INSTRUCTIVE OBSTETRIC CASES

I have no conflicts to disclose

Thank you!

Case presentation

- 35 year old G3P1011
- 13 weeks by prior sonogram
- Ultrascreen (first trimester screen)
Exencephaly/anencephaly sequence

- Characterized by absence of the cranial vault with the presence of a variable amount of amorphous supratentorial brain tissue
- The “unprotected” neural tissue is eroded due to mechanical & chemical factors with advancing gestation

Sonographic features

- First trimester
  - Exencephaly; neural tissue is still present
  - Abnormal cranial contour
    - Flattened
  - Exposed brain has a lobulated or “spiked” appearance
  - Crown rump length may lag

Acrania-exencephaly sequence

- Differential diagnosis:
  - Encephalocele
    - Cranium is present
    - Usually occipital
    - Neural tissue protrudes through the defect
  - Amniotic band syndrome
    - Asymmetric/eccentric defect
    - May affect multiple body parts
    - Bands may be seen
encephalocele
9 weeks 1 day
Heart rate 165 bpm

encephalocele

Encephalocele; 9 weeks

encephalocele
11 weeks

encephalocele
12 weeks 2 days

encephalocele
17 weeks
Complete asymmetric previa
Amniotic band sequence

11 weeks 3 days

Case presentation

- 23 year old
- G1
- Determination of gestational age

15 weeks
Choledochal cyst

- Congenital cystic dilatation of extrahepatic and/or intrahepatic bile ducts
  - Unilocular cystic right upper quadrant mass
  - Following bile ducts into the cyst confirms the diagnosis
- Variable in size
  - Usually large if diagnosed prenatally

Choledochal cyst

- Most cases are from Asia
  - 1/3 from Japan
- Female > Male
- Associated with biliary atresia
Choledochal cyst; presentation
- Incidental finding in utero
  - May be seen as early as 15 weeks
- Childhood
  - Jaundice
  - Abdominal pain
  - Right upper quadrant mass

Choledochal cyst; prognosis
- If untreated
  - Cholestasis
  - Biliary cirrhosis
  - Liver failure
  - Increased risk of choriocarcinoma
- Early treatment
  - Surgical resection with choledocho/hepaticojejunostomy
  - Good outcome

Choledochal cyst
- Differential diagnosis
  - Umbilical vein varix
  - Color doppler diagnostic
  - Duodenal atresia
  - Later presentation
  - Polyhydramnios
  - GI duplication cyst
    - Located anywhere in the abdomen
    - Ileum most common
- Ovarian cyst
  - Female
  - Third trimester
- Gallbladder duplication
  - Fusiform shape

Case presentation
- 28 yo
- G7P5015
- Determination of gestational age
- Fetal anatomic evaluation

27 weeks 4 days
Umbilical vein varix

scoliosis

“overlapping” index finger

Trisomy 18; Edwards syndrome
- Multiple major anomalies
- Single major anomaly in association with a marker for Trisomy 18
  - Choroid plexus cyst
  - Clenched hand

Trisomy 18
- First trimester
  - Thickened nuchal translucency
40 yo: 12 weeks 3 days

NT = 12 mm

13 weeks

13 weeks

omphalocele

Trisomy 18

Sonoembryology:
Mid-gut herniation, 9w 1d

Physiologic mid-gut herniation

- Normal embryologic development includes rapid elongation of the gut and mesentery as well as marked hepatic growth
- The abdominal cavity is not large enough to accommodate all the intestinal loops
  - Enter the extra-embryonic coelom
  - Return to the abdominal cavity before 12 weeks
Case presentation

- 28 yo G2 P1
- Fetal anatomic evaluation
Ebstein anomaly

- Dysplastic tricuspid valve
  - Tricuspid regurgitation
- Apical displacement of the septal and posterior leaflets of the tricuspid valve
  - "atrialization" of the right ventricle
- Sonographic appearance
  - Markedly enlarged right atrium

Ebstein’s anomaly

- Offer karyotype
  - May be seen in trisomy 21 or 18
- May be seen in mothers with
  - exposure to Lithium
  - Wolff Parkinson White
- Management
  - Fetal echocardiogram
  - Monitor for
    - arrhythmia
    - hydrops
  - Delivery in tertiary center

Right ovary

- 90 mm in length
- 65 mm in transverse

Incidental ovarian mass

- Usually found on routine sonogram
- May present with abdominal pain
  - Cyst rupture
  - Intracystic hemorrhage
  - Torsion
  - Risk is greatest during periods of rapid uterine growth or involution
Incidental ovarian mass

- Most are functional
  - Corpus luteal cysts
- Most common neoplasm
  - Dermoid
  - Serous cystadenoma

Incidental ovarian mass

- Management depends on
  - Gestational age at time of discovery
  - Clinical presentation
  - Sonographic features

Adnexal masses in pregnancy

- With the increased sonographic sophistication, observation is an acceptable option
- Surgery is warranted if
  - Malignancy is suspected
  - The mass is clinically symptomatic
  - There is a risk of torsion
  - Potential to obstruct labor

Adnexal masses in pregnancy

- Reported incidence varies greatly
  - Most incidentally found on 1st trimester exam
  - Overall incidence of malignancy is 1-8%
- Sonographic evaluation allows assessment of risk without compromising maternal or fetal safety
- MRI may be helpful if sonogram is inconclusive
  - Large masses
  - Confirmation of paraovarian vs ovarian origin
  - Tissue characterization

Adnexal masses in pregnancy

- Tumor markers should be used with caution
- CA-125 levels are increased
  - During pregnancy (particularly the 1st trimester)
  - With endometriomas
  - Fibroids
    - Sequential changes may be useful
- AFP, beta hCG & LH levels are affected by pregnancy

Adnexal masses in pregnancy

- The vast majority resolve spontaneously or decrease in size
- Can use similar criteria to non-pregnant patients
Adnexal masses in pregnancy

- Laparoscopy vs laparotomy?

- Laparoscopic advantages
  - Less pain
  - Shorter hospital stay
  - Decreased blood loss
  - Lower infection rates
  - The effects of CO2 of the fetus still questioned

Adnexal masses in pregnancy

- Elective surgery should be performed in the early 2nd trimester
  - Allows time for functional cysts to resolve
  - Least teratogenic effects on the fetus
  - Lowest risk of preterm labor

- Emergency surgery is associated with higher risk of fetal compromise
  - Likely due to underlying etiology

Simple cysts

- Very common
- Unilocular
- Smooth, thin wall
- Anechoic
- May enlarge during the first trimester
- Regress by week 12
- Do not require follow-up if < 7 cm

Hemorrhagic corpus luteal cysts

- Broad spectrum of sonographic appearances
- May mimic many other adnexal masses
  - Doppler to distinguish thrombus from mural excrecence
- Reevaluate at approximately 14 weeks
  - Should resolve or decrease in size

Simple cyst

7 weeks 3 days 6 cm

Hemorrhagic cyst

8 weeks 1 day Right ovary
Hemorrhagic corpus luteal cyst

Iup with dermoid

Iup with dermoid

endometrioma

9 weeks 6 days
8 cm x 6 cm

12 weeks 5 days
Right adnexal mass
12 weeks; 9 x 8 cm

- Borderline cystadenocarcinoma

8-9 week iup

mucinous cystadenocarcinoma

- 7 weeks

Multiple gestation

Living twins

Fetus C

Ovarian hyperstimulation

Hyperreactio luteinalis

- Bilateral ovarian enlargement with multiple theca lutein cysts
- Always associated with pregnancy
- High maternal hCG levels
  - No exogenous hCG
- Self limiting
  - Milder course than hyperstimulation syndrome
Hyperreactio luteinalis

- Thought to result from
  - Hypersensitivity of the ovary to circulating hCG.
  - Excessive production of hCG
- Associated with
  - Multiple gestations
  - Gestational trophoblastic disease
  - Hydrops
  - Normal pregnancies

Adnexal mass in pregnancy management

- If a mass is identified, a repeat study should be scheduled at approximately 14 weeks
- Most corpus luteal cysts will decrease in size or resolve by 14 weeks

Adnexal mass in pregnancy management

- Usually asymptomatic
- Abdominal pain may result from hemorrhage into the cysts
- Torsion or rupture are rare
- Ascites & pleural effusions not usually present
- Self-limited with spontaneous resolution

Case presentation

- 32 yo
- G2 P1001
- Fetal anatomy
Ambiguous genitalia

Confusing appearance of external genitalia
- Perineal region well seen
- many causes

XY fetuses
- Hypospadias
- Epispadias
- microphallus

XX fetuses
- Cliteromegaly
- Fusion of labia
- Prominent labial folds

Ambiguous genitalia with other anomalies

- Aneuploidy
- Syndromes
  - Prader-Willi
  - Smith-Lemli_Opitz
  - Velocardiofacial syndromes
- Congenital adrenal hyperplasia
  - Important treatable cause of ambiguous genitalia
  - >90% 21 hydroxylase enzyme defect

Ambiguous genitalia

- Do not assign gender if uncertain
- Genetic counseling
- Amniocentesis
  - Karyotype
  - Gender
  - Aneuploidy
  - r/o congenital adrenal hyperplasia
- Evaluate for other anomalies

Gender determination

- Penis points in a cranial direction
- Clitoris points in a caudal direction
hypospadias