ULTRASOUND EVALUATION OF GTD AND ITS MIMIC

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OUTLINE

- Gestational Trophoblastic disease
- Retained products of conception

GESTATIONAL TROPHOBLASTIC DISEASE (GTD)

- Premalignant GTD (Hydatiform mole)
- Malignant
  - Gestational Trophoblastic Neoplasia (GTN)
  - Invasive Mole
  - Choriocarcinoma (villous trophoblast)
  - Placental Site Trophoblastic Tumor (PSTT) (interstitial trophoblast) < 1% of GTD
  - Epithelioid Trophoblastic Tumor

EPIDEMIOLOGY

- Molar pregnancy (80%): 1 in 1000
- GTN (20%)
  - Choriocarcinoma: 1 in 30,000
    - 50% follow mole
    - 25% pregnancy termination
    - 25% term or preterm pregnancy
- Risk Factors
  - < 20 and > 40
  - Oral Contraceptive Pills
  - History of molar pregnancy
**Molar Pregnancy**

- Complete: fertilization of an ovum devoid of maternal chromosomes → No Fetus
- Vaginal bleeding, large uterus and
  - Significant ↑β-hCG (50%)
- Partial: normal fertilization but by two sperms → fetus may carry to 2nd trimester
- Signs of abortion
  - β-hCG not significantly elevated

**Molar Pathology**

- Complete
  - Trophoblast hyperplasia
  - Hydropic villi
  - Abnormal vessels
- Partial
  - Same as above but patchy

**Molar Pregnancy Ultrasound**

- Complete
  - No fetus (rare normal fetus with twin)
  - Mass
  - Cystic spaces (cluster of grapes)
  - Theca lutein cysts < 50%
- Partial
  - Embryo/fetus/abnormal sac
  - Cystic spaces but to a less degree

**Complete Mole**

- β-hCG 190,000
β-hCG 90,000

β-hCG 62,000

COMPLETE MOLE & TWIN

GESTATIONAL THROPHOBLASTIC NEOPLASIA (GTN)

- 20% of complete mole, <10% of partial
- Persistently elevated β-hCG (2–3 weeks)
- Persistence of β-hCG after 6 months
- Time of evacuation of mole does not affect outcome
- In twin molar pregnancy pregnancy can continue
ULTRASOUND FINDINGS

- Heterogenous mass
- ± muscular invasion
- Hypo to hypervascular
- Uterus size
- PI < 1 predictor of poor outcome
- No difference in different histology

INVASIVE MOLE

- Placental Site Trophoblastic Tumor (PST)
  - More indolent
  - LN metastasis
  - Lower β-hCG
**OUTLINE**

- Gestational Trophoblastic disease
- Retained products of conception

**RPOC PREVALENCE**

- 3-5% of vaginal delivery
- 17% of 1st. Trimester
- 40% of 2nd. Trimester

Van Den Bosch et al. JUM 2008
**RPOC PATHOLOGY**

**DEFINITION**

- Chorionic villi invading decidua basalis

**ULTRASOUND FINDINGS**

- Endometrial mass
- Poor definition of outer contour
- Focal vascularity
  - Sensitivity: 94%
  - Specificity: 67%
- Thick endometrium > 10mm
  - Sensitivity: 80%
  - Specificity: 20%

*Atri et al. JCU 2011*

**MANAGEMENT**

- Observation: 65% - 80%
- Prostaglandin E1: 95%
- D&C

*Current Opinion in OB & Gyne 2006*
RPOC (Hyalinized Villi)

GTN vs. RPOC
GTN (N=17), RPOC (N=14)

- Myometrial epicentre: OR 28
- Deep myometrial invasion: OR 20
- Mass size > 3.45cm: OR 9

Betel, Atri et al. JUM 2006

RPOC
Zero β-hCG

ZERO β-HCG (Post Misop)

D&C Chorionic Villi
ZERO β-HCG (Post Misop)

RPOC
VS “AVF/AVM”

ZERO β-HCG (Post Misop.)

D&C Hyalinized Villi

NO CHORIOVIC VILLI
On FU D&C

β-hCG = 1500
CHORIONIC VILLI
SAME DAY D&C

MANAGEMENT
VASCULAR RPOC (N=30)

- RI: 0.38 (0.20 - 0.61)
- PSV: 63 (20 - 106) cm/s
- 73% observational management
- 27% Embolization (persistent heavy bleeding)
  - PSV > 83cm/s  P > 0.05

Timmerman et al. Ult Obstet Gynec 2003

RPOC
Technical Challenge
Early Mole solid
Complete - Fetus
Incomplete + Fetus

Late Mole Cystic
Complete - Fetus
Incomplete + Fetus

RPOC ± significant vascularity may exist with zero β-hCG

RPOC vascularity spectrum includes highly vascular RPOC and can be treated ± embolization
Thank You