Obstetrics Content Outline
Obstetrics - Fetal Abnormalities
Effective February 2007
10 – 16%

Fetal Face & Neck
• Fetal facial evaluation is not routinely included in a basic fetal scan
  – family the face should be screened for a coexisting facial malformation.
• Facial anomalies often indicate a specific syndrome or condition

Abnormalities of the Facial Profile
Fetal Face & Neck
• for the Sonographer Evaluating Facial Profile
  – Are the orbits normally spaced
  – Are the nose and nasal bridge clearly imaged
  – any periorbital masses apparent
  – Is the upper lip intact
  – Is the tongue normal size
  – Is the chin abnormally small
  – Are the ears normal size and position

Sonography of the Facial Profile
Fetal Face & Neck
Use midsagittal scans through the face to assess.
• curvilinear surface with differentiation of forehead, nose, lips, and chin
• Cloverleaf skull:
  – Misshaped skull with cloverleaf appearance
• Frontal bossing:
  – Lemon-shaped skull or absent, depressed nasal bridge
• Strawberry-shaped cranium:
  – Bulging of frontal bones
• Masses of nose and upper lip:
  – Distortion of facial profile (look for cleft lip)

Sonography of the Facial Profile
Fetal Face & Neck
• Forehead
  – appears as a curvilinear surface with differentiation of the forehead, nose, lips, and chin.
  – allows diagnosis of anterior cephaloceles
• Skull
  – Cloverleaf skull - misshapen skull with a cloverleaf appearance.
  – associated with skeletal dysplasias (dwarfism) and ventriculomegaly.

Sonography of the Facial Profile
Fetal Face & Neck
• Skull
  – Frontal bossing may be observed in a fetus with a lemon-shaped skull
  – absent or depressed nasal bridge
• Nose and Upper Lip
  – Masses of the nose and upper lip may indicate a cleft lip.
  – Look for continuity of upper lip to exclude a cleft lip and palate
Sonography of the Facial Profile
Fetal Face & Neck

- Tongue
  - Tongue protrusion may suggest macroglossia
  - Congenital micrognathia may be suspected when a small chin is observed

Sonography of the Facial Profile
Fetal Face & Neck

- Mandible
  - Congenital micrognathia should be suspected when a small chin is observed.
  - Appearance of a small chin when imaging the fetal profile.

Sonography of the Facial Profile
Fetal Face & Neck

- Abnormalities of the Orbits
  - Document the presence of both eyes and
  - Assess the overall size of the eyes to exclude microphthalmia and anophthalmia
- Orbital distance measurements
  - Helpful in the diagnosis of hypotelorism or hypertelorism.

Sonography of the Facial Profile
Fetal Face & Neck

- Hypotelorism
  - Decreased distance between the orbits.
  - Measurements of orbital width helpful
  - Associated syndromes/anomalies - holoprosencephaly, microcephaly, craniosynostoses, and phenylketonuria.

Sonography of the Facial Profile
Fetal Face & Neck

- Hypertelorism
  - Abnormally widely spaced orbits
  - Orbital distances that fall above normal ranges for gestational age.
- Abnormal fetal conditions
  - Genetic syndromes
  - Chromosomal anomalies.

Abnormalities of the Nose, Maxilla, Lips, and Palate

Imaging planes
- Lateral coronal view
  - Integrity of the nasal structures in relationship to the orbital rings and maxillae
- Profile plane
  - Contour of the nose, upper and lower lips, and chin is observed.
Abnormalities of the Nose, Maxilla, Lips, and Palate

- modified tangential maxillary view with the transducer angled inferiorly to superiorly through the maxilla demonstrate
  - the nasal septum
  - openings of the nostrils
  - nares
- Evaluation of the nasal triad should assess
  - nostril symmetry
  - nasal septum integrity
  - continuity of the upper lip to exclude cleft lip and palate.

Lip and Palate

- Medial cleft lip
  - incomplete merging of the two medial nasal prominences in the midline
- Oblique facial cleft
  - Failure of maxillary prominence to merge with the lateral nasal swelling, with exposure of the nasolacrimal duct
- Complete bilateral cleft lip and palate:
  - Large gap in upper lip on modified coronal view; nose is flattened and widened

Abnormalities of the Neck

- Neck masses are usually large and obvious
- The most common neck mass is cystic hygroma colli (lymphatic obstruction).
- Malformation of the lymphatic system
  - leads to single or multiloculated lymph-filled cavities around the neck.
- When found, there is a high risk for Turner syndrome (45 X )
- collection of lymph causes distention of the lymph cavities
  - causing fetal hydrops and even fetal death.

Cystic Hygroma

- Brachial cleft cysts are detectable prenatally
  - cystic mass that develops under the skin between the sternocleidomastoid (neck) muscle and the pharynx
- May be small and regress because of alternate routes of lymph drainage.
- Small hygromas may be associated with other fetal anatomic defects
- Large fetal cystic hygromas have typically
  - a dense midline septum divides the hygroma
  - septations noted within the dilated lymph sacs.