# Case Study 1 - Meconium Aspiration

### Case 1:

**Aim:** to recognise a baby with a serious illness

### Learning Objectives:
- Obtain history
- Obtain observations
- Refer appropriately
- Communicate effectively

### Equipment:
- Facilitator card
- Player 1 card-Woman
- Player 2 card-RM
- Medication chart
- Blood test results
- ISBAR card

### Roles in the scenario:
1. Woman
2. Registered Midwife
3. Neonatal registrar
4. Optional
   - Additional midwives
   - Consultant
   - Partner
   - Relative

### Scenario

**Baby-Alice Smith**
**Woman-Angela Smith**
**UR 2001102**

Alice is 4 hours old. She was born at 40+1 weeks gestation by normal vaginal birth. Angela’s membranes were ruptured for 2 hours prior to birth. There was moderate meconium present in the liquor. A neonatal registrar was present at the birth. Alice was vigorous and cried at birth. She had apgars of 8 and 9.

Alice is Angela’s first baby. Angela is breastfeeding.
- Alice has had observations recorded every hour for 4 hours
- At 4 hours of age Alice was noted to have tachypnoea, mild recession and hypothermia

### To start the scenario
1. Assign roles to each player
2. Set up the room with baby in open cot
3. Give the first player card to the player designated as the mother
4. Give the second player card to the player designated as the midwife
5. Allow the scenario to build on itself prompting other players to enter as called for or prompt if necessary
6. Supply players with further information such as medication charts, observations or blood results when asked
During the scenario
If the RM needs prompting

1. What assessments would you make on the baby?
   - Assess the baby for signs of respiratory distress/sepsis
   - Vital signs (Increasing NEWS score)

2. Who would you notify? Why?
   - Team Leader or CMC
   - Registrar

Facilitator should place RM and Registrar back to back to simulate phone conversation
In the phone call the RM should
   - Describe the woman’s/baby’s history
   - Indicate the severity of symptoms and increasing NEWS score
   - State what she would like the registrar to do ie. review the baby

Registrar comes to review the baby:
1. What information do you require from the RM?
   - Observations, increasing NEWS score
2. What assessment would you do?(Prioritise)
   - ABC
   - Physical examination
   - Blood culture, CRP, Cultures, FBC, BSL
3. What is your management plan for the baby?
   - Consult NICU registrar/neonatologist
   - IV access
   - Antibiotics- ampicillin/gentamicin
   - Admit to NICU
   - Provide respiratory support as required
   - Provide explanation to the woman

NICU Registrar comes to review the baby:
1. What information do you require from the obstetric registrar?
   - Assessment
   - Vital signs
2. Who would you notify?
   - Fellow/Consultant
3. What is your management plan for the baby?
   - Admit to NICU
   - Insert IV
   - Take bloods
   - Commence IV fluids and antibiotics
   - Observations and monitoring
   - Respiratory support as required

Questions

1. What are your next actions as a group
   - Notify
   - Transfer to NICU
   - Notify NICU team leader
   - Explanation to parents

To summarise ask the group

1. What they thought went well?
2. What suggestions would they make to improve their roles?
Case Study 1 (Meconium aspiration)

Facilitator Card

CASE 1 (Meconium Aspiration)

Key points in this scenario:

- Identify the signs and symptoms of meconium aspiration
- Recognise the baby is deteriorating and when to refer a registrar
- Identify changes in the neonatal condition

- Alice was born at 40+1 weeks gestation and is now 4 hours of age
- There was meconium present at birth
- Alice had observations recorded hourly for 4 hours
- At 1300 hours Alice’s NEWS score was 1 due to mild tachypnoea of 62
- The midwife completes another set of observations after 1 hour
- At 1400 her NEWS score was 5

Important Points

- A neonatal registrar must be present at all deliveries where meconium is present
- Meconium aspiration syndrome is associated with asphyxia, postterm delivery, chorioamnionitis
- Meconium aspiration syndrome should be considered in all infants born through meconium whether or not they were vigorous at delivery
- Symptoms of meconium aspiration include tachypnoea, cyanosis, grunting, recession, nasal flaring, pallor, irregular gasping respirations and barrel chest in severe cases
- Infants who are vigorous at delivery are not intubated and suctioned at delivery
- Tracheal suction is only recommended for infants who are depressed at birth
- Ensure compliance with NEWS
Case Study 1

Player 1 Card

Woman-Angela

You are a G1 admitted at 40+1 weeks gestation with regular contractions. Your membranes rupture 2 hours prior to birth and moderate meconium is present in the liquor. You gave birth to a baby girl, Alice.

At delivery Alice had apgars of 8 and 9, was vigorous and breast fed well after birth. When Alice is 4 hours of age you notice that she is breathing quickly and does not feed well.

Case Study 1

Player 2 Card

Midwife

You are caring for Alice who was born at 40+1 weeks gestation to a woman who had a normal vaginal delivery with moderate meconium present in the liquor.

Membranes ruptured 2 hours before delivery.

Observations on Alice were performed as per the SOP meconium 1 hrly for 4 hours. NEWS scores were 0 for the first 1 hour. After 2 hours Alice’s NEWS was 2 and then at 4 hours it was 5.
### Blood results for Alice

<table>
<thead>
<tr>
<th>CRP</th>
<th>Hb</th>
<th>WCC</th>
<th>Plat</th>
<th>Blasts</th>
<th>Mye</th>
<th>meta</th>
<th>Bands</th>
<th>Neuts</th>
<th>Lymph</th>
<th>BSL</th>
<th>Bld</th>
<th>Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>162</td>
<td>12.9</td>
<td>256</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.2</td>
<td>9.97</td>
<td>3.44</td>
<td>2.5</td>
<td>pending</td>
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</tbody>
</table>

### Normal Values

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<tr>
<th>CRP</th>
<th>Hb</th>
<th>WCC</th>
<th>Plat</th>
<th>Blasts</th>
<th>Mye</th>
<th>meta</th>
<th>Bands</th>
<th>Neuts</th>
<th>Lymph</th>
<th>BSL</th>
<th>Bld</th>
<th>Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-10</td>
<td>155-210</td>
<td>10-26</td>
<td>150-400</td>
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<td>0</td>
<td>0</td>
<td>0-0.5</td>
<td>7-14.5</td>
<td>2-11.5</td>
<td>&gt;2.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Case study 1 – neonatal – Alice
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