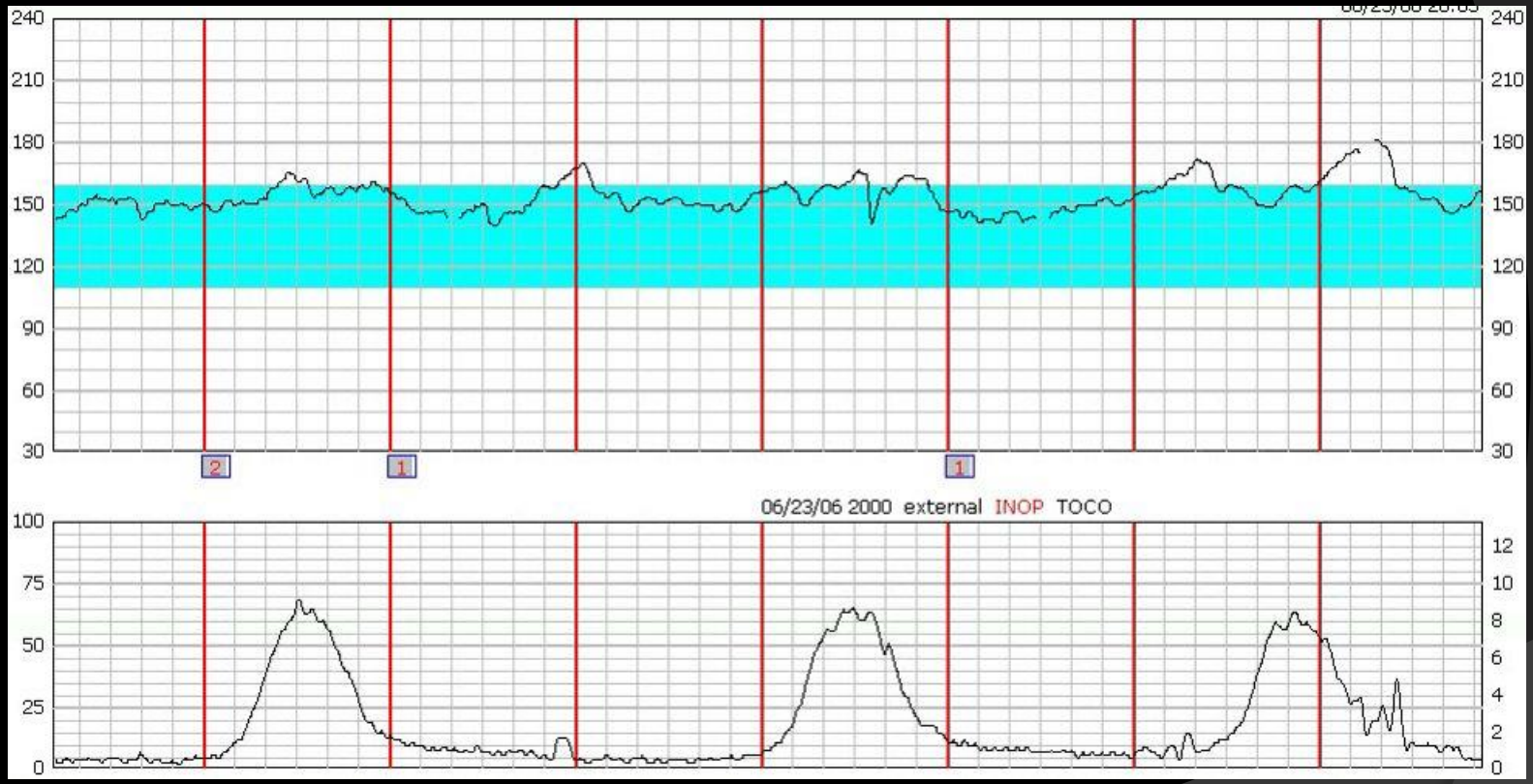
CASE PRESENTATION

Case Presentation

- A 32 year old G1 presents with recurrent fevers to 102 F. The patient reports that she has had a mild cough and headache for the last few days
  - What is in your differential diagnosis?

- Vitals
  - T-101.4
  - R-30
  - P-115
  - Sat-98%
  - Labs
  - WBC-16,500 with 86% segs; 5% bands
  - HGB/HCT-9.1/27.2
  - BMP is normal.

Fetal Heart Rate Tracing



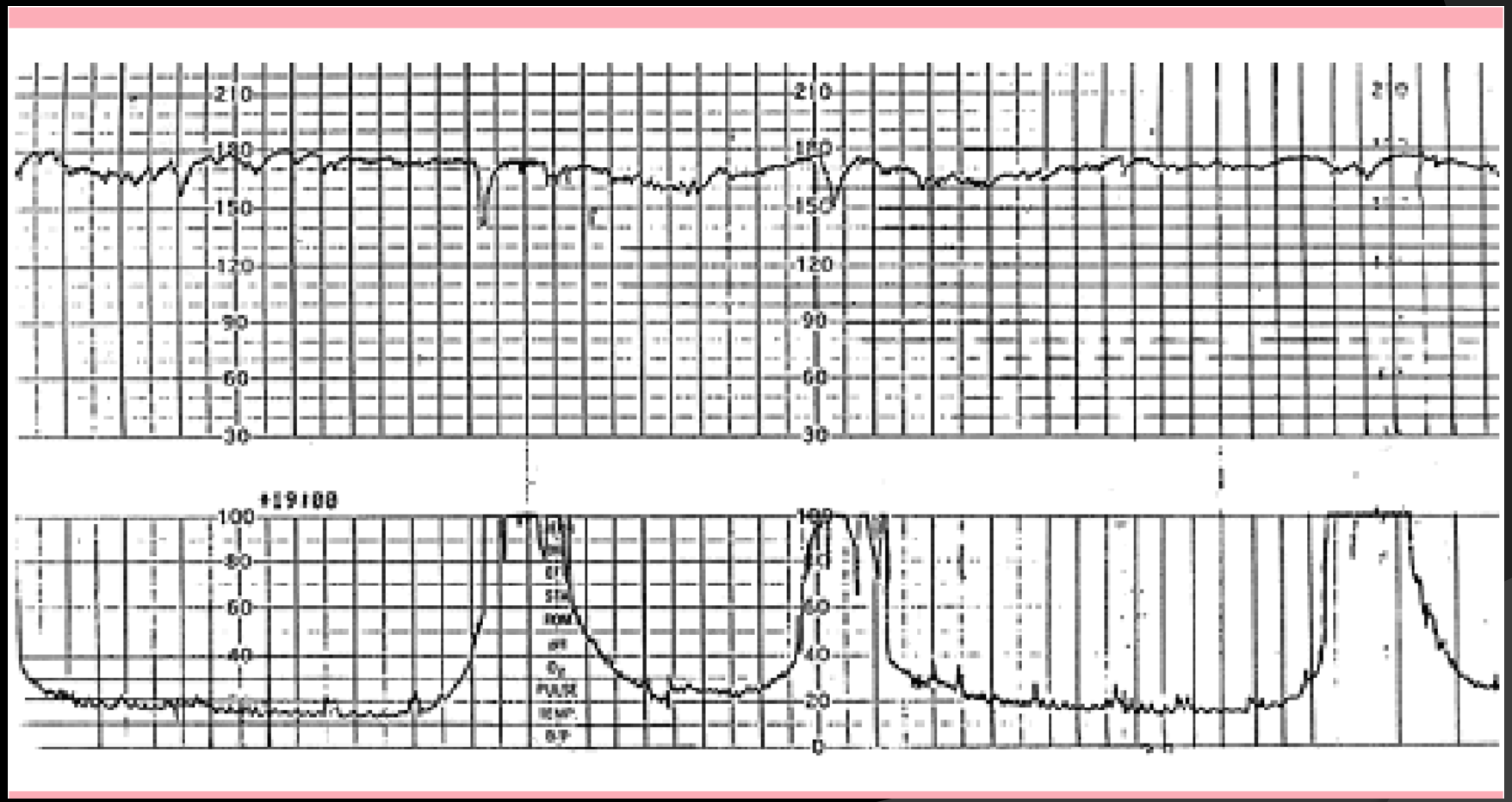
- Labs
  - Respiratory PCR
    - + for rhinovirus
    - + for influenza A

- What therapy would you like to initiate ?
  - IVF
  - Antivirals
    - Choice???

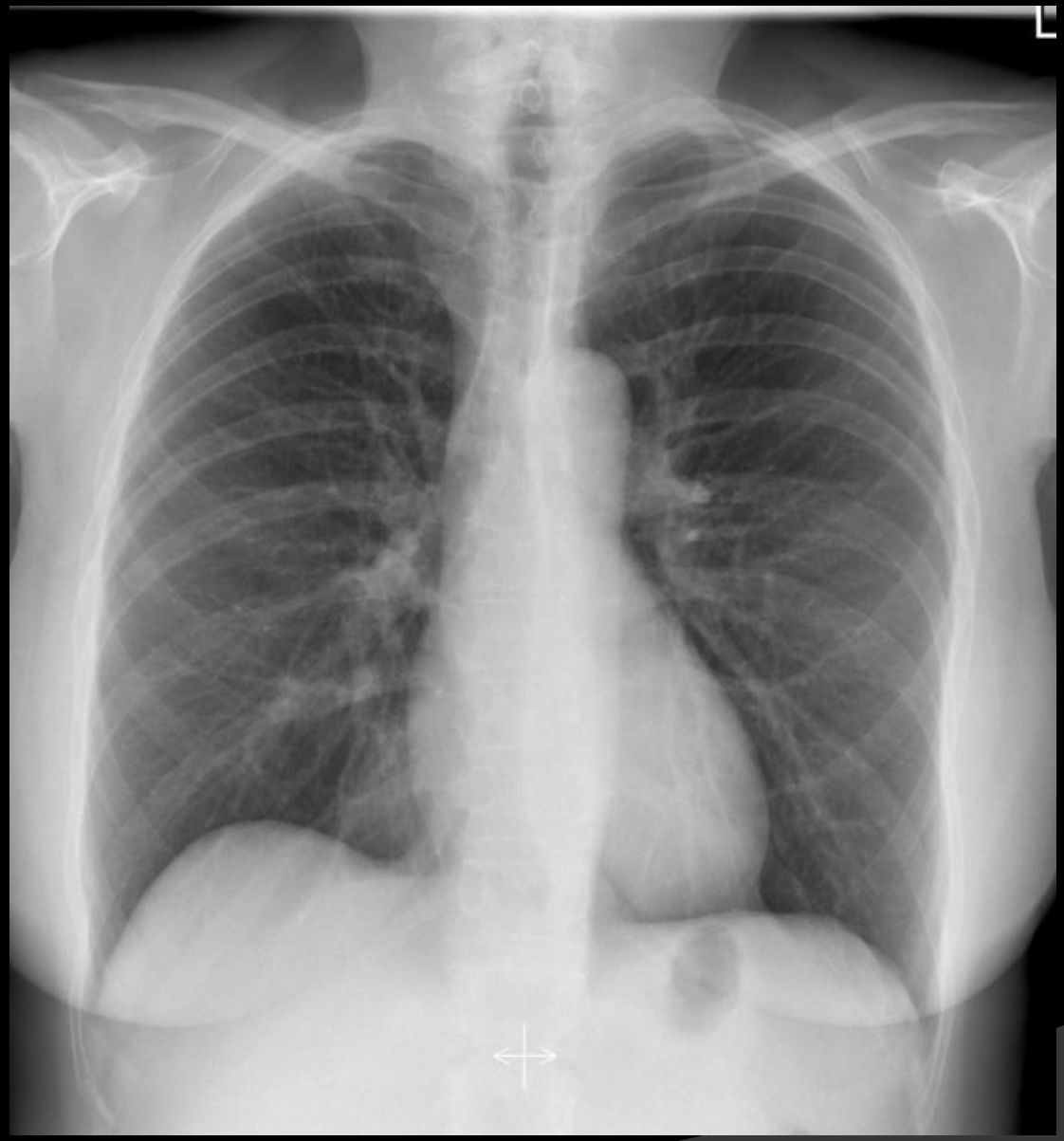
- The patient's temperature is 102.F. She states that she does not feel well even after tylenol. She states that she feels SOB
  - What other information would you like now?

- Vitals
  - T-102F
  - R-38
  - P-131
  - O2 Sat-88%

Fetal Heart Rate Tracing



- Despite therapy, the patient's condition continues to worsen
  - What is your diagnosis ?
  - What is your major concern ?
  - What other information do you need?



ARDS

Definition

- Acute onset
- Bilateral infiltrates on CXR
- No evidence of intravascular volume overload
- Impaired oxygenation
  - Acute lung injury-- PaO2:FiO2 of less than or equal to 300
  - ARDS-- PaO2:FiO2 of less than or equal to 200

ARDS

Causes

- Aspiration
- Pneumonia
- Sepsis
- Shock
- Multiple Transfusions
- Hypertensive Disease
- Amniotic Fluid Embolism

Pathogenesis

- Endothelial and Epithelial Injury
- Neutrophil-Dependent Lung Injury
- Cytokines
- Ventilator-induced injury

ARDS

Clinical,Pathological and Radiographic Features

- Acute Phase (Exudative)
  - Rapid onset of pulmonary failure
  - CXR indistinguishable from cardiogenic pulmonary edema
  - Pathological findings include diffuse alveolar damage with inflammatory fluid in alveolar spaces and disruption of the alveolar endothelium

ARDS

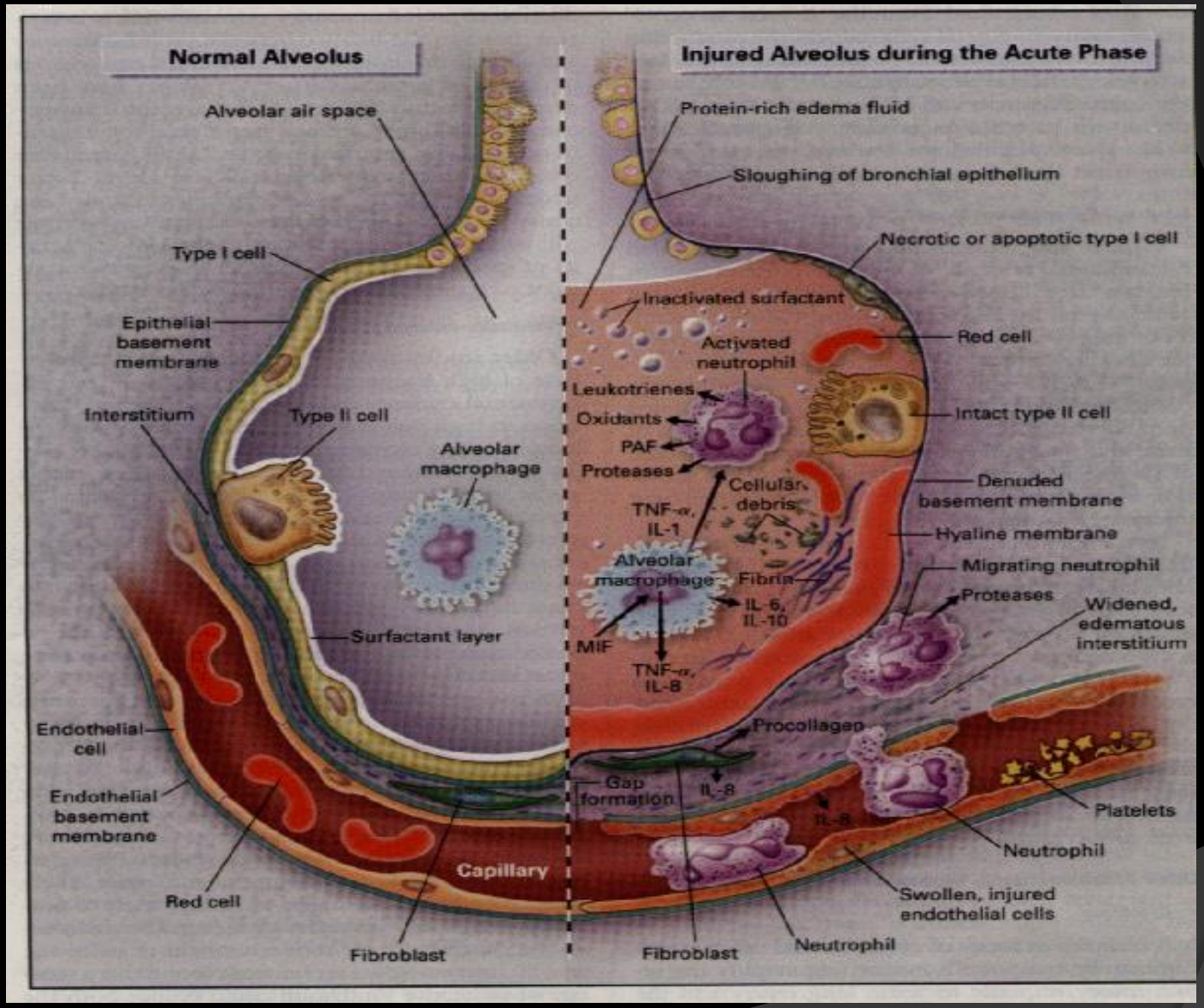
Clinical,Pathological and Radiographic Features

- Chronic phase
  - Fibrosing alveolitis
  - Decreased pulmonary compliance
  - Pulmonary hypertension
  - CXR-subcutaneous emphysema and possible pneumothorax

ARDS

Clinical,Pathological and Radiographic Features

- Recovery phase
  - Gradual improvement in lung compliance
  - Improvement in hypoxemia
  - CXR-gradual change in previous findings, mage lag as much 3 days

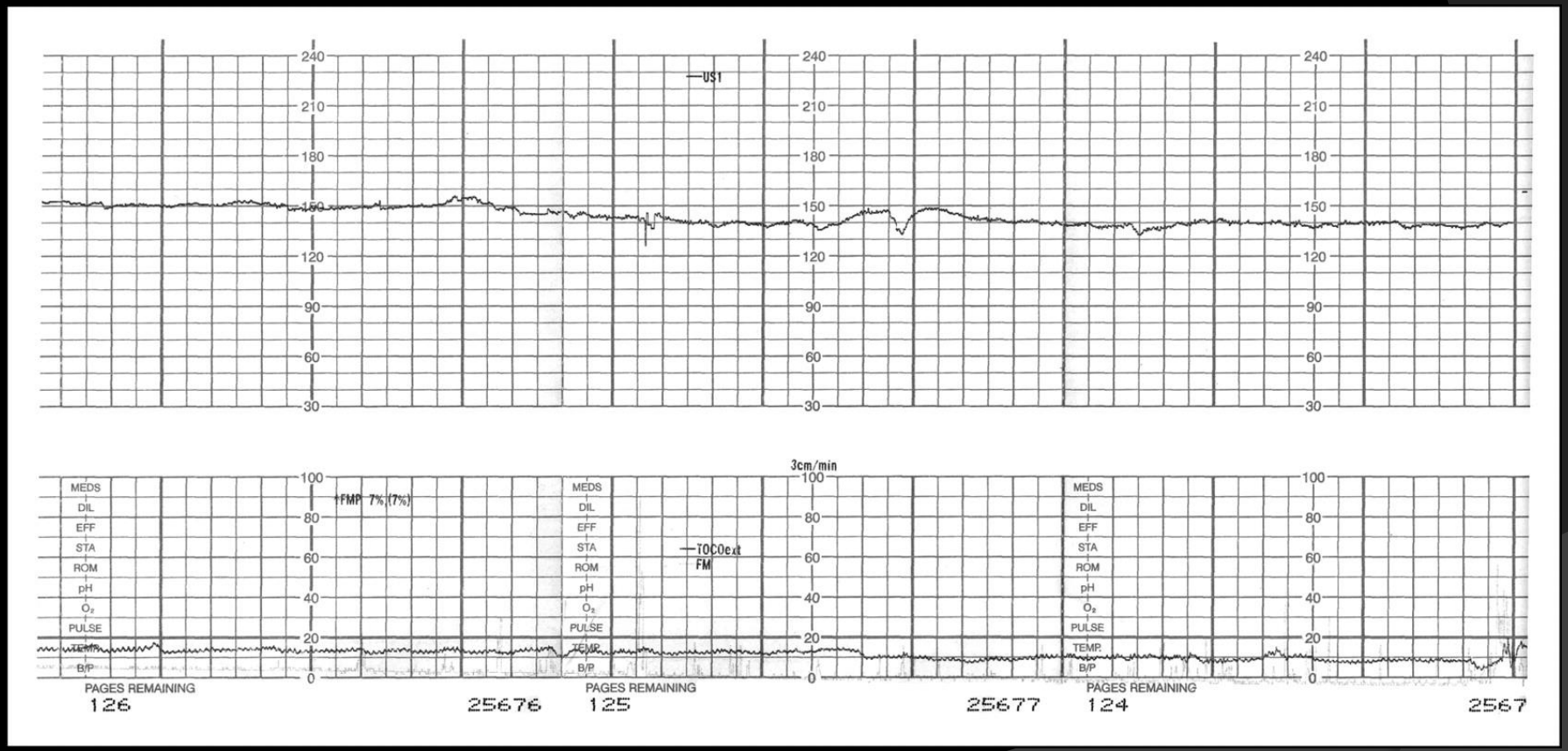

Normal Alveolus
Alveolar air space
Type I cell
Epithelial basement membrane
Interstitium
Type II cell
Alveolar macrophage
Surfactant layer
Endothelial cell
Endothelial basement membrane
Red cell
Capillary
Fibroblast
Injured Alveolus during the Acute Phase
Protein-rich edema fluid
Sloughing of bronchial epithelium
Necrotic or apoptotic type I cell
Inactivated surfactant
Red cell
Activated neutrophil
Leukotrienes
Oxidants
PAF
Proteases
Intact type II cell
Cellular debris
Denuded basement membrane
TNF-α, IL-1
Hyaline membrane
Alveolar macrophage
Fibrin
Migrating neutrophil
IL-6, IL-10
Proteases
Widened, edematous interstitium
MIF
TNF-α, IL-8
Procollagen
Gap formation
IL-8
IL-8
Platelets
Neutrophil
Swollen, injured endothelial cells
Fibroblast
Neutrophil

- What therapies would you like to initiate?
- Is she a candidate for intubation?
  - If so, what are your ventilator settings
- What is you plan for the fetus?

Clinical course

- Patient is intubated and sedated
  - Placed on SIMV
  - If she is 100 kg, calculate her TV
  - Rate-15
  - Her peak pressures are initially 40 mm/Hg
    - What can you do to help with this
  - PEEP is 8
  - FiO2 is weaned to 50%
    - ABG-7.3/22/100/-4
      - Do you need to make any adjustments?

Fetal heart tracing



Clinical Course

- HD#4, the patient is afebrile
  - ABG on 40% and PEEP of 5
    - 7.35/32/98/-2
  - What is you plan?

Clinical course

- Patient was extubated and placed on face mask
- She was discharged home undelivered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