1 **Fetal Skeletal Concepts**

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2 **Indications**

- 2 Positive family history
  - Prior affected sibling or parent with skeletal dysplasia
  - Consanguineous parents
- Appearance of bones on prior study

3 **Extremity Concepts**

- 1 Femur
  - Longest dimension
  - Abnormal below 2 standard deviations
- Tibia lateral, Fibula medial
- Foot
  -
- 2 Humerus
  - Longest dimension
- Ulna-longer proximal to fifth digit distally
- Hands

4 **Sonographic Characteristics**

- Evaluate for:
  - Bowing angulations
  - Fractures
  - Thickening
  - Decreased mineralization
    - Absent acoustic shadowing
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5 **Extremities: Hands and Feet**

- Club foot (talipes)
- Rocker bottom foot
- Polydactyly
- Sindactyly
- Arthrogryposis (joint contractures)

6 **Head and Face**

- 1 Head
  - Size
  - Shape
    - Frontal bossing
    - Cloverleaf
    - Brachycephaly
    - craniosynostoses

› Mineralization

2 ⦿ Eyes
› Interorbital distance
› Hyper vs hypotelorism

⦿ Chin
› Micrognathia

⦿ Ears
› Abnormally shaped

⦿

7 **Thorax**

2 ⦿ Thorax
› Measure at 4ch plane
› Length- neck to diaphragm
› Assess ribs-shape and size

⦿

8 **Spine**

⦿ Relative total length
⦿ Correct curvature
⦿ Mineralization
› Echogenic with acoustic shadowing
⦿ Three ossification centers should be seen
⦿ Platyspondyly
› Flattened vertebral body shape
› Reduced distance between endplates

9 **RADIAL RAY DEFECTS**

❖This is associated with a wide variety of syndromes
❖Absence of the distal radius
❖Radial deviation or clubbed hand
❖Often bowing of the ulna
❖Hypoplastic or absent thumb

10 **Amniotic Band Syndrome**

⦿ First trimester rupture of the amnion
› Amniotic band extending from the chorionic surface to the fetal tissue
⦿ May cause
› Amputations of limbs/digits
› Facial or cranial clefting
› Protrusion of uncovered bone
⦿ Restriction of motion

11 **Sonographic evaluation**

⦿ Limp shortening

- Bone contour
- Degree of ossificaiton
- Thoracic circumference and shape
- Hand and foot anomalies
- Evaluate fetal face and head
- Survey for other anomalies

12 **Summary**

Difficult to diagnose
Require systematic imaging
Often requires multiple disciplines to correctly diagnose
Often fetuses die in utero or are stillborn

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