Tokur *et al. Egypt J Radiol Nucl Med (2021) 52:287*
https://doi.org/10.1186/s43055-021-00666-z

Egyptian Journal of Radiology and Nuclear Medicine

CASE REPORT Open Access

# A rare cause of postpartum vaginal bleeding

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## Abstract

**Background:** Invasive mole is a trophoblastic disease (GTD) caused by trophoblast cells invading the myometrium during pregnancy. The GTD range also includes mole hydatidiform, choriocarcinoma, and placental site trophoblastic tumor (PSTT). Invasive moles are most common following molar pregnancies; however, they can even rarely occur after a full-term birth. Despite the fact that pathology is the only way to make a clear diagnosis, clinic and radiologic evaluation can be helpful. We wanted to highlight a rare incidence of invasive mole following a healthy full-term delivery in this case.

**Case presentation:** A 28-year-old female patient presented with intermittent prolonged severe vaginal bleeding for 2 weeks after a term healthy vaginal delivery. In workup, beta human chorionic gonadotropin levels (b-hCG) value was 7540 mIU/ml. After suspicion of gestational trophoblastic neoplasm (GTN), the patient was sent to ultrasonography (US) and magnetic resonance imaging (MRI). GTN was confirmed by radiological and clinical findings, and a conclusive diagnosis of an invasive mole was made histopathologically.

**Conclusion:** Invasive mole should be considered in the differential diagnosis in patients with postpartum bleeding and a persistently high b-hCG level after a healthy term delivery.

**Keywords:** Gestational trophoblastic disease (GTD), Invasive mole, Healthy pregnancy

## Background

Gestational trophoblastic disease (GTD) is a set of diseases caused by aberrant trophoblast growth, which can lead to gestational trophoblastic neoplasia (GTN). Choriocarcinoma, invasive mole, epithelioid trophoblastic tumor (ETT), and placental site trophoblastic tumor are among the GTNs (PSTT). Invasive mole is caused by abnormal trophoblastic cells invading the body. It most usually occurs after a postmolar pregnancy; however, it can also occur after a full-term delivery. After a molar pregnancy, prolonged vaginal bleeding and elevated b-hCG levels are common clinical findings. Definitive diagnosis is made by pathology, but GTN is also diagnosed based on clinic and radiologic findings.

This case was presented since invasive moles are uncommon after full-term delivery. Choriocarcinoma is the most common type of GTN after full-term delivery, and it can only be distinguished from invasive mole pathologically.

## Case presentation

A 28-year-old woman was admitted to the hospital after having intermittent prolonged severe vaginal bleeding for 2 weeks following a healthy term vaginal delivery. Her anamnesis revealed no significant findings. Her vitals (body temperature, pulse rate, respiration rate, blood pressure) were stable during the test. On abdominal palpation, the uterus was larger than usual. On speculum examination, there was only minor bleeding. Based on laboratory test results, hemoglobin levels were low (7 gr/dl) and beta human chorionic gonadotropin levels (b-hCG) were high (7.540mIU/ml). According to these findings, the patient was referred to the radiology department with an initial diagnosis of GTN. The patient was first evaluated transabdominally with a 3.5 MHz convex transducer on a gray-scale, color, and pulsed Doppler ultrasound machine

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(Toshiba Xario). On US, a heterogeneous mass with several hypoechoic foci is seen in the uterus. There are also a number of tiny anechoic cystic areas present. The mass had a lot of vascularity on Doppler ultrasonography (Fig. 1). Following that, magnetic resonance imaging (MRI-1.5 T, Siemens Magnetom Aera) including axial and coronal fat-saturated T2-weighted images (WI), pre- and post-contrast fat-saturated T1WI, and diffusion-weighted images was also performed. On MRI, 29 × 25x17 mm sized, heterogeneous mass with predominantly peripheral signal void loss secondary to increased vascularization is seen on axial T2-weighted image (WI) (Fig. 2). On axial post-contrast T1 WIs, the lesion had significant enhancement (Fig. 3). On sagittal post-contrast T1 WI, residual myometrial thickness at site of invasion was 11 mm (Fig. 4). Partial resection of the uterus was completed. Pathological examination revealed abnormal (dysmorphic) chorionic villi and extravillous trophoblast invasion through blood vessels and myometrium. The decidua in between was nil. Trophoblasts proliferate rapidly and exhibit mild atypia. The patient was diagnosed with invasive mole based on clinical, radiological, and pathologic findings.

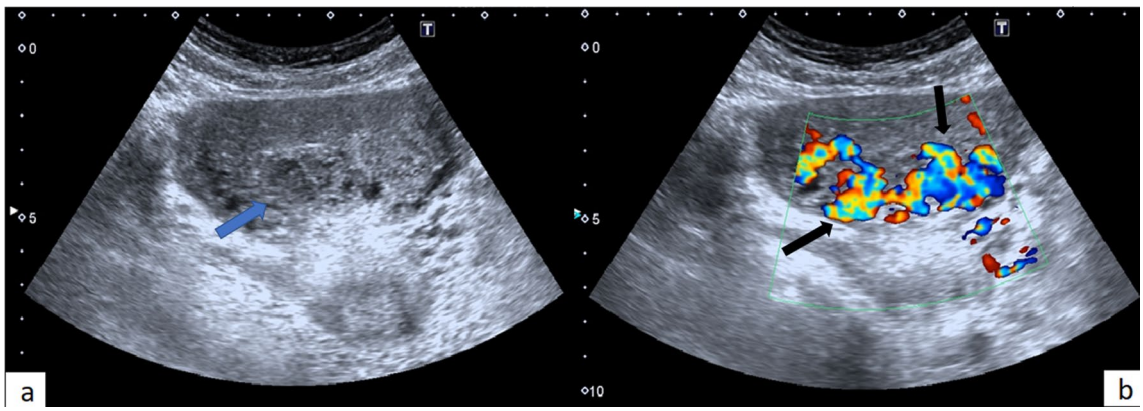


**Fig. 1** Axial US (**a**) and CDUS (**b**) images. In the myometrium, there is a mass with multiple hypoechoic foci (**a**, blue arrow). On a CDUS scan, increased vascularity can be noticed (**b**, black arrows)

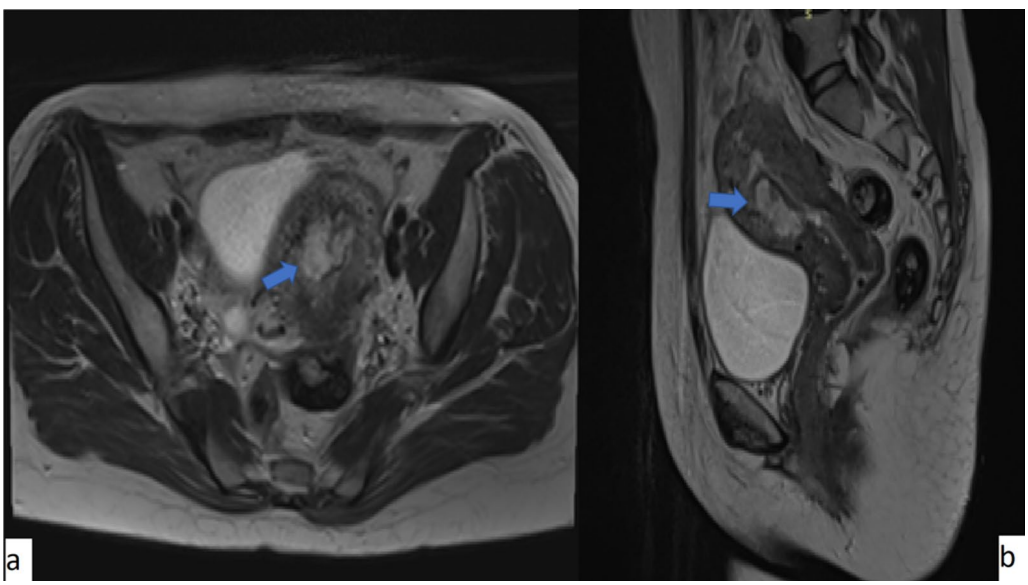


**Fig. 2** In the myometrium, hyperintense lesions can be detected in axial (**a**) and sagittal (**b**) T2WIs (blue arrow)

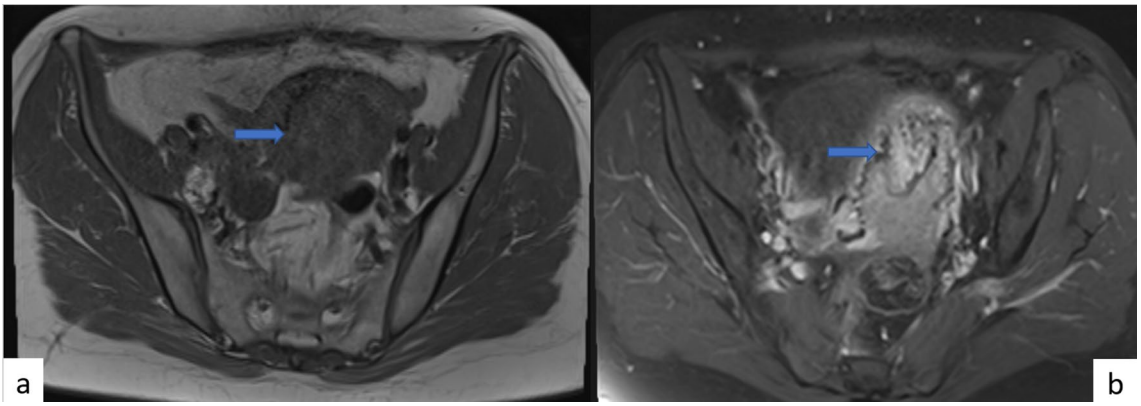


**Fig. 3** Pre and post-contrast axial T1 WI showing the heterogeneous intense enhancement of the mass

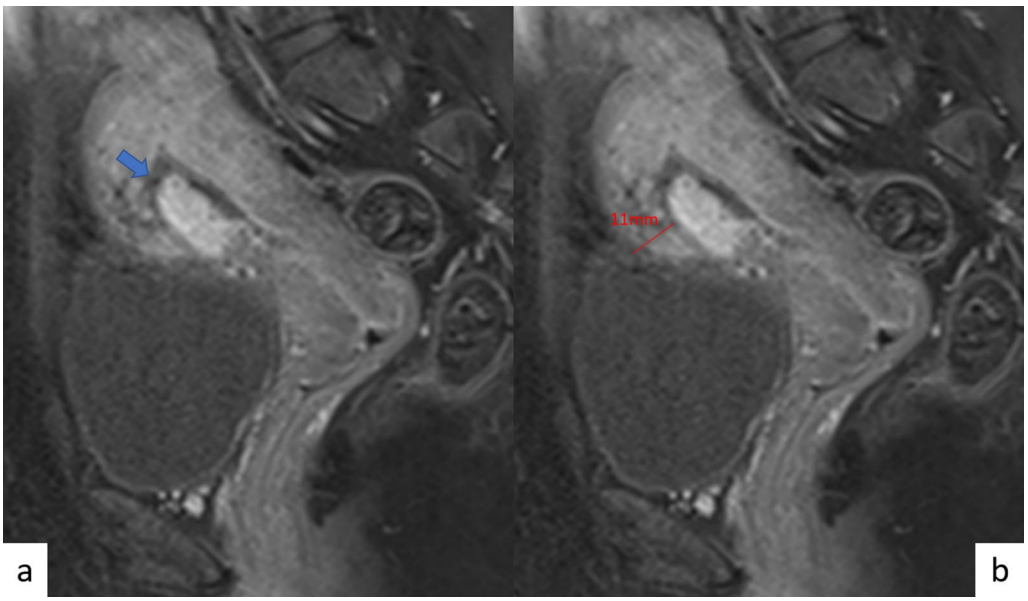


**Fig. 4** **a**, **b** On post-contrast sagittal T1 WI, the lesion's extension into the myometrium can be observed more clearly (blue arrow)

## Discussion

GTD (gestational trophoblastic disease) is a set of diseases caused by trophoblastic cells. Invasive mole, choriocarcinoma, and placental site trophoblastic tumor are also included in this category.

Invasive mole is caused by edematous chorionic villi extending into the myometrium. It is typically locally invasive [1], but metastatic cases have been documented in the literature [2, 3]. It occurs in 1 in every 15,000 pregnancies, and it frequently occurs after a molar pregnancy. It can often be diagnosed without histopathological evaluation, when a patient has vaginal bleeding and prolonged high b-hCG values after postmolar pregnancy [4]. However, histopathologic analysis of the chorionic villi in the myometrium can provide a definitive diagnosis [5]. In comparison with choriocarcinoma and PSTT, it is seen less frequently following a healthy pregnancy [1, 5].

GTNs are characterized by prolonged vaginal bleeding and elevated b-hCG levels in blood testing. The uterine sizes are larger than normal, according to the physical examination. However, postpartum bleeding is a common problem. So GTN may be included in the differential diagnosis when persistent b-hCG increase and prolonged vaginal hemorrhage are present [4]. After clinical suspicion, ultrasonography (US) should be the initial imaging modality used. In grayscale ultrasonography, GTNs

cannot be separated from one another and appear as a heterogeneous mass in the myometrium. Small anechoic focal regions, which signify bleeding, cysts, or necrosis, are common. Color Doppler ultrasonography (CDUS) examination reveals increased vascularity in the tumor. Ultrasound is followed by MRI, which is a more sensitive diagnostic tool. GTNs appear on MRI as a mass lesion in the myometrium that is T1WI isointense, T2WI hyperintense, and surrounded by a hypointense rim. Increased vascularity can be seen on T2WI as loss of signal voids in the mass. After intravenous gadolinium administration, the mass enhances intensely. In the evaluation of extrauterine invasion and lymph nodes, MRI surpasses ultrasonography [5].

Due to the hypervascular pattern, arteriovenous malformation and interstitial pregnancy must also be evaluated in the differential diagnosis. GTN can be distinguished from the other by the absence of fetal material in the uterus and high β-hCG values in the laboratory test [2].

Chemotherapy is the first line of treatment for invasive disease, and it should be continued until three consecutive normal b-hCG values are observed. After the b-hCG levels return to normal, three further rounds of chemotherapy are given to lower the chances of recurrence. If bleeding cannot be managed, hysterectomy can be performed [3].

## Conclusion

In cases with the prolonged postpartum bleeding, invasive mole, which is rare, should be included in the differential diagnosis, as in our case.

#### Abbreviations

B-hCG: Beta human chorionic gonadotropin; CDUS: Color Doppler ultrasound; ETT: Epithelioid trophoblastic tumor; GTD: Gestational trophoblastic disease; GTN: Gestational trophoblastic neoplasm; MRI: Magnetic resonance imaging; PSTT: Placental site trophoblastic tumor; US: Ultrasonography; WI: Weighted image.

#### Acknowledgements

Not applicable.

#### Authors' contributions

This study was directed and coordinated by OT and SA as the principal investigator, provided conceptual and technical guidance for all aspects of the project. OT, SA, EF, and FDG planned and performed the analysis of the MRI and CT images. Literature search was suggested and executed by OT and FDG. Design of the study was done by OT and SA. The manuscript was written by OT and commented on by all authors. All authors read and approved the final manuscript.

#### Funding

Nil.

#### Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

#### Ethics approval and consent to participate

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.

#### Consent to participate

The authors certify that they have obtained all appropriate patient consent forms. In the form, the legal guardian has given his consent for images and other clinical information to be reported in the journal. The guardian understands that names and initials will not be published and due efforts will be made to conceal patient identity, but anonymity cannot be guaranteed.

#### Consent for publication

Yes, written consent to publish this information was obtained from the study participant.

#### Competing interests

The authors declare that they have no competing interests.

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Received: 12 July 2021 Accepted: 18 November 2021
Published online: 26 November 2021

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