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KHMC

PHYSIOLOGY OF AMNIOTIC FLUID

- *Early pregnancy:* composition of AF similar to ECF. Transfer of water across amnion and through fetal skin.
- *By second trimester:* fetus begins to urinate swallow, and inspire AF → During last 2/3 of pregnancy, AF is principally comprised of fetal urine.

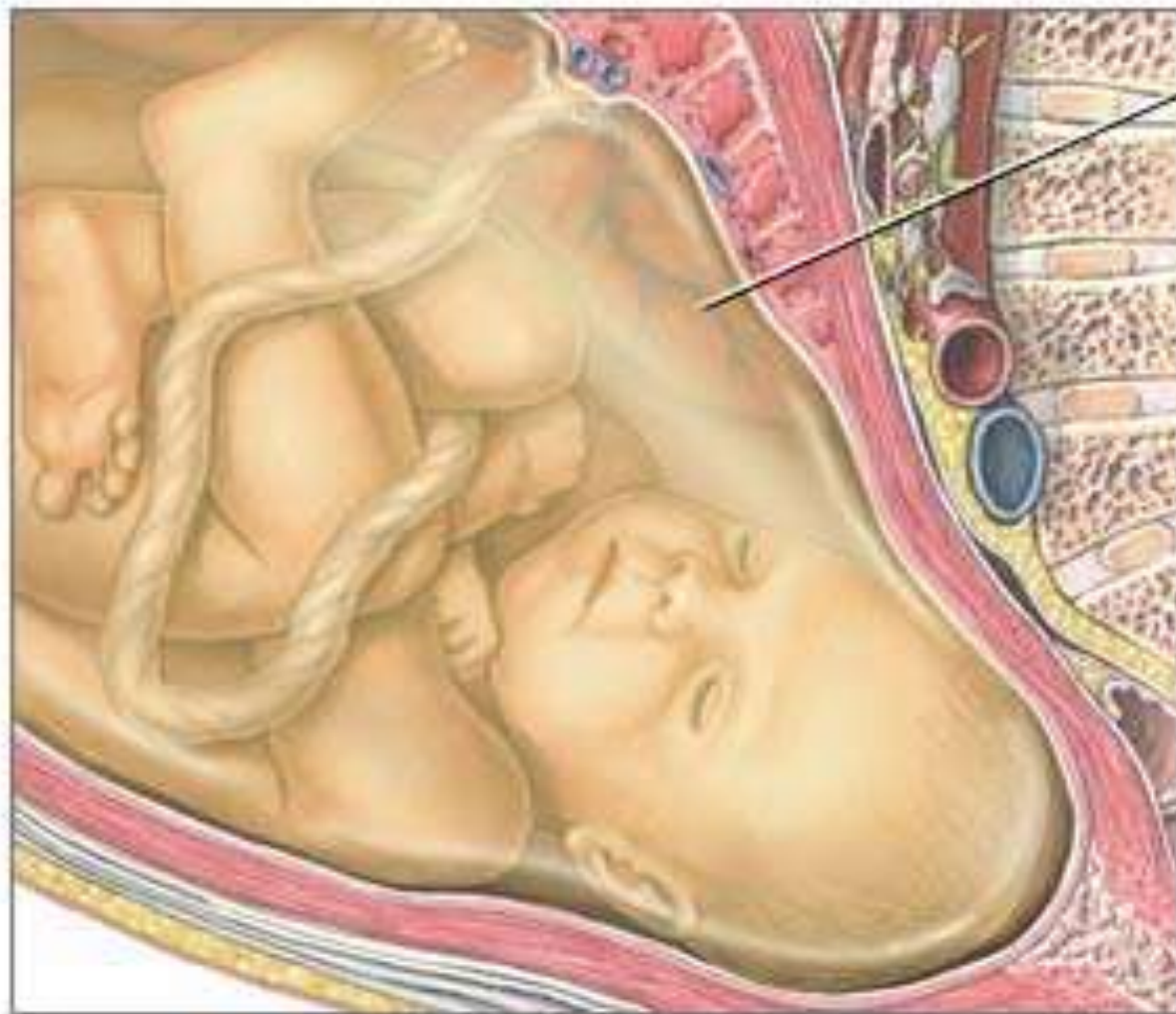


❖ The function of amniotic fluid:

- -protect the fetus from mechanical injury.
- -permit fetal movement and preventing limbs contracture.
- -prevent adhesions between the fetus and amnion.
- -permit fetal lung development, if there is absence of the fluid especially in the 2nd trimester this will lead to pulmonary hypoplasia.

NORMAL AMNIOTIC FLUID VOLUME

Weeks Gestation	Fetus (g)	Amniotic Fluid (ml)	Placenta (g)
16	100	200	100
28	1000	1000	200
36	2500	900	400
40	3300	800	500

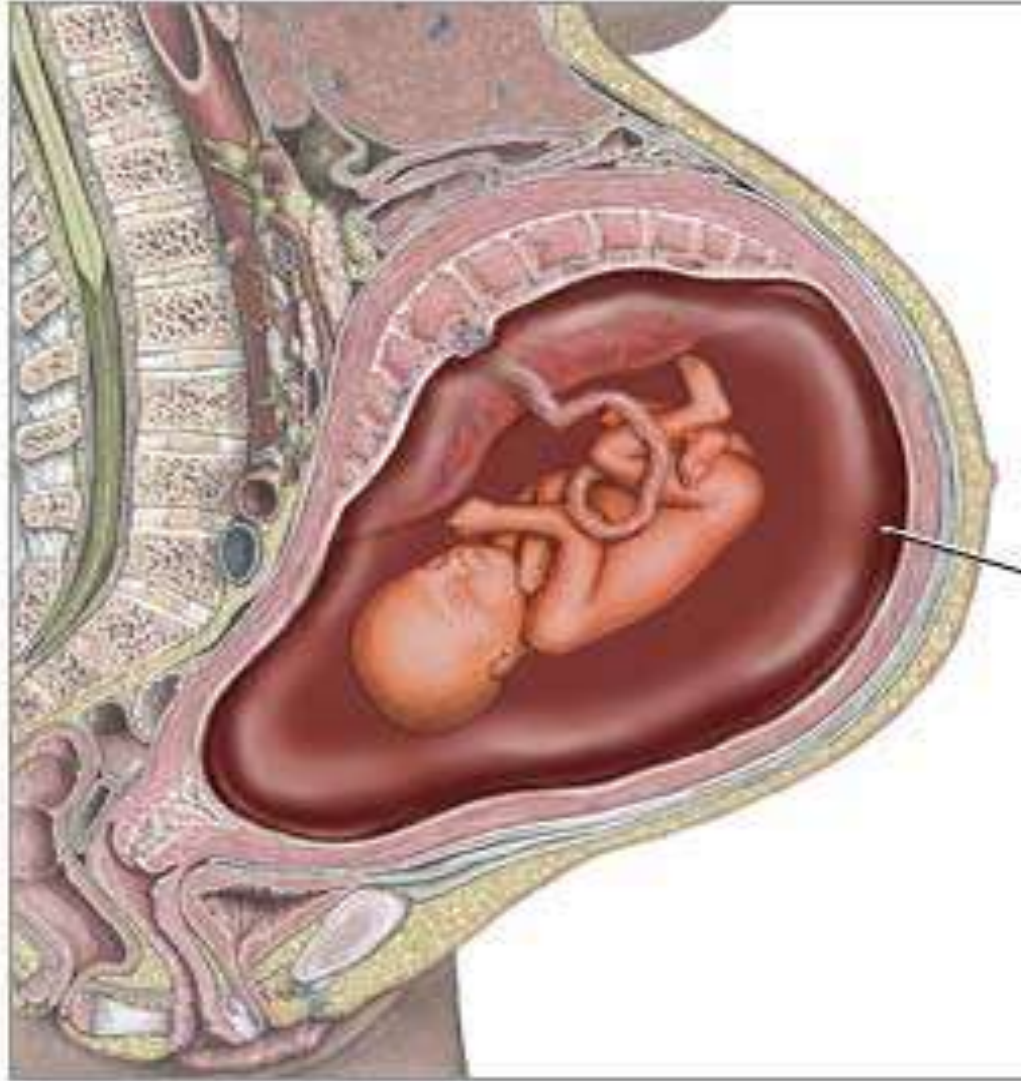


Amniotic fluid is the clear, yellowish fluid that surrounds and protects the fetus in the uterus

DEFINITIONS:

- Polyhydramnios: >2000 cc amniotic fluid
- Amniotic Fluid Index = largest vertical pocket in 4 quadrants
AFI = polyhydramnios >24 cm.
- LVP more than 8cm .





Polyhydramnios
is excessive
amniotic fluid
surrounding
the fetus

ETIOLOGY OF POLYHYDRAMNIOS

- Idiopathic
- Fetal Anomalies
- Diabetes
- Multifetal gestation
- Immune/Non-immune hydrops
- Fetal infection
- Placental haemangiomas

Etiology of Polyhydramnios: Fetal Anomalies

- Problems with swallowing and GI absorption
- Increased transudation of fluid:
anencephaly, spina bifida
- Increased urination: anencephaly (lack of ADH, stimulation of urination centers)
- Decreased inspiration

SYMPTOMS

- Dyspnea
- Abdominal pain
- Venous stasis
- Contractions → preterm labor
- Decreased Perception of Fetal Movements

DIAGNOSIS

- Fundal height > gestational age
- Difficulty palpating fetal parts/hearing heart tones
- Tense uterine wall
- Sonography

complication

- Fetal prognosis worsens with more severe hydramnios and congenital anomalies
- 15-20% fetal malformations
- Preterm delivery
- Suspect diabetes
- Prolapse of cord
- Abruptio

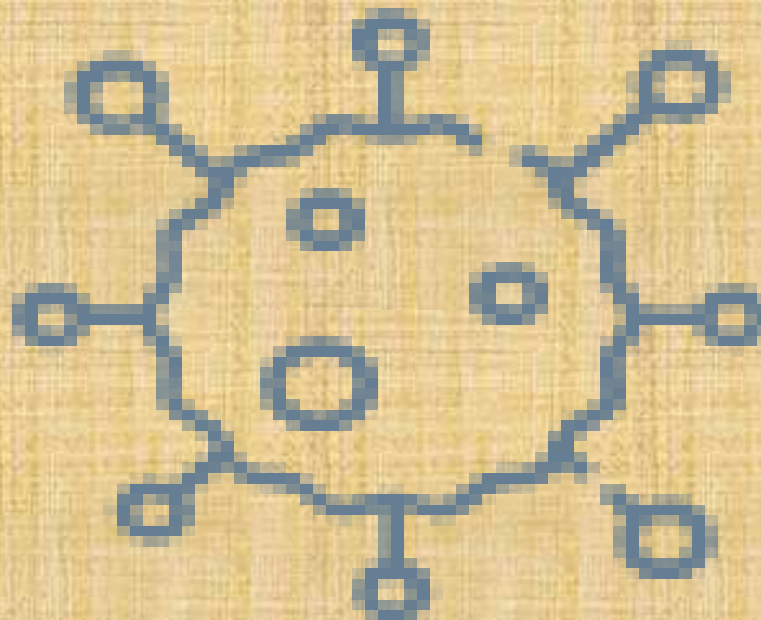
Mother complication

- Dyspnea
- Venous Stasis
- Placental abruption
- Uterine dysfunction
- Post-partum hemorrhage
- Abnormal presentation -- >C/S

TREATMENT

- Mild to Moderate hydramnios: rarely requires treatment
- Hospitalization, bed rest in sever hydromines
- Amniocentesis
- Non-steroidal anti-inflammatory analgesia
e.g endomitacin
- Blood sugar control in case of DM .
- Betamethasone in premature case

OLIGOHYDRAMNIOS



DEFINITION

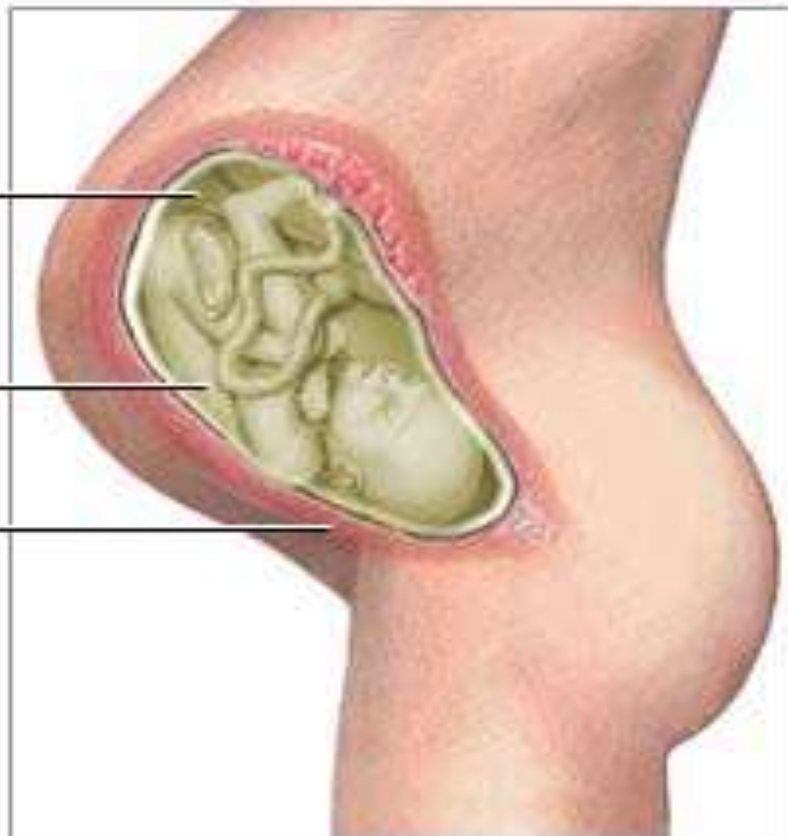
- AFI <5



Amniotic
fluid

Fetus

Uterus



ETIOLOGY

- Postdate
- Fetal Anomalies: obstruction of fetal urinary tract/renal agenesis
- IUGR
- ROM
- Twin/Twin transfusion
- Exposure to ACE inhibitors, and
- Non-steroidal anti-inflammatory

SIGNS/SYMPTOMS

- Fundal height < gestational age
- Decreased fetal movement
- Fetal Heart Rate tracing abnormality
- Diagnosis: Ultrasound



- Extremely poor fetal prognosis, especially in early pregnancy
- Adhesions between amnion and fetal parts - -->malformations and amputations
- Musculoskeletal deformities
- Pulmonary hypoplasia

- Cord Compression -- >fetal hypoxia
- Passage of meconium into low AF volume:
thick particulate suspension -->respiratory
compromise

TREATMENT

- Delivery in compromised fetes
- Amnioinfusion

