



Introduction

- ❖ Early onset sepsis is potentially fatal illness with estimated incidence in term infants of 0.98 cases per 1000 live births.¹
- ❖ Typical pathogens include Group B Streptococcus, Escherichia coli, Listeria monocytogenes.
- ❖ Little is known about how home birth may alter the pathogens or the clinical course for neonates.

Case Presentation

HPI:

- ❖ A **one day old** female born at 37 weeks by home water birth presented to the ED with cyanosis and respiratory distress.
- ❖ Previously admitted to NICU at 2 hours of life for respiratory distress. Diagnosed with TTNB. Required up to 4L O₂. Discharged after 12 hours.
- ❖ Family re-presented to PCP for ongoing difficulty breathing. Noted to be hypoxic at PCP office and sent to ED via EMS.

Birth History:

- ❖ Apgar 8 and 10, ROM 12 hours, clear fluid at delivery. No reported maternal fever. Birth weight 3.05kg.

Family History

- ❖ 4 healthy older siblings who were under-vaccinated.
- ❖ Mother healthy with reportedly normal prenatal labs.

Initial Assessment:

- ❖ T 94.7F, HR 154, BP 73/56, O₂ sat 88% on 4L
- ❖ Exam: crying, intercostal retractions, grunting. Breath sounds diminished. No murmur, strong femoral pulses. Acrocyanosis, centrally pink.

Initial Imaging:

- ❖ CXR showing left-sided tension pneumothorax with mediastinal shift.



Figure 1. Left-sided pneumothorax with mediastinal shift and crowding of interstitial lung markings of the right lung. The left-sided pneumothorax measures up to 3.7 mm in thickness near the left lung apex.

Hospital Course

Additional Studies:

- ❖ Echo: mildly decreased biventricular function
- ❖ Labs: WBC 19.4, mild left-shift, 11% bands
- ❖ UA and urine culture: negative
- ❖ **Blood culture: Streptococcus pneumoniae**
- ❖ CSF culture: no growth

Treatment:

- ❖ Respiratory status improved after chest tube placement in ED.
- ❖ Admitted to PICU and placed on HFNC with empiric ampicillin and gentamicin.
- ❖ Treated with ten day course of IM/IV ampicillin due to access difficulties.
- ❖ Patient improved and discharged home on hospital day 10.

Discussion

- ❖ We present a case of spontaneous pneumothorax as well as *S. pneumoniae* bacteremia in a one day old term infant born after home water birth.
- ❖ Cause of pneumothorax remains unknown. Possible causes include *S. pneumoniae* pneumonia or previous oxygen administration in NICU.
- ❖ Invasive pneumococcal disease is an uncommon cause of neonatal infection (1-11% of neonatal sepsis cases).²
- ❖ Proposed mechanisms of infection include genital tract colonization or maternal bacteremia at time of birth.^{3,4}
- ❖ This patient also had exposure to unvaccinated siblings at home.
- ❖ Pediatricians should remain aware of *S. pneumoniae* as a cause of neonatal sepsis.
- ❖ Given the reported mortality of up to 50% associated with invasive pneumococcal infection in neonates, there should be strong emphasis on diagnosing and treating peripartum maternal infections.⁵

References

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