Pre-operative Optimisation And Surgical Management Of Gestational Trophoblastic Disease In A Peri-menopausal Woman: A Case Report

Jacqueline Holland BMSC MD

Mater Mothers' Hospital

Introduction

- Gestational trophoblastic disease (GTD) is a rare group of tumours arising from abnormalities in fertilization causing abnormal proliferation of placental trophoblastic tissue and may be benign or malignant.[1]
- GTD affects 1 in 1000 pregnancies with incidence higher at extremes of the reproductive spectrum, i.e. <15 and >45years[2] and prior molar pregnancy.
- This case follows a peri-menopausal woman who presented with early pregnancy symptoms with possible last menstrual period 2 weeks prior.
- Ultrasound showed an intrauterine heterogenous multi-cystic mass with no definable fetal pole or yolk sac.
- Multi-disciplinary management imperative pre-operatively as GTD carries increased risk of haemorrhage, hypertension, liver and kidney dysfunction and hyperthyroidism associated thyroid storm secondary to elevated hCG.
- Histology confirmed a complete hydatiform mole (CHM) that was non-invasive. Ongoing care was provided by QLD Trophoblastic Disease Centre.

Patient Profile

- 52-year-old female
- **Medical History:** Asthma
- **Medication History:** Nil
- **Allergies:** Chicken, potato, latex
- **Surgical History:** Appendicectomy. LLETZ
- **Family History:** Nil significant
- **Social History:** Nil EtOH, nil smoker, nil recreational drugs
- **Obstetric and Gynecological History:**

  G12P11 – 11 x uncomplicated SVD at term, last pregnancy in 2020 (aged 48)

  G12- this encounter: Molar Pregnancy

  Irregular cycles, thought last menstrual period was 1 week prior

  Cervical Screening Test up to date and normal

Case Summary

GP

- 6 weeks intractable nausea/vomiting and light PV bleeding 24 hours. Initial workup had positive HCG on point of care testing and pelvic ultrasound showed a heterogenous multicystic intrauterine mass 10x12x5cm with no definable fetal pole or yolk sac concerning for gestational trophoblastic disease. (Fig 1)
- The patient was referred to local health service early pregnancy unit for management, however subsequently transferred to tertiary facility with ICU due to concerns with risk of haemorrhage and medical stabilisation at time of operative management.

Tertiary Facility

- Biochemically on admission, TFT revealed hyperthyroidism with TSH <0.01 and T4 47 (with no antibodies present) secondary to elevated HCG of 1.2millionIU/L.
- CTCAP -enlarged uterus (10x9x13cm) with cystic intrauterine mass with focal density representing haemorrhage, 14mm nodule at tail of spleen- splenic artery aneurysm, Sub-pleural pulmonary nodules 4mm: thought to be non-metastatic
- Endocrinology: pre-operative thyroid stabilisation with carbimazole, stress dosed steroids and propranolol to decrease risk of thyroid storm in the peri-operative period
- MDT involving gynaecology, gynaeoncology, anaesthetics and endocrinology recommended total abdominal hysterectomy and bilateral salpingectomy with planned ICU admission postoperatively.
- Given age and future fertility not desired, patient in agreeance with advice and wishing to proceed.
- Initial operation was uncomplicated with EBL 600mls with no post operative thyroid instability, she was discharged 7 days post operatively.
- Histopathology showed a complete hydatiform mole that was non-invasive.
- Patient returned 20 days post operatively with PV bleeding. CTAP showed vaginal vault haematoma with arterial extravasation requiring uterine artery embolization and IV antibiotics to cover for possible super-imposed infection. Incidental finding of small sub-segmental pulmonary embolism in lower lobe for which she received therapeutic anticoagulation with enoxaparin to bridge to apixaban.
- Follow-up through QLD GTD centre showed her hCG has significantly dropped with 3 successive weekly levels normal. She required no chemotherapy at this point. As she had a CHM, monthly surveillance for a further six months was advised as per RANZCOG recommendations.[2]

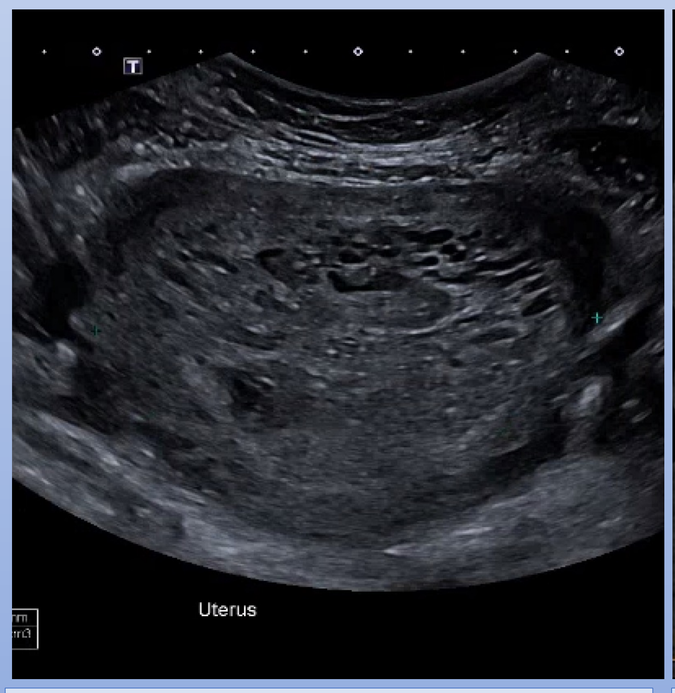

Figure 1: Ultrasound : Multicystic intrauterine mass 10x12x5cm with no definable fetal pole or yolk sac

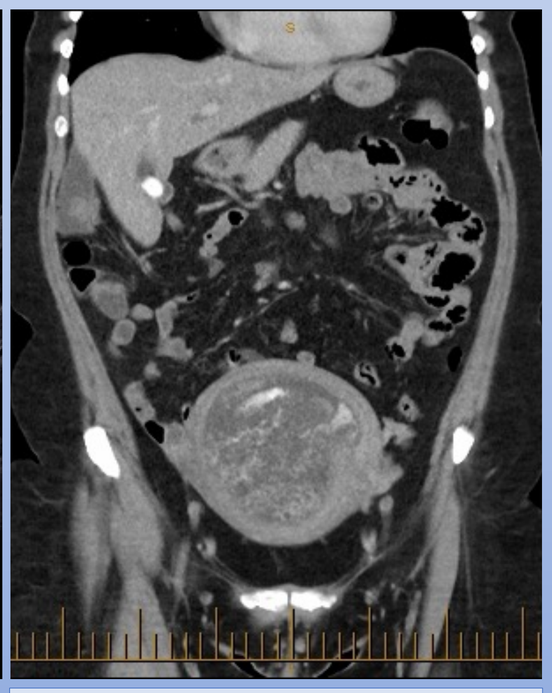

Figure 2: CTCAP shows enlarged uterus 10x9x13cm with cystic intrauterine mass with focal density representing haemorrhage

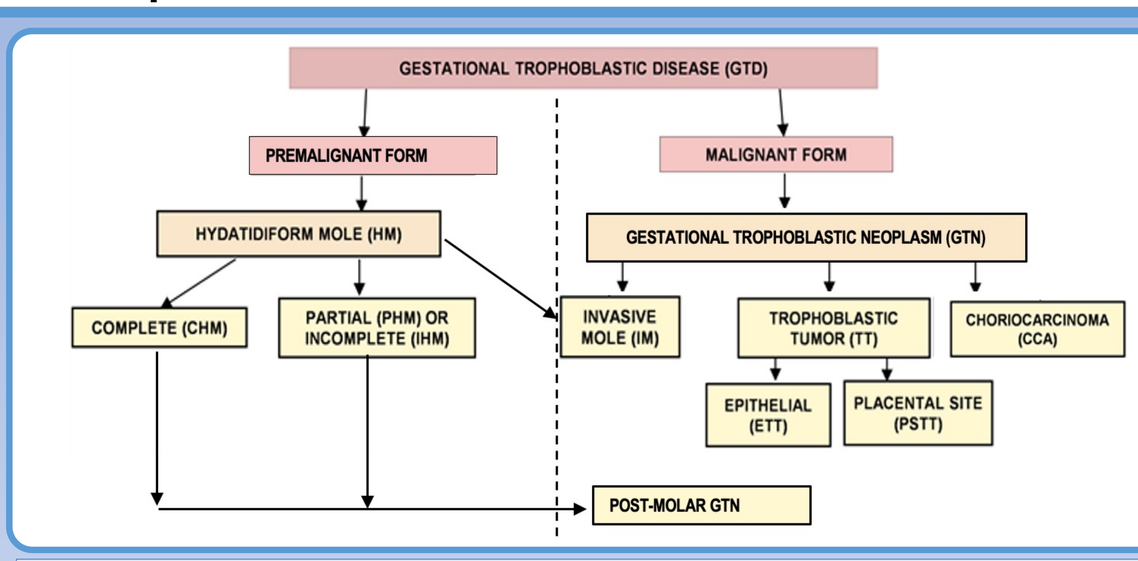

Figure 3: Spectrum of Gestational Trophoblastic Disease

Discussion

Multidisciplinary coordination is required to ensure comprehensive and individualised care for patients with GTD to optimize peri-operative outcomes, mitigate medical complications, and address potential malignant sequelae. GTD comprises complete or partial moles, both of which though benign can carry malignant potential. Malignant diseases, include invasive mole, choriocarcinoma, placental site trophoblastic tumour and epithelioid trophoblastic tumour. All of which can metastasize and be fatal if not treated in a prompt efficacious manner. (Fig 3)

Clear communication with the multidisciplinary team is crucial to manage peri-operative risks. Secondary medical complications of GTD are hypertension, respiratory distress, thyrotoxicosis and significant haemorrhage. Untreated thyroid crisis is known to be fatal in the perioperative period, particularly in the setting of emergency surgery. [3] Our management was comparable to other documented case reports in the literature with treatment prior to surgery involving carbimazole, propranolol and high dose intravenous steroids. [4] Treatment rationale was, carbimazole inhibits the synthesis of T4 and T3 while high dose IV steroids reduce conversion of T4 to T3 conversion.[4] Propranolol is the preferred agent for beta blockade in hyperthyroidism and thyroid storm due to the additional effect of blocking peripheral conversion inactive T4 to T3. [5]

GTD manifests with an array of symptoms, including uterine enlargement, vaginal bleeding, hyperemesis, hypertension before 20 weeks gestation, anaemia, respiratory distress, and hyperthyroidism, although early ultrasound practices may mask clinical presentations. [6]

Clinical diagnosis is based on history, physical examination, pelvic ultrasound and serum hCG quantification (>100,000 IU/L). [7] Hysterectomy, often favoured over dilation and curettage for patients no longer desiring childbearing, does not eliminate metastatic risks.

The rationale for hysterectomy in GTD management encompasses various factors:

Malignant Progression Minimisation: GTD can evolve into gestational trophoblastic neoplasia (GTN), a malignant condition. Whilst suction curettage is the preferred treatment for CHM, for patients with fertility requirements total hysterectomy may be appropriate for perimenopausal patients who have completed their family unit.[8] Hysterectomy can eradicate residual trophoblastic tissue and the risk of local muscular layer infiltration [9], diminishing the risk of GTN. Progression from CHM to GTN occurs in 20% cases, [10] with greater risk when initial hCG >100,000IU/L, theca-lutein cysts >;6cm, enlarged uterus and age greater than 40years. [11] In over 50 years, malignant progression post-evacuation is 56.3% and hysterectomy is recommended. [12]

Reduced Chemotherapy Requirement: For women who do not desire future fertility a hysterectomy can reduce the need for chemotherapy by up to 80% but not eliminated. [13] Careful surveillance still remains.

Effective and Long-term Treatment: By excising the uterus, where trophoblastic tissue can persist and cause recurrent or persistent disease, a hysterectomy provides a definitive and efficacious treatment modality for GTD. The risk of a second molar pregnancy is about 1%, the risk increases to 15-20% after two hydatidiform moles. [14] Hysterectomy significantly mitigates the risk of GTD recurrence, thereby enhancing long-term patient outcomes.

Conclusion

Gestational Trophoblastic Disease requires multidisciplinary management due to its significant peri-operative risks. Diagnosis relies on accurate history, examination, sonographic imaging, and hCG levels. Whilst management with suction curettage is common, hysterectomy should be considered for those no longer desiring fertility or at high risk of malignancy. Treatment with hysterectomy minimises malignant progression, reduces likely need for chemotherapy, and provides long-term risk reduction of recurrence by eliminating trophoblastic tissue.

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Acknowledgements

Queensland Xray

Dr Jacqueline Holland
MD BMSci CerWH
jacqui.holland@mater.org.au

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