted, and both color Doppler ultrasonography and MRI revealed diffuse hypervascular intramural lesion is imitating AVM, but after hysterectomy, the final pathology report was RPOC (16). Despite using multi-diagnostic modalities for diagnosis of such patients, it could be challenging especially in young cases, so conservative approach like hysterectomy may be more prudent in this situation, since this procedure has the advantages of diagnosis and treatment, especially in RPOC cases.

Imaging feature of RPOC can closely imitate those of an AVM or GTN; so, hysteroscopy is one of the best non-invasive procedures which may be helpful in diagnosis and selecting appropriate treatment especially in young patients who desire to preserve their fertility.

References

1. Cole LA, Khanlian SA, Muller CY. Detection of perimenopause or postmenopause human chorionic gonadotropin: an unnecessary source of alarm. Am J Obstet Gynecol 2008;198:275.e1.
2. Khanlian SA, Cole LA. Management of gestational trophoblastic disease and other cases with low serum levels of human chorionic gonadotropin. J Reprod Med 2006;51:812-8.
3. Cole LA, Butler SA, Khanlian SA, Giddings A, Muller CY, Seckl MJ, et al. Gestational trophoblastic diseases: 2. Hyperglycosylated hCG as a reliable marker of active neoplasia. Gynecol Oncol 2006;102:151-9.
4. Cunningham FG, Leveno KJ, Bloom SL, Spong CY, Dashe JS, Hoffman BL, et al. Williams Obstetrics. 24th ed. New York: McGraw-Hill Education, 2014:671.
5. Trinder J, Brocklehurst P, Porter R, Read M, Vyas S, Smith L. Management of miscarriage: expectant, medical, or surgical? Results of randomised controlled trial (miscarriage treatment (MIST) trial). BMJ 2006;332:1235-40.
6. Abbasi S, Jamal A, Eslamian L, Marsousi V. Role of clinical and ultrasound findings in the diagnosis of retained products of conception. Ultrasound Obstet Gynecol 2008;32:704-7.
7. van den Bosch T, Daemen A, Van Schoubroeck D, Pochet N, De Moor B, Timmerman D. Occurrence and outcome of residual trophoblastic tissue: a prospective study. J Ultrasound Med 2008;27:357-61.
8. Jain K, Fogata M. Retained products of conception mimicking a large endometrial AVM: complete resolution following spontaneous abortion. J Clin Ultrasound 2007;35:42-7.
9. Takeda A, Koyama K, Imoto S, Mori M, Nakano T, Nakamura H. Conservative management of placenta increta after first trimester abortion by transcatheter arterial chemoembolization: a case report and review of the literature. Arch Gynecol Obstet 2010;281:381-6.
10. Wang YL, Su TH, Huang WC, Weng SS. Laparoscopic management of placenta increta after late first-trimester dilation and evacuation manifesting as an unusual uterine

mass. J Minim Invasive Gynecol 2011;18:250-3.
11. Rein DT, Schmidt T, Hess AP, Volkmer A, Schöndorf T, Breidenbach M. Hysteroscopic management of residual trophoblastic tissue is superior to ultrasound-guided curettage. J Minim Invasive Gynecol 2011;18:774-8.
12. Hamerlynck TW, Blikkendaal MD, Schoot BC, Hanstede MM, Jansen FW. An alternative approach for removal of placental remnants: hysteroscopic morcellation. J Minim Invasive Gynecol 2013;20:796-802.
13. Darlow KL, Horne AW, Critchley HO, Walker J, Duncan WC. Management of vascular uterine lesions associated with persistent low-level human chorionic gonadotrophin. J Fam Plann Reprod Health Care 2008;34:118-20.
14. Cole LA. Phantom hCG and phantom choriocarcinoma. Gynecol Oncol 1998;71:325-9.
15. González Aguilera B, Syrios P, Gadisseur R, Luyckx F, Cavalier E, Beckers A, et al. Persistent low levels of serum hCG due to heterophilic mouse antibodies: an unrecognized pitfall in the diagnosis of trophoblastic disease. Gynecol Endocrinol 2016;32:439-41.
16. Kido A, Togashi K, Koyama T, Ito H, Tatsumi K, Fujii S, et al. Retained products of conception masquerading as acquired arteriovenous malformation. J Comput Assist Tomogr 2003;27:88-92.