Premature Rupture Of Membrane (PROM)

Overview

- Definition
- Classification
- Types
- Pathophysiology
- Risk factors
- Diagnosis
- Complications: maternal & fetal
- Management

PROM
Definition

- 'Premature rupture of membranes' or Prelabour rupture of membranes
- Rupture of fetal membranes before the onset of labour

Pathophysiology

- Fetal membranes (amnion & chorion) are bound together by different layers composed of extracellular matrix.
- The matrix is the key factor for the elasticity & tensile strength of the fetal membranes
- Any process that weakens the matrix increases the risk of PROM

Risk Factors:

- Infection
- H/O of PROM in previous pregnancy (RR 21%)
- Antepartum haemorrhage
- Multiple pregnancies
- Polyhydramnios
- Smoking & drug abuse
- Cervical incompetence
- Iatrogenic

Infection & PROM

- Infection is the greatest risk factor
- Bacterial proteases decreases the strength and elasticity of the membranes
- Bacteria produces phospholipase which stimulate the release of prostaglandins from arachidonic acid leading to preterm contractions
- Infection also causes host immune system to release cytokines & other inflammatory mediators which cause weakening of matrix and liberation of MMPs

Diagnosis

- H/O leaking per vagina
- Speculum examination
- PV examination avoided in PPROM

Doubtful diagnosis

- Nitrazine paper test
- Fern test
- Nile blue test
- Fetal fibronectin test

Nitrazine paper test

- Normal pH of vagina : 4.5 – 5
- PH of amniotic fluid ≈ 7.3
- Nitrazine paper turns yellow to blue due to alkalinity(pH ≈ 6) if there is ROM
- False positive : blood & semen

Fern test

- Collection of vaginal fluid with a swab from the posterior fornix
- A smear is made on the glass slide
- Ferning patern visible under microscope

Nile blue test

Collection of fluid from vagina

↓

Centrifugation

↓

Stain with 0.9% nile blue sulphate

↓

Organised blue cells

Fetal fibronectin

- Between 23- 34 weeks
- More than 50 ng/ml
- Mostly an indicator of preterm labour

Complications

- Maternal: - infection,
  - ↑ caesarean deliveries
- Fetal: prematurity,
  infection,
  asphyxia,
  pulmonary hypoplasia,
  musculoskeletal deformity

Management

- Diagnosis
- Rest & sterile vulval pad
- Antibiotics
- To exclude cord prolapse/ active labour
- Avoid digital examination
- Blood counts, urine RM & culture
- Vaginal swab culture
- USG
- Matenal & fetal condition assestment