1. Definition:

Rupture of the membranes prior to 37 weeks gestation and prior to the onset of labor.
(To be distinguished from “premature rupture of membranes” prior to the onset of labor at term, and from premature rupture of membranes without labor prior to viability at 23-24 weeks, which is most commonly associated with “hour-glassing” of the membranes secondary to cervical insufficiency.)

a. Associations with PPROM:
-same as for preterm birth above, current theory is that PPROM is the result of occult infection at the choriodecidual interface with production of microbial collagenases resulting in membrane rupture.

Midtrimester PPROM: KEY POINTS
- Midtrimester PPROM is associated with the same risk factors at PPROM later in gestation
- Mean latency is 17 days, median latency is 7 days because the majority of pregnancies deliver soon after rupture of membranes
- The frequency of chorioamnionitis is higher early in the latency period and at lower residual amniotic fluid volumes
- Abruptio placentae and cord prolapse are more common in pregnancies complicated by PPROM
- Neonatal survival is primarily related to gestational age at delivery, and is comparable to that in preterm deliveries matched for gestational age without PPROM.
- The neonatal risk of both pulmonary hypoplasia and musculoskeletal deformation decrease with advancing gestational age, shorter latency, and greater residual amniotic fluid volume.
- Maternal risks from midtrimester PPROM are lower than fetal/neonatal risks and include infection, need for cesarean delivery, and need for classical hysterotomy.
- Absence of amniotic fluid leakage associated with resealing of membranes and reaccumulation of amniotic fluid confers a prognosis comparable to that of pregnancies without PPROM.

Corticosteroids
A single course of corticosteroids is recommended for pregnant women between 24 weeks and 34 weeks of gestation who are at risk of preterm delivery within 7 days. A single course of antenatal corticosteroids should be administered to women with PROM before 34 weeks of gestation to reduce the risks of respiratory distress syndrome, perinatal mortality, and other morbidities. There are no data regarding the efficacy of corticosteroid use before viability, and it is not recommended.
A single rescue course of antenatal corticosteroids may be considered if the antecedent treatment was given more than 2 weeks prior, the gestational age is less than 32 6/7 weeks, and the women are judged by the clinician to be likely to give birth within the next week. However, regularly scheduled repeat courses or multiple courses (more than two) are not recommended. Further research regarding the risks and benefits, optimal dose, and timing of a single rescue course of steroid treatment is needed.

**Antibiotics**

There are 3 separate indications to give antibiotics in this setting:
- **GBS prophylaxis**
  (see GBS CDC guideline which emphasizes IV PCN therapy over Ampicillin IV)
- **prolong latency period**
  (see regimen below which adds oral azithromycin AND amoxicillin)
- **treat overt chorioamnionitis**
  (which adds IV ampicillin and gentamicin)

2. **Management:**

Review pregnancy dating criteria
Perform sterile speculum examination for evidence of amniotic fluid
Refrain from performing a digital examination unless absolutely necessary to document advanced labor prior to transport. (Remember that if you can visualize a portion of the presenting part, the cervix is most likely significantly effaced and dilated at least 4 cm, but if it appears “closed” it may be any dilation <4cm...)
Digital examination “winds the clock of infection” and significantly decreases the latency period for the onset of labor, and increases the risk of infection, and is to be avoided in this setting if at all possible.
Confirm presentation by Leopold’s and/or ultrasound
Perform level I ultrasound to assess GA, EFW, AFI, presentation, and anatomy
A sample of vaginal pool amniotic fluid for fetal lung maturity testing may be appropriate if the patient is between 34 and 36 weeks gestation
Obtain fetal monitor strip and maternal vital signs
Administer group B strep prophylaxis per guideline
Tocolysis (see above) may be appropriate to facilitate transport, but is otherwise not indicated
Consult with OB-GYN is advised for further management and transport
At ANMC PPROM is managed as an inpatient
Daily NST should be carried out
Maternal temperature and fetal heart rate are monitored q4h, but the onset of uterine contractions is the most common sign of incipient infection. Overt chorioamnionitis mandates delivery.
Labor may be induced at 34 weeks documented gestation, or sooner with consultation with the Pediatrics service
Patients may be induced with either vaginal or oral misoprostol or IV oxytocin
Group B strep prophylaxis should be re-instituted in labor
If chorioamnionitis is suspected, gentamicin 2 mg/kg IV q8h should also be administered to cover gram negative pathogens
Patients with rupture of membranes at term who are not in labor have a better outcome without an increase in their cesarean birth rate if induced as soon as they present.

EGA < 34 weeks

Step 1
If less than 34 weeks gestation, administer Betamethasone (12 mg) given intramuscularly 24 hours apart for two doses or Dexamethasone (6 mg) given intramuscularly every 12 hours for four doses.

Step 2
If GBS status is unknown, obtain a rectovaginal GBS specimen and administer GBS prophylaxis for 48 hrs per CDC guideline* plus Azithromycin 250 mg orally q daily

*Preferred, if not PCN allergic Penicillin G 5 million units IV followed by 2.5 million units IV every 4 hours

Second choice, if not PCN allergic Ampicillin 2 gm IV then 1 gm IV every 4 hours

Step 3
To increase the latency period after 48 hrs, administer azithromycin 250 mg daily orally for an additional 5 days And amoxicillin (500 mg orally three times daily or 875 mg orally twice daily) for an additional 5 days.

Summary of recommendations
The following recommendations and conclusions are based on good and consistent scientific evidence (Level A):

- For women with PROM at term, labor should be induced at the time of presentation, generally with oxytocin infusion, to reduce the risk chorioamnionitis.

- Patients with PROM before 34 weeks of gestation should be cared for expectantly until 33 completed weeks of gestation if no maternal or fetal contraindications exist.

- A 48-hour course of intravenous antibiotics followed by 5 days of oral therapy is recommended during expectant management of preterm PROM remote from term to prolong pregnancy and to reduce infectious and gestational age–dependent neonatal morbidity.
• All women with PROM and a viable fetus, including those known to be carriers of group B streptococci and those who give birth before carrier status can be delineated, should receive intrapartum chemo-prophylaxis to prevent vertical transmission of group B streptococci regardless of earlier treatments.

• A single course of antenatal corticosteroids should be administered to women with PROM before 32 weeks of gestation to reduce the risks of RDS, perinatal mortality, and other morbidities.

The following recommendations and conclusions are based on limited and inconsistent scientific evidence (Level B):

• Delivery is recommended when PROM occurs at or beyond 34 weeks of gestation.

• Digital cervical examinations should be avoided in patients with PROM unless they are in active labor or imminent delivery is anticipated.

The following recommendations and conclusions are based primarily on consensus and expert opinion (Level C):

• A specific recommendation for or against tocolysis administration cannot be made.

• The efficacy of corticosteroid use at 32–33 completed weeks is unclear based on available evidence, but treatment may be beneficial particularly if pulmonary immaturity is documented.

• For a woman with preterm PROM and a viable fetus, the safety of expectant management at home has not been established.

References:

