

AMSER Case of the Month

July 2026

34 year-old female G2P1001 with vaginal spotting

Bailey Kelson, MS4

Spencer Fox Eccles School of Medicine at the University of Utah

April Griffith, MD

University of Utah Health

Patient Presentation

- HPI

- A 34 year old G2P1001 at EGA 9w3d by LMP presented to the Early Pregnancy Assessment Clinic for 1 week of light vaginal spotting and occasional cramping

- Past Medical History

- Depression, difficulty with spontaneous conception

- Past Surgical History

- Breast augmentation, cesarean delivery

- Vitals

- BP 118/77 mmHg; Pulse 98 bpm; Temp 36.8 C (98.2 F)

- Physical Exam

- Gen: well-appearing, no acute distress; Abd: soft, non-distended; GU: normal appearing external genitalia with no external lesions or masses

What imaging should be ordered for first trimester vaginal bleeding?

Select the applicable ACR Appropriateness Criteria¹

First Trimester Vaginal Bleeding

Variant: 1 First trimester vaginal bleeding. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
US pelvis transabdominal	Usually Appropriate	○
US pelvis transvaginal	Usually Appropriate	○
US duplex Doppler pregnant uterus	May Be Appropriate	○
MRI pelvis without IV contrast	May Be Appropriate	○
MRI pelvis without and with IV contrast	Usually Not Appropriate	○
CT pelvis with IV contrast	Usually Not Appropriate	☢☢☢
CT pelvis without IV contrast	Usually Not Appropriate	☢☢☢
CT pelvis without and with IV contrast	Usually Not Appropriate	☢☢☢☢

What would have been appropriate to order

The evaluating physician did a clinic-performed Pelvic Transvaginal POCUS

Findings (unlabeled)

Clinic-Performed Transvaginal Pelvic US

Gyn Fertility
C10-3v
22Hz
RS

2D
61%
Dyn R 52
P Off
HGen

Uterus Long

Sac Diam1 2.39 cm
Sac Diam2 0.63 cm

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Uterus Trans

Sac Diam3 0.79 cm

Cul de sac Long

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Uterus Trans

Sac Diam3 0.79 cm

Irregularly shaped sac-like fluid collection in the lower uterine segment, likely gestational sac (measuring 23.99 mm x 6.3 mm x 7.9 mm). Sac size consistent with EGA of 6w0d. No yolk sac visualized.

Heterogenous material with cystic spaces at the fundus, differential includes blood clot, decidualized endometrium, or findings of gestational trophoblastic disease.

Normal uterine echotexture.

Cul de sac Long

No free fluid in the cul-de-sac.

Patient Progress

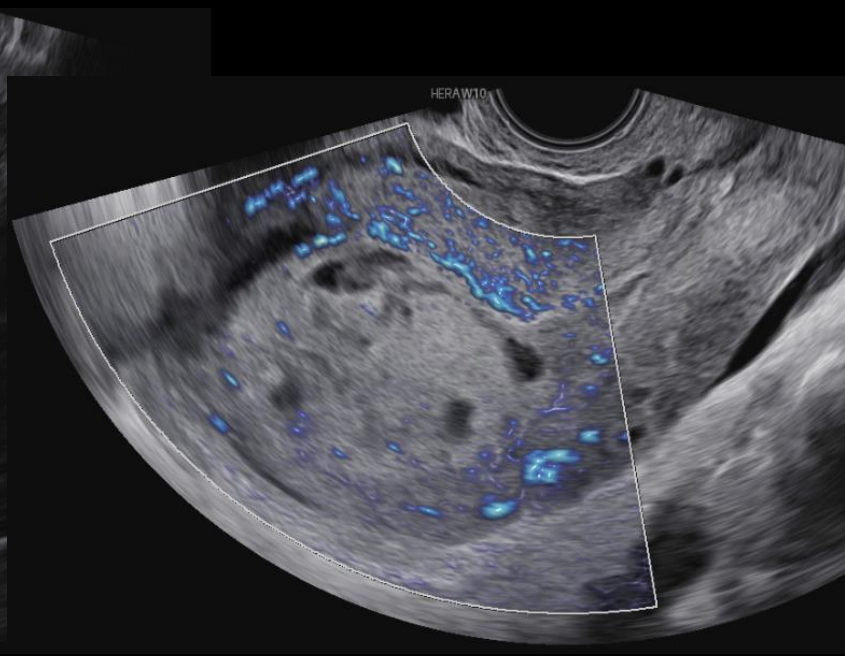
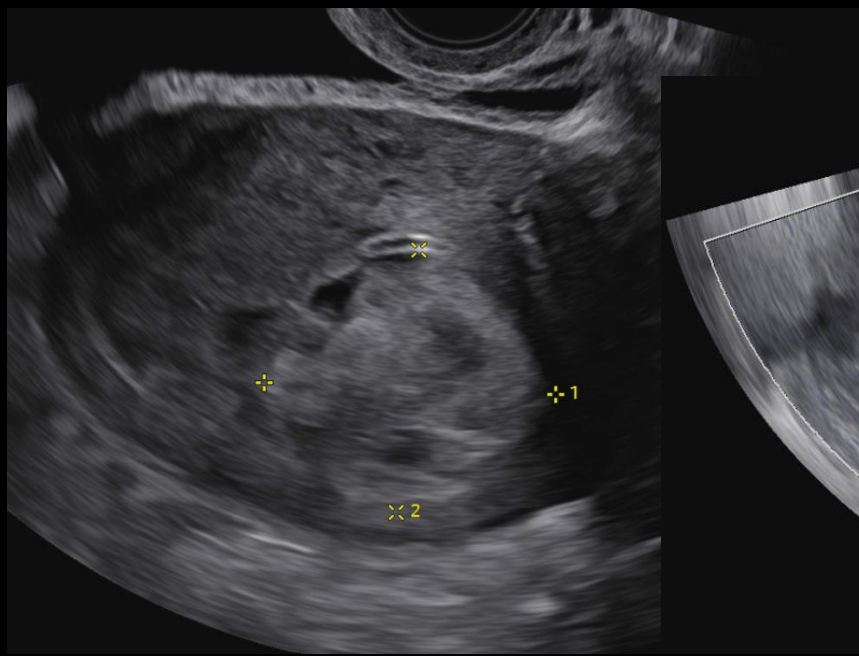
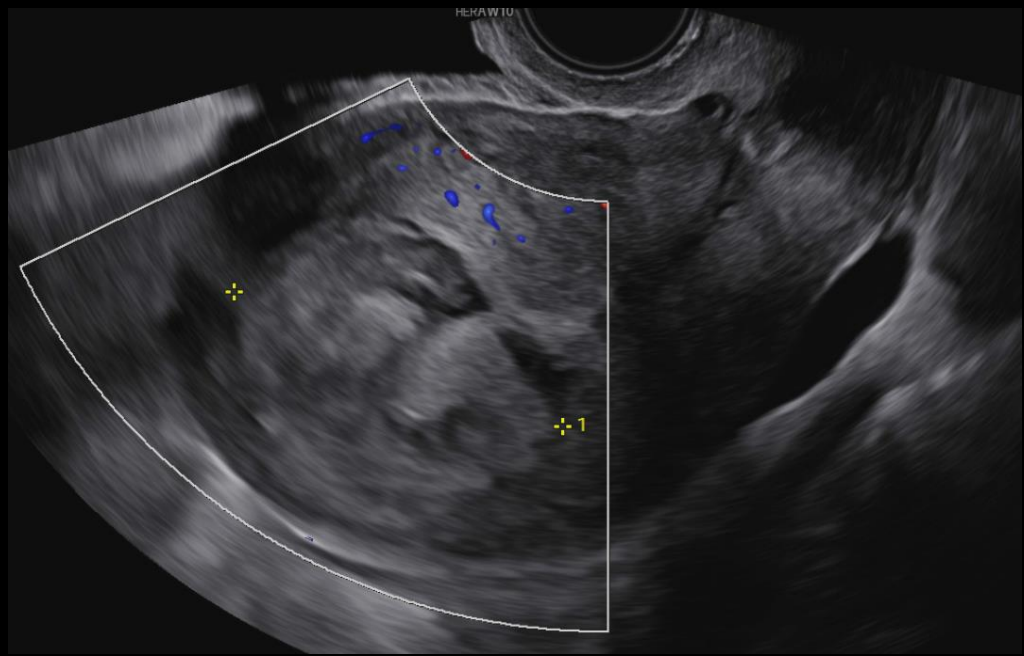
- Pregnancy was highly desired by patient and she desired confirmation of findings before deciding next steps.
- Decided to undergo serial β -hCGs and formal US

Pertinent Labs

- 9 week β -hCG: 113,932 $\rightarrow$ 131,234 (15.2% increase in 48 hours)
 - Expected level at:²
 - 9 weeks: 63,803-151,410
 - 10 weeks: 46,509-186,977

Findings (unlabeled)

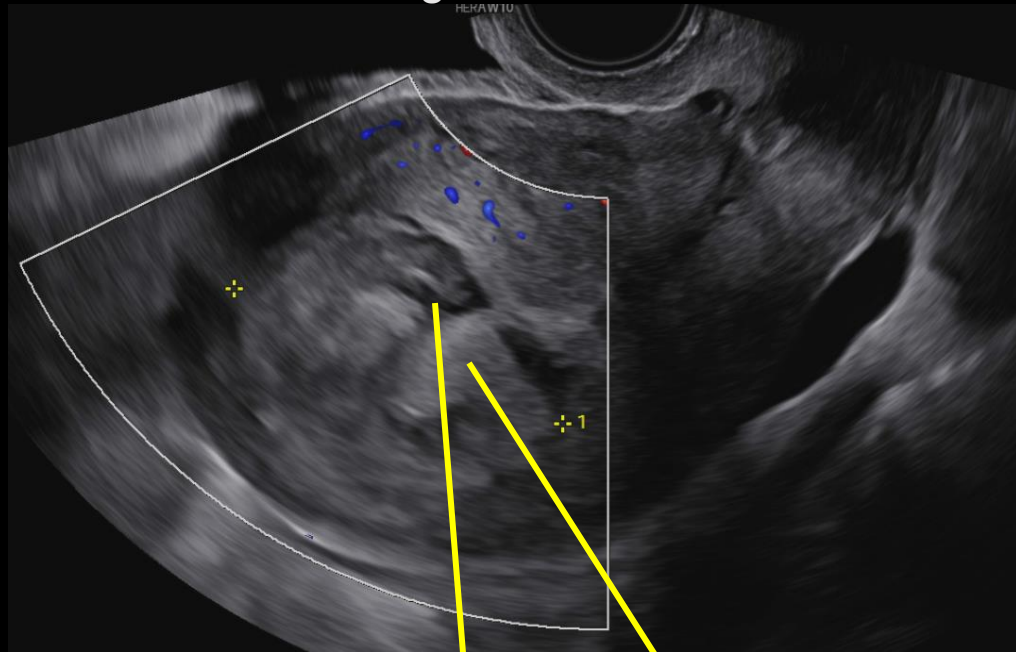
Transvaginal Pelvic US



Findings: (labeled)

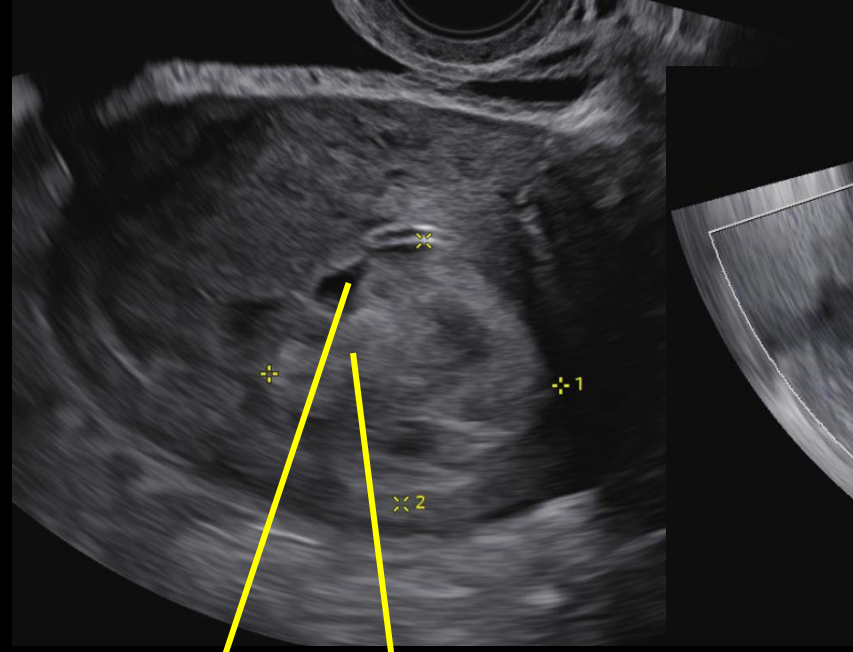
Transvaginal Pelvic US

Doppler ultrasound transvaginal evaluation of the uterus in longitudinal axis



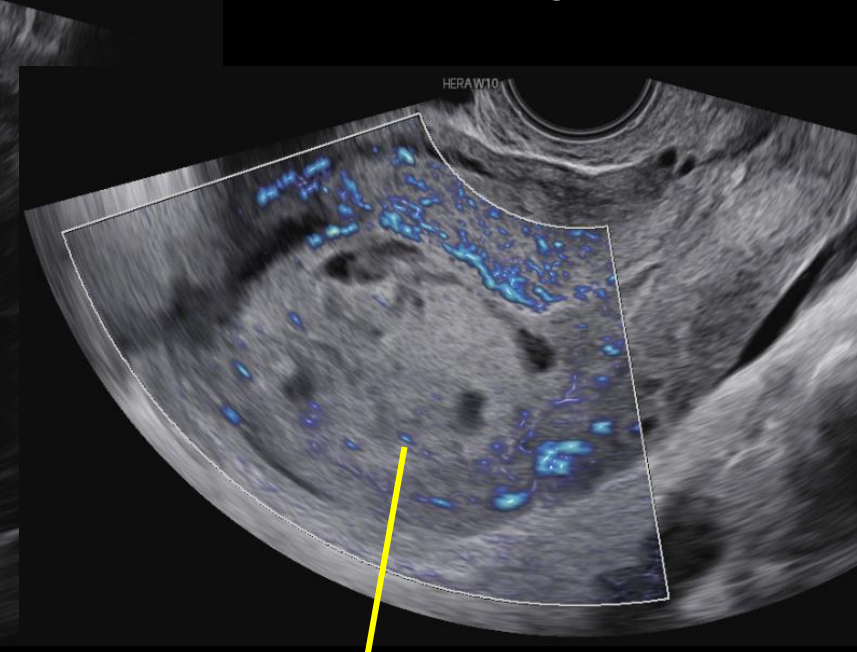
Hypovascular mixed cystic and solid echogenic intracavitary mass measuring 4.9 x 4.1 x 3.7 cm.

Transvaginal evaluation of the uterus in transverse axis



Mixed cystic and solid intracavitary mass.

Transvaginal evaluation of the uterus in longitudinal axis



Microvascular flow in the intracavitary mass.

Pertinent negatives: normal bilateral ovaries without adnexal masses, no intrauterine or extrauterine gestational sac

Patient Progress

- Imaging and laboratory findings in combination were consistent with nonviable pregnancy in setting of gestational trophoblastic disease
- Patient was treated with D&C at 10w5d, on which day β -hCG was >200,000
- Gross specimen demonstrated absence of fetal tissue and copious hydropic villi
- Microscopic evaluation demonstrated p57- abnormal cytotrophoblasts and abnormal villi characterized by marked enlargement, cistern formation, and abnormal trophoblastic proliferation

Patient Progress

- After initial fall, serial β -hCGs demonstrate new rise 3 weeks s/p D&C

		3/9/2026	3/18/2026	3/25/2026	4/1/2026	4/8/2026	4/15/2026
	Latest Ref Rng & Units	11:55 AM	10:28 AM	9:58 AM	9:51 AM	10:52 AM	10:45 AM
Beta-hCG Qnt Tumor Marker	0 - 5 IU/L	72899  	1850  	405  	138  	122  	168  

What imaging should be ordered for GTD s/p
D&C with subsequent rise in β -hCG?

Select the applicable ACR Appropriateness Criteria³

Gestational Trophoblastic Disease

Variant: 2 Staging and risk assessment: suspected or established diagnosis of gestational trophoblastic neoplasia (GTN).

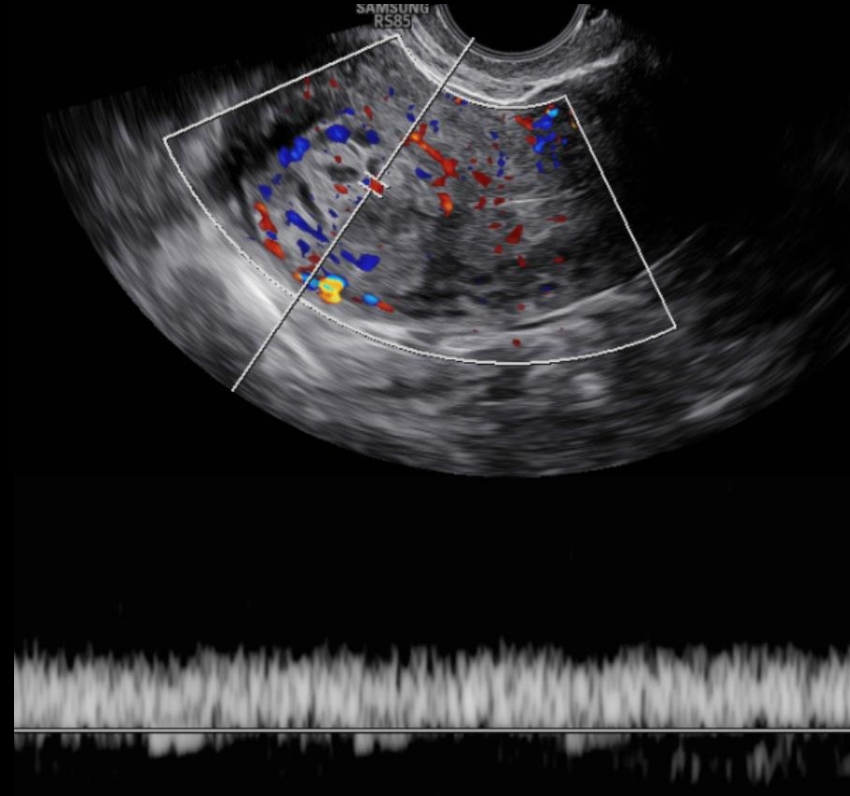
Procedure	Appropriateness Category	Relative Radiation Level
US duplex Doppler pelvis	Usually Appropriate	0
US pelvis transabdominal	Usually Appropriate	0
US pelvis transvaginal	Usually Appropriate	0
Radiography chest	Usually Appropriate	☢
MRI pelvis without and with IV contrast	Usually Appropriate	0
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
CT chest with IV contrast	Usually Appropriate	☢☢☢
MRI head without and with IV contrast	May Be Appropriate	0
MRI pelvis without IV contrast	May Be Appropriate (Disagreement)	0
CT chest without IV contrast	May Be Appropriate	☢☢☢
CT head with IV contrast	May Be Appropriate	☢☢☢
FDG-PET/CT skull base to mid-thigh	May Be Appropriate	☢☢☢☢
MRI head without IV contrast	Usually Not Appropriate	0
CT abdomen and pelvis without IV contrast	Usually Not Appropriate	☢☢☢
CT chest without and with IV contrast	Usually Not Appropriate	☢☢☢
CT head without and with IV contrast	Usually Not Appropriate	☢☢☢
CT head without IV contrast	Usually Not Appropriate	☢☢☢
CT abdomen and pelvis without and with IV contrast	Usually Not Appropriate	☢☢☢☢

What would have been appropriate to order

The evaluating physician ordered CXR and transvaginal pelvic US

Findings (unlabeled)

CXR and Transvaginal Pelvic US



Findings: (labeled)

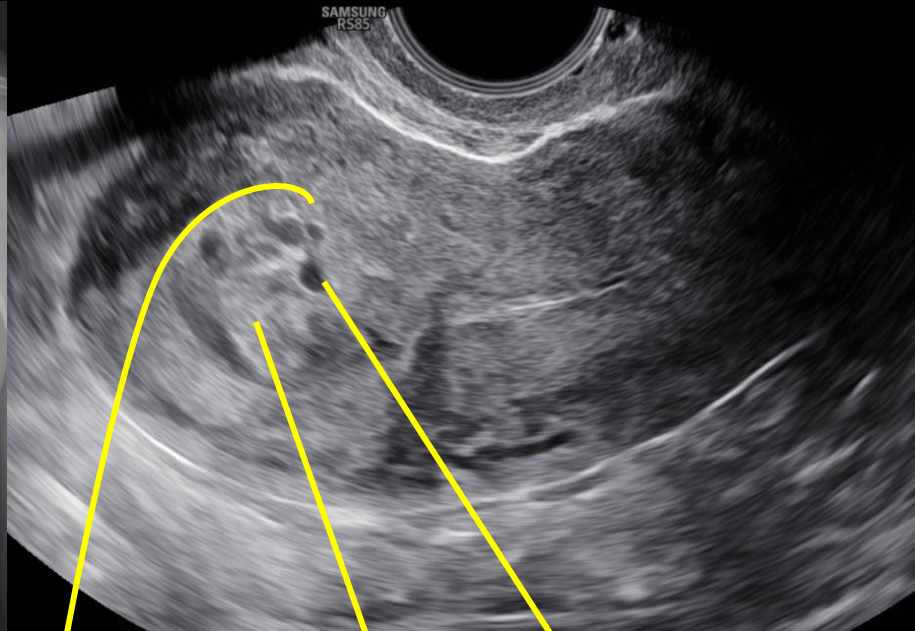
CXR and Transvaginal Pelvic US

AP Chest XR



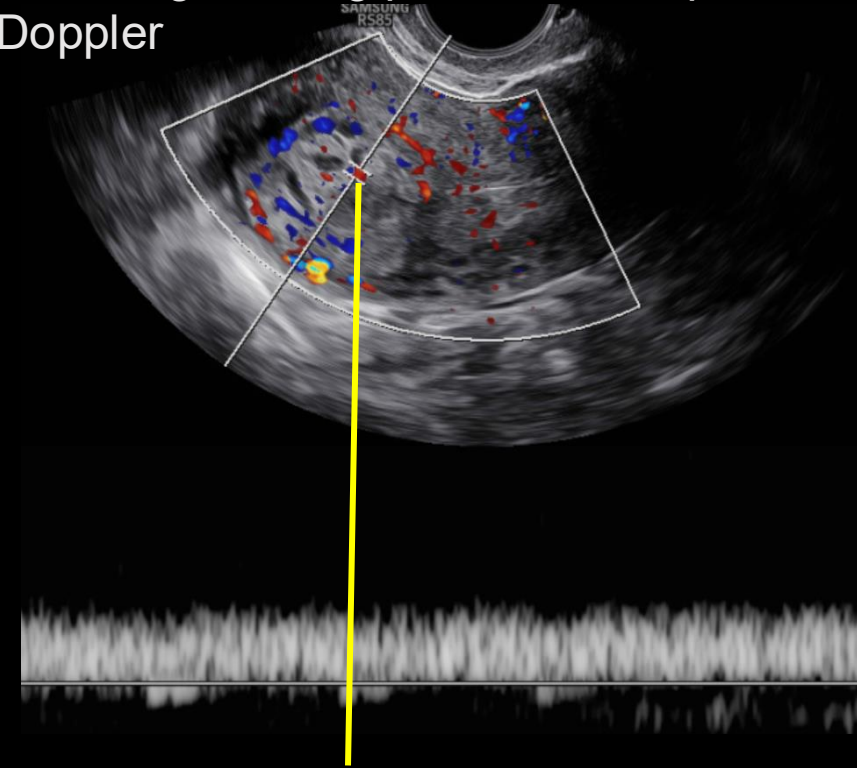
Normal AP Chest without pulmonary consolidation or mass.

Transvaginal long pelvic US



Hyperechoic solid and cystic mass within the endometrium with invasion into the myometrium, suggestive of persistent gestational trophoblastic disease.

Transvaginal long pelvic US w/ spectral Doppler



Marked vascularity of solid components of the mass on Doppler.

Final Dx:

Complete hydatidiform molar pregnancy with post-molar gestational trophoblastic neoplasia

Patient Progress & Case Discussion

- **Treatment & progress:**

- Patient was treated with repeat D&C, started on cOCP and again monitored for falling β -hCG levels weekly, which ultimately fell to 0 11 weeks s/p repeat D&C
 - Plan for weekly β -hCG until undetectable for 3 weeks, then monthly β -hCG for 12 months⁴

- **Prognosis:**

- Even in GTD requiring repeat D&C, prognosis is excellent, with ~40% of low-risk, non-metastatic patients achieving cure with repeat D&C alone, and ~60% achieving cure with the addition of single-agent chemotherapy (methotrexate or dactinomycin)^{4,5}
- Risk of recurrence after β -hCG falls to 0 is 0.35%

Case Discussion

- Definitions⁴

- **Gestational trophoblastic disease:** umbrella term for disorders of abnormal proliferation of placental trophoblastic tissue, including conditions considered benign, potentially malignant, and malignant
- **Complete hydatidiform mole:** a benign form of GTD arising from entirely paternal genetic material that contains no fetal tissue and entirely abnormal placental tissue
- **Post-molar gestational trophoblastic neoplasia:** a malignant recharacterization of benign or potentially malignant GTD based on persistently elevated beta-hCG, or histopathologic/radiographic evidence of metastatic disease

Case Discussion

- Etiology⁴

- Poorly understood, but known to arise from aberrant fertilization events that are incompatible with development of normal fetus and placenta
 - I.e. Normal ovum fertilized by 2-3 sperm, or empty ovum fertilized by either 1 sperm that self-duplicates or 2 sperm

- Epidemiology⁴

- 1-2 per 1,000 pregnancies in North America and Europe
- Pregnancy at very young or advanced reproductive ages
- Risk increases with prior molar pregnancy (1-2% of pregnancies after 1 mole, and 15-20% after 2)

- Differential diagnosis⁴

- Threatened abortion, early pregnancy loss, partial mole, placental mesenchymal dysplasia

Case Discussion

- **Clinical features of complete hydatidiform mole^{6,7}**
 - **Symptoms:** vaginal bleeding, excessive uterine size, hyperemesis, anemia, pre-eclampsia, hyperthyroid symptoms (due to thyrotropic activity of β -hCG)
 - **Laboratory:** markedly elevated β -hCG (often >100,000 IU/L), low TSH, elevated fT4, low Hgb (from prolonged vaginal bleeding)
 - **Pathology:** grossly hydropic villi with absent fetal tissue
 - **Micro/immunohistochemistry:** market circumferentially hyperplastic trophoblast, edematous villous stroma with absent blood vessels, and absent nuclear p57 staining in cytotrophoblasts and villous stromal cells
- **Imaging features⁷**
 - **TVUS:**
 - Thickened, irregular endometrium with complex, multicystic, hypervascular “swiss cheese” endometrial mass without fetal tissue, +/- adjacent sonolucent hemorrhage, +/- bilateral multiloculated theca-lutein cysts
 - Only ~50% of CHM will have visible cysts in 1st trimester
 - Doppler demonstrates high-velocity, low-resistance flow mass vascularity

References:

1. American College of Radiology. ACR AC Portal: First Trimester Vaginal Bleeding. Acr.org. Published 2026. Accessed May 21, 2026. <https://gravitas.acr.org/ACPortal/GetDataForOneTopic?topicId=118>
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4. Horowitz NS, Eskander RN, Adelman MR, Burke W. Epidemiology, diagnosis, and treatment of gestational trophoblastic disease: A Society of Gynecologic Oncology evidenced-based review and recommendation. *Gynecologic Oncology*. 2021;163(3):605-613. doi:<https://doi.org/10.1016/j.ygyno.2021.10.003>
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