


FETAL FACE ULTRASOUND

MONASH HEALTH OBSTETRIC WORKSHOP 2024




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1

Introduction: Fetal Face

- Orbits
- Palate
- Mandible
- Nose/lips
- Nasal bone
- Ears


Technique
Anatomy
Pathology



2

Technique: Set up

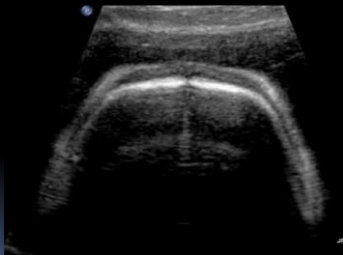
- ❖ Transducers
 - High frequency curvilinear probe
 - Low frequency curvilinear probe
 - 3D/4D volume probe



3

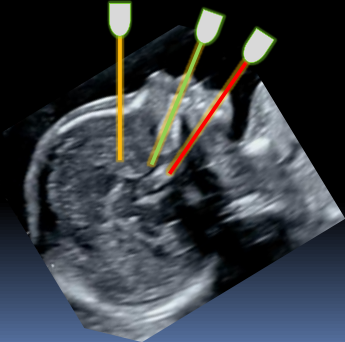
Technique: Axial

- Orbits/Lenses
- Upper lip
- Palate
- Mandible



4

Technique: Axial



5

Technique: Sagittal


- ❖ Profile
- ❖ Forehead
- ❖ Nasal bone
- ❖ Mandible
- ❖ 3D



6

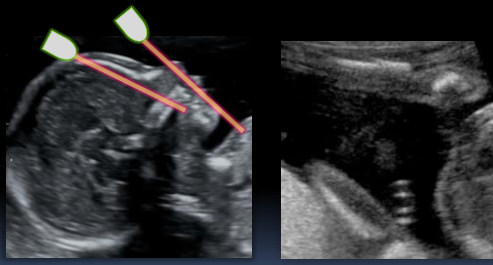
Technique: **Coronal**

- Orbits / Lenses
- Nose
- Lips



7


Technique: **Coronal**



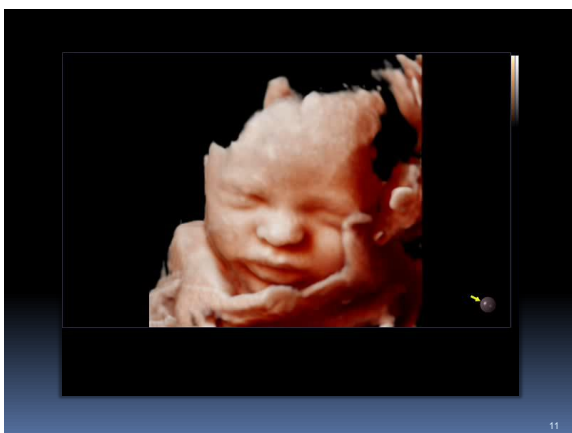
8

Technique: **3D**

- Mid sagittal plane
 - ~30 deg off mid sagittal, chin down
- Pocket of fluid in front of face
- Avoid limbs / cord
- Sweep speed



9

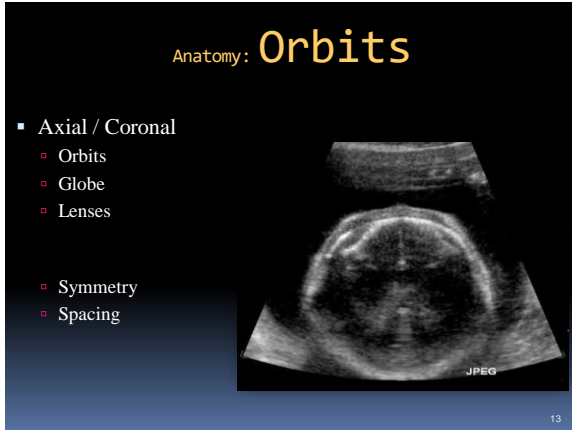


Technique: **Tips**

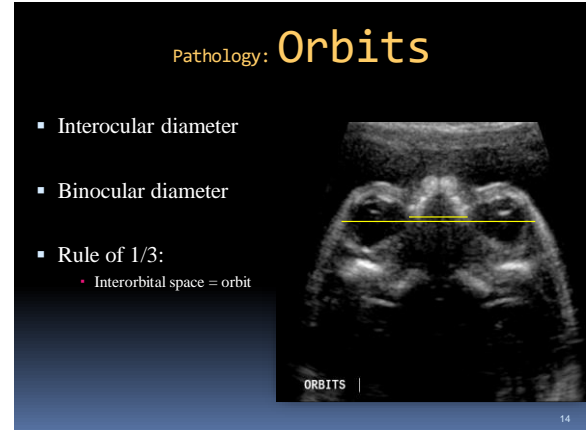
- ❖ Try pushing on the contralateral side to turn baby
- ❖ Ask mum to turn/walk



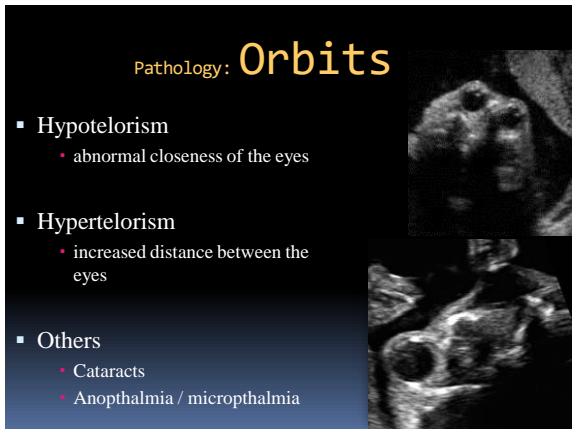
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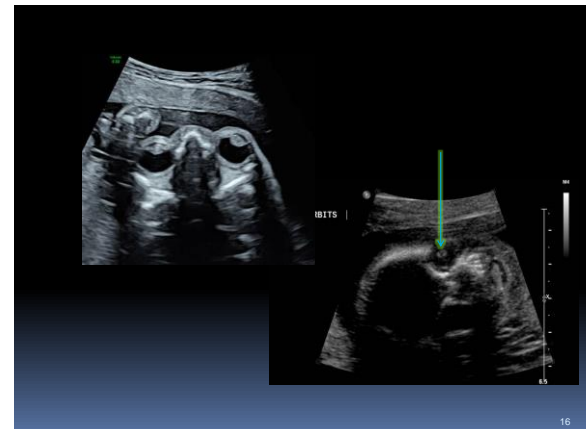
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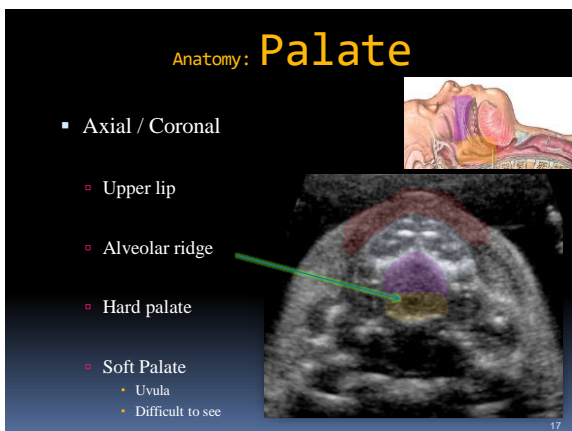
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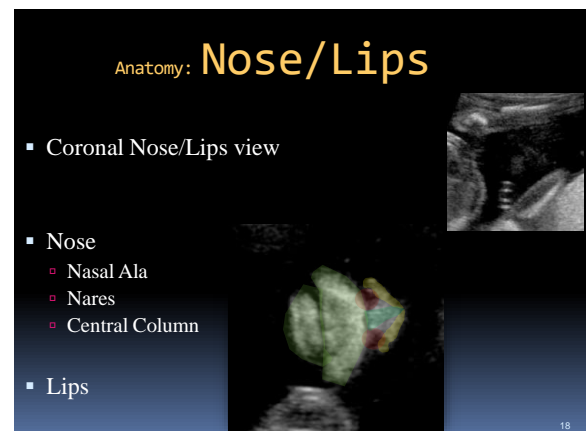
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16



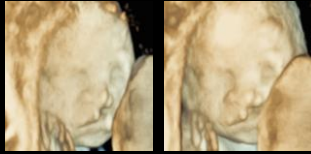
17



18

Cleft Lip / Palate: Background

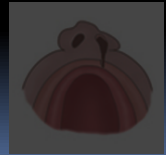
- Incidence – 1:700-1000
- Male: Female – 2:1
- Left > Right
- Associations
 - Chromosomal abnormalities
 - Syndromes



19

Pathology: Cleft Lip/Palate

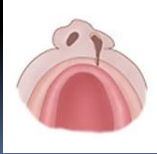
- Types:
 - Cleft palate alone (rare)
 - Cleft lip alone (29%)
 - Unilateral cleft lip and palate (40%)
 - Bilateral cleft lip and palate (27%)
- Midline cleft lip and palate
- Atypical facial clefts



20

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21

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22

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23

Pathology: Cleft Lip/Palate

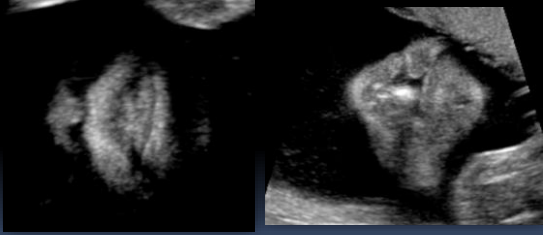
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24

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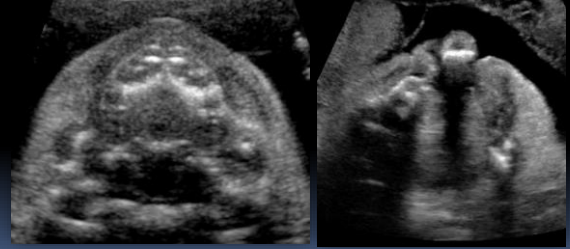
Pathology: **Cleft Lip**



25

25

Pathology: **Cleft Lip / Palate**



26

26

Pathology: **Cleft Lip / Palate**



27

27

Pathology: **Cleft Lip / Palate**



28

28

Pathology: **Cleft Lip / Palate**



29

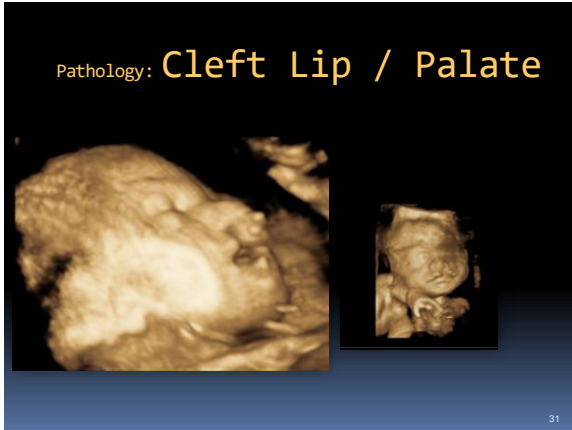
29

Pathology: **Cleft Lip / Palate**



30

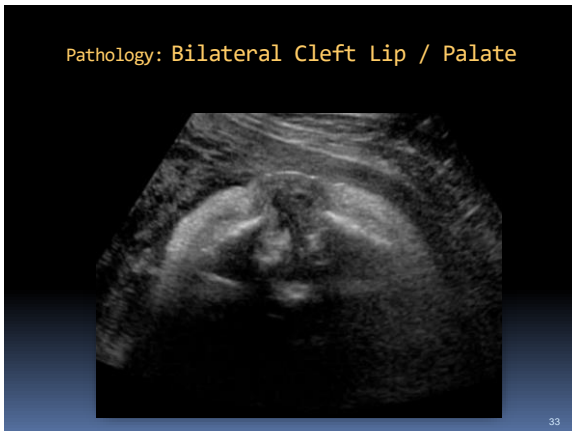
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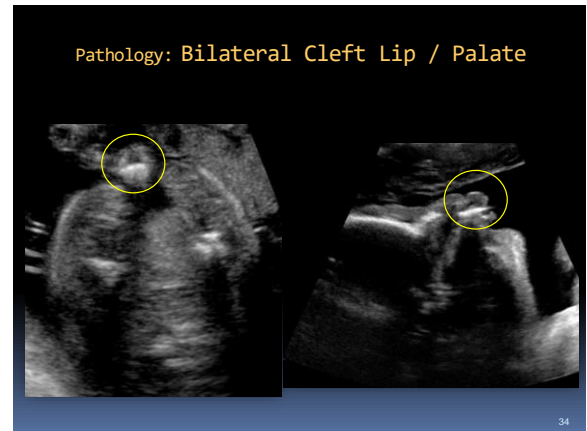
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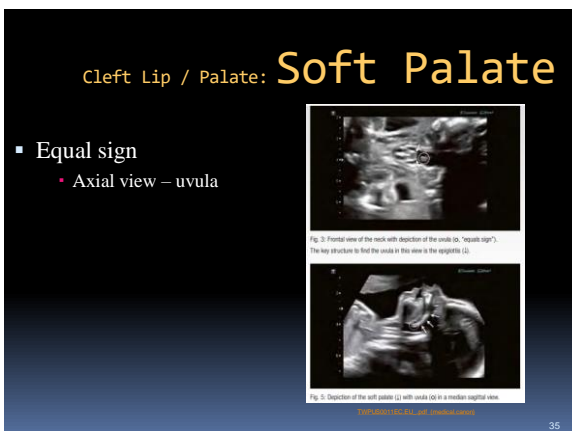
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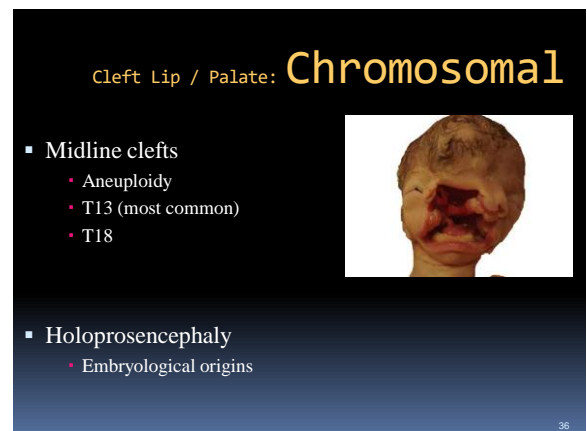
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34



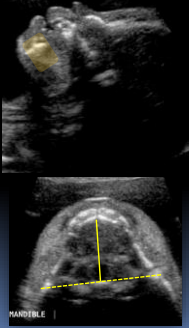
35



36

Technique: **Mandible**


- Sagittal / Axial / 3D
- Jaw Index
 - AP diameter mandible / BPD x100
 - <23 - micrognathia
- Abnormal:
 - Micrognathia
 - Retrognathia



37

Pathology: **Micrognathia**


- Rarely isolated
 - aneuploidy (most common)
 - skeletal disorders
 - syndromes
- Polyhydramnios
- Delivery



38

Technique: **Nasal Bone**

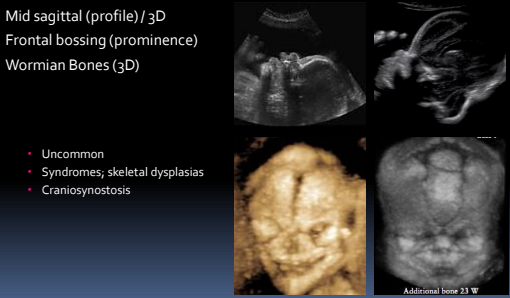
- Mid sagittal (profile)
- Hyperechogenic line - thick synostosis joining L and R nasal bones
- Present / hypoplastic / absent
 - Length >5.5mm (charts for gest.)
- Aneuploidy
 - LR 6.9
 - NIPT – other associations



39

Pathology: **Forehead**


- Mid sagittal (profile) / 3D
- Frontal bossing (prominence)
- Wormian Bones (3D)
 - Uncommon
 - Syndromes, skeletal dysplasias
 - Craniosynostosis



40

Pathology: **Ears**

- Best assessed using 3D
- Assess for:
 - Size (1/3 BPD)
 - Position (low set ears)
 - Absence (anotia)



41

Pathology: **Less common**

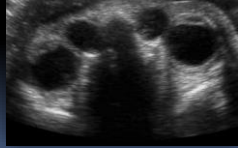
- Masses
 - Teratoma (epignathus)
 - Hamartoma
 - Skin Tag
- Tongue
 - Macroglossia



42

Pathology: **Less common**

- **Arhinia**
 - Partial or complete absence of the nose
- **Proboscis**
 - Nose replaced by poorly developed, tubular, nose-like appendage
- **Dacrocystoceles**
 - Rare benign abnormality - occlusion of the lacrimal drainage

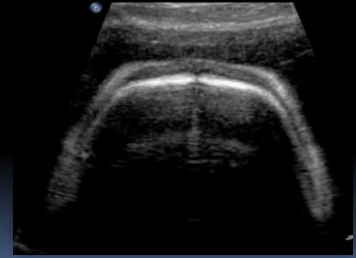


43

43

Summary: **Axial**

- Orbits/Lenses
- Upper lip
- Palate
- Mandible



44

44

Summary: **Sagittal**

- ❖ Profile
- ❖ Forehead
- ❖ Nasal bone
- ❖ Mandible
- ❖ 3D



45

45

Summary: **Coronal**

- Orbits / Lenses
- Nose
- Lips



46

46

Summary: **Fetal face**

- Axial, sagittal and coronal imaging
- Cleft lip/palate is a common pathology
- Practice 3D imaging
- Make it a priceless experience

47

47