Premature Rupture of fetal Membranes (PROM)

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Definitions

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- *PROM*: ROM before onset of labor after 37 weeks gestation.
- *Preterm PROM (PPROM):* ROM before completed 37 weeks gestation (in ( ) 20-37 weeks).
- *Early rupture of membranes (EROM):* ROM during 1st stage of labor.

EPIDEMIOLOGY

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Incidence: 2% of all pregnancies.

Etiology & risk factors: (idiopathic in 35% of cases)

1. *Genital infection:* Specially bacterial vaginosis.
2. *Trauma:* Direct or coital trauma.
3. *Congenital weakness in membrane:* Affects its tensile strength.
4. *Increased intrauterine pressure:* As in hydramnios, placental abruption & multifetal pregnancy.
5. ***Malpresentation & malposition.***
6. ***Cervical incompetence.***
7. ***Other risk factors:*** Previous PROM, previous preterm labor, uterine anomalies, smoking, malnutrition & low socio-economic status

Complications

A) Chorio-amnionitis:

Symptoms: Fever, rigors, abdominal pain & foul odor of fluid.

Signs:

1) Maternal: Fever, tachycardia, uterine tenderness & offensive vaginal discharge.

2) Fetal: Fetal tachycardia (earliest sign).

Investigations: *1) CBC:* Leukocytosis. *2) C-reactive protein (CRP): elevated*

3) AF analysis: Leukocytosis & organisms. *4) AF culture & sensitivity testing.*

B) Cord prolapse: Specially in polyhydramnios or malpresentation.

Complications

C) Premature placental separation: Specially in hydramnios.

D) Fetal compression syndrome: When ROM before 25 weeks. Fetal compression due to drainage of liquor. Characterized by pulmonary hypoplasia, abnormal facies & contracture of extremities.

E) Prematurity with its complications.

F) Neonatal pneumonia.

G) Puerperal infection.

Diagnosis:

A) History: Sudden passage of watery fluid per vagina or leaking in dribbles.

B) Examination:

1) General: Signs of infection (fever & tachycardia) may be present.

2) Abdominal:

a) Fundal level may be < period of amenorrhea.

b) Fetal parts may be more easily felt & uterus is felt molded on fetus in severe cases.

3) Local:

a) Inspection: Fluid leakage per vagina with characteristic seminal odor.

b) Palpation: Fluid contamination of examining fingers (however, palpation should be avoided when PROM is suspected to avoid infection).

c) Sterile dry speculum examination: Fluid leakage from external os (definitive diagnosis) or presence of pool of AF in posterior fornix.

Diagnosis

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C) Investigations:

1) Confirmation of nature of fluid:

   a) *Nitrazine strip test:* fluid from vagina exam placed on strip of nitrazine paper→ paper turn blue in presence of alkaline PH (7-7.5) of AF

   b) *Ferning test:* AF is fern +ve due to its NaCl content (most reliable test).

   c) *Nile blue sulfate test:* Staining desquamated fetal cells in AF by orange color.

   d) *Analysis of fluid for AFP.*

   e) *Ultrasound:* For estimation of AF volume.

2) Evaluation of fetal condition: Tests for fetal evaluation (see later).

3) Detection of infection: Investigations of chorioamnionitis (see before).

MANAGEMENT OF PROM

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Prevention:

A) Treatment of genital infection.

B) Avoid coitus in late pregnancy (specially for high risk cases).

C) More rest in cases of multifetal pregnancy & hydramnios.

D) Cervical cerclage for cervical incompetence.???

E) Prohibition of smoking.

MANAGEMENT OF PROM

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Treatment: -→ *Plan of treatment:*

1) **If there is infection:** TOP regardless GA.
2) **If there is no infection:**
   a) ***Mature fetus + Uterine activity*:** → Follow up + continuous fetal monitoring.
   b) ***Mature fetus + No uterine activity*:** → Waite for 12-24 hours & give prophylactic antibiotics:
      1- If labor starts: Follow. 2- If labor doesn't start: TOP.
   c) ***Immature fetus + Uterine activity*:** → Give short term tocolysis + prophylactic antibiotics + corticosteroids then TOP.
   d) ***Immature fetus+ No uterine activity*:** → Expectant treatment till maturity (37 w) then TOP.

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Lines of treatment:

1) Expectant treatment:

a) Hospitalization: At high risk pregnancy unit.

b) Rest: Complete bed rest to prevent more stress on amniotic sac.

c) Avoid vaginal examination: Because it carries risk of introducing infection (it is indicated if patient is in labor to exclude cord prolapse & assess degree of cervical dilatation & effacement & it should be done under complete aseptic conditions using sterile gloves).

d) Observation: Maternal & fetal.

e) Drugs: 1- Antibiotics: Erythromycin. 2- Corticosteroids: To enhances fetal lung maturity (in cases of PPROM). 3- Tocolytics: Given for 36-48 hours (short term tocolysis) in cases of PPROM with uterine activity to delay delivery & give time for action of corticosteroids.

MANAGEMENT OF PROM

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2) Termination of pregnancy:

Indications:

a) Chorioamnionitis.

b) GA ≥ 34 weeks.(recently >36 with no infection)

c) Proved fetal lung maturity by L/S ratio & phosphatidyl glycerol.

d) Other obstetric indications (as fetal distress or cord prolapse).

Methods: Either vaginal delivery or CS according to condition.

Thanks

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