

## Case Report

**Encysted retained products of conception in myometrium following surgical management of first-trimester miscarriage: A case report**Kalana Amarasekara<sup>1\*</sup>, Champika Gihan<sup>1,2</sup><sup>1</sup>Teaching Hospital, Peradeniya, Sri Lanka.<sup>2</sup>Department of Obstetrics and Gynaecology, Faculty of Medicine, University of Peradeniya, Sri Lanka.**Abstract**

Enhanced myometrial vascularity in colour Doppler during ultrasound scan is not an uncommon finding following first-trimester miscarriage. When it is persistent and associated with abnormal uterine bleeding or persistently elevated serum beta hCG, suspicion of a significant pathology such as gestational trophoblastic neoplasm and acquired uterine arterio-venous malformation should be raised. Encysted retained products of conception in myometrium is a rare complication following a miscarriage, which has a similar clinical presentation to enhanced myometrial vascularity, but often the diagnosis is difficult.

**Keywords:** Retained products of conception, Enhanced myometrial vascularity, Gestational trophoblastic neoplasm**Copyright:** © 2022 Amarasekara K *et al.*  This is an open-access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.**Funding:** None**Competing interest:** None**Received:** 25.12.2021**Accepted revised version:** 01.03.2022**Published:** 23.03.2022**\*✉ Correspondence:** [akalanag@gmail.com](mailto:akalanag@gmail.com),  <https://orcid.org/0000-0003-0504-8188>

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**Introduction**

Encysted retained products of conception is a rare complication following surgical management of miscarriage. It can present as abnormal uterine bleeding, abdominal pain and persistent elevation of serum  $\beta$ - human chorionic gonadotropin ( $\beta$ -hCG) (1). Ultrasonically, it appears as a well-demarcated area of enhanced myometrial vascularity when colour Doppler is applied. In this report, we present a case of a woman who presented with persistently elevated serum  $\beta$ -hCG and bleeding per vagina following the repeated evacuation of retained products of conception (ERPC) for the management of first-trimester fetal loss.

**Case report**

A 30-year-old para one with a previous vaginal delivery two years back presented at the period of amenorrhea of 12 weeks in her second pregnancy,

with a missed miscarriage to a tertiary care centre. In the ultrasound scan, there was a gestational sac of 35 mm without a fetal pole. Initially, it was managed medically with misoprostol which was unsuccessful and eventually, she underwent ERPC two times during the initial hospital admission of one-week duration.

Two days following discharge from the hospital, she got readmitted with persistent bleeding per vagina and pelvic pain. There was heterogeneous hyperechoic material inside the uterine cavity in ultrasound scan, which was thought to be retained products of conception and there was a suboptimal drop in serum  $\beta$ -hCG level. Serum  $\beta$ -hCG values checked 48 hours apart were 11357 mIU/ml, 7884 mIU/ml and 6475 mIU/ml. She was managed conservatively with analgesics, and at the time of discharge serum,  $\beta$ -hCG was 600 mIU/ml.

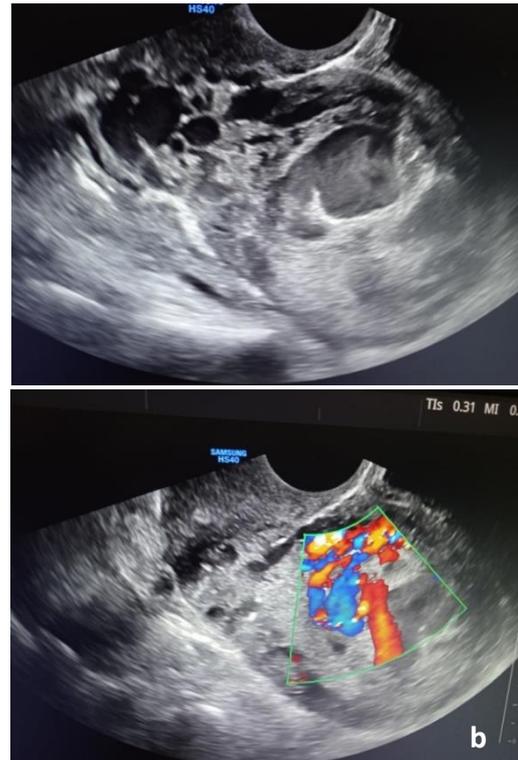
After one month from the initial ERPC, she got admitted again with vaginal bleeding and elevated serum  $\beta$ -hCG level of 2643 mIU/ml. Subsequent values of serum  $\beta$ -hCG 48 hours apart were 1806 mIU/ml and 2257 mIU/ml. Transvaginal ultrasound scan showed mixed echogenic material inside the endometrial cavity and within the myometrium with enhanced vascularity in colour Doppler.

This uterine lesion with elevated  $\beta$ -hCG was thought to be either due to gestational trophoblastic neoplasm, acquired uterine arterio-venous malformation or retained products of conception in the uterine cavity. Ultrasound-guided ERPC was performed again, and the histology confirmed normal products of conception. Although her serum  $\beta$ -hCG level dropped from 1489 mIU/ml to 682 mIU/ml, two weeks following ERPC it was a suboptimal drop, and an ultrasound scan with colour Doppler revealed a well-demarcated area of enhanced myometrial vascularity in the anterior wall (Figure 1b). The decision was taken to proceed with magnetic resonance imaging (MRI) with pelvic arteriogram and venogram by the multidisciplinary team, and it was suggestive of an arterio-venous malformation or gestational trophoblastic involving the myometrium. Her serum  $\beta$ -hCG level was 60 mIU/ml, and at the time, she was asymptomatic. Following the multidisciplinary team (MDT) discussion, she underwent surgical excision of the uterine lesion. There was a well-demarcated lesion in the anterior wall of the uterus measuring 3×3×4 cm within the myometrium. It was soft in consistency and was not as vascular as expected (Figure 2a). Histology of the lesion was suggestive of an encysted retained product of conception (Figure 2b). Her serum  $\beta$ -hCG level became normal within one week.

## Discussion

Enhanced myometrial vascularity with persistently elevated serum  $\beta$ -hCG level following pregnancy can be a presentation of gestational trophoblastic neoplasm or retained products of conception.

There are a few case reports on retained products of conception mimicking arterio-venous malformation, which raise the doubt that retained products of conception can have variable colour Doppler appearances, including a highly vascularized appearance (2,3). For this reason, diagnosis is difficult even with the presence of advanced imaging.



**Figure 1:** (a) Transvaginal ultrasound scan showing a mixed echogenic area in the myometrium; (b) the colour Doppler showing enhanced myometrial vascularity in the anterior wall.



**Figure 2:** (a) Intraoperative finding of well-demarcated lesion in the myometrium; (b) Histological appearance of encysted retained products of conception

Persisting retained products of conception in the endometrial cavity commonly manifests as vaginal bleeding. If it is infected, there can be fever and other features of sepsis (4). Typically, serum  $\beta$ -hCG level falls to an undetectable level over 2-3 weeks in case of retained products (5). Increased myometrial vascularity can be seen in Doppler studies in some cases. This is thought to be due to an excessive trophoblastic invasion of myometrium, causing persisting physiological myometrial arteriovenous shunting or delayed involution of placental implantation site vessels (5).

Similarly, in gestational trophoblastic neoplasm, patients can present with abnormal vaginal bleeding and with symptoms due to metastasis (6). However, about 50% of gestational trophoblastic neoplasm follows non-molar pregnancy such as spontaneous abortion, ectopic pregnancy, or a term pregnancy (7)

In this patient, histology reports of repeated ERPCs were not suggestive of gestational trophoblastic neoplasm but on the other hand, persistently elevated serum  $\beta$ -hCG was not compatible with retained products of conception *per se*, which made

a diagnostic dilemma. Since there was no conclusive diagnosis even with advanced imaging, it was planned to get the histological diagnosis following surgical excision of the lesion. The abdominal approach was chosen due to risk the of haemorrhage during the procedure.

The histological diagnosis of the well-demarcated non-vascular lesion was encysted retained products of conception, which has very sparse evidence in the literature. Theoretically, this can occur when products of conception get trapped inside the myometrium during instrumentation of the uterus during ERPC. It may retain some of its blood supply while surrounding myometrium may go through the healing process, which can give rise to this kind of presentation and the histological finding.

This report of an atypical presentation of a rare complication following a common procedure emphasizes the need for multidisciplinary input and input from clinical expertise for diagnosis and successful management of such condition. It also highlights the importance of a definitive histological diagnosis before deciding on a specific treatment.

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