NHS Resolution

# Case story

# Chorioamnionitis after prolonged rupture of membranes at term

Part of NHS Resolution's maternity campaign 2022/25
#ImprovingMaternityOutcomes

Advise / Resolve / Learn

# Early Notification
## Case story guidance

### Background

In Advise, resolve and learn Our strategy to 2025, our second strategic priority is to share data and insights as a catalyst for improvement and our third is to collaborate to improve maternity outcomes. Aligned with these aims we have gathered together learning from our Early Notification Scheme and produced a number of case stories to help support learning from harm identified through claims.

### These resources

Our case stories are illustrative and based on recurring themes from real life events. These experiences have been highlighted and shared with you, to help identify potential risks in your clinical area, promote learning and prevent fewer incidents like these occurring in the future.

### How to use the case stories

There are various ways you may use the case stories, from individual self-directed learning to support continuous professional development to using them in a team environment. The idea is that by learning from the experience of others, maternity unit staff will be able to change their approach to care.

As you read or discuss the examples of incidents that we are sharing we ask you to consider the following:

- Could this happen in my organisation?
- What changes within my organisation or team might I consider after reading the material, including individual practice?
- What information should I share with the team?
- How can I share the learning from this case story?
- Who else needs to know?

### Practical applications

1. Consider the key elements of the case story and through reflection apply the learning to influence your practice in the future.
2. Use this case study as a point of discussion at appropriate multi-disciplinary team meetings, safety huddles, and/or human factor's training.
3. Use this case study to create a multi-disciplinary simulation in the clinical area or on mandatory training.
4. Review your claims scorecard to identify whether there are any themes which relate to this case story and identify where improvements could be made.

## Case story

This case story is illustrative and based on a range of litigation cases. NHS Resolution is sharing the experience of those involved to help prevent a similar occurrence happening to pregnant women and pregnant people, families, and staff.

As you read about this incident, please ask yourself:

- Could this happen in my organisation?
- Who could I share this with?
- What can we learn from this?

**Topic:** Chorioamnionitis after prolonged rupture of membranes at term

**Key points:**

- Understand the importance of a holistic approach for women and pregnant people presenting with possible pre-labour rupture of membranes at term.
- Individualise care for women and pregnant people and remain vigilant to potential risk factors.
- Provide information about options of immediate induction of labour and expectant management after rupture of membranes at term based on the NICE guidelines.
- Consider the clinical signs that should raise a clinical suspicion of chorioamnionitis.

## Maternity story

A 22-year-old woman (Mrs M) presented to the maternity unit at 36 weeks gestation in her second pregnancy. Mrs M was an asylum seeker and had arrived in the UK five days previously. She had not had the opportunity to register for antenatal care. Mrs M was a non-English speaker but one of the obstetric doctors at the maternity unit spoke her first language. She presented to the unit complaining of fever and feeling unwell. She reported that her husband and child had tested positive for Covid-19 two days previously with similar symptoms. Mrs M also tested positive for Covid-19 on a lateral flow test on arrival to the maternity unit and she was isolated and personal protection equipment (PPE) used in line with the contemporaneous guidance[2].

Mrs M stated that she had received regular antenatal checks in this pregnancy in her home country until two weeks ago. She reported no existing medical condition and there had been no concerns with her pregnancy so far. Mrs M had no medical records or documentation of her previous antenatal care with her.
Maternal observations included a heart rate of 120 bpm and temperature of 38°C, blood pressure 120/82mmHg, and a respiratory rate of 18 breaths per minute with an oxygen saturation of 97%.

Mrs M had no concerns about her fetal movements. A cardiotocogram (CTG) was commenced to check for fetal wellbeing and the CTG met the Dawes Redman criteria after 16 minutes. The CTG was categorised as normal. Booking blood samples with blood group and antibodies screening were taken and an urgent antenatal booking appointment was made for the next day. She was also referred for urgent fetal growth scan.

Mrs M was administered with paracetamol and intravenous (IV) fluid with reassessment after two hours. Mrs M's temperature had settled, and all her observations were normal, including oxygen saturation. Mrs M was considered suitable for community care for her Covid-19[2] after an obstetric review. A venous thromboembolic (VTE) risk assessment was undertaken, and she was classified low risk. She was advised to take paracetamol and stay hydrated and return if she had any further concerns. Mrs M was discharged home to attend the next day for her scheduled antenatal booking appointment and fetal growth scan.

Mrs M attended the next day for her appointments, reported feeling better and all her observations were within expected range. The growth scan confirmed her dates, identified the estimated fetal weight was within expected range and the liquor volume and umbilical cord dopplers were normal. Mrs M was reviewed in the antenatal clinic by an obstetrician. Her first pregnancy had been normal with an uncomplicated vaginal birth at term. A plan was made to review her again in two weeks, repeat the growth scan and to offer induction of labour at $40^{+0}$ weeks gestation as she had booked late in her pregnancy in the UK.

At $37^{+1}$ weeks gestation, Mrs M called the maternity unit at 14:00 reporting leaking clear liquor since 08:00 with no pains. She was advised to attend the maternity unit for review. Mrs M arrived at 18:30. She was still isolating for Covid-19 and the lateral flow test was still positive, so she was seen in the single room in the maternity unit. She reported mild uterine tightenings and had taken paracetamol prior to coming to the hospital. A speculum examination at 19:15 hrs confirmed spontaneous rupture of membranes (SROM) with clear liquor seen draining. Mrs M reported that her baby was moving normally and a CTG was commenced to confirm fetal wellbeing. The baseline fetal heart rate was 150 bpm and the CTG was categorised as normal. Mrs M's abdomen was soft with mild palpable uterine tightenings. Mrs M's observations included a heart rate of 120bpm and temperature of 37.4°C, blood pressure was 110/78mmHg, with a respiratory rate of 16 breaths per minute and an oxygen saturation of 98%. There was 2+ of ketones on urinalysis.

An obstetrician reviewed Mrs M at 20:00 in relation to her tachycardia in the context of confirmed SROM. The obstetric doctor thought that the maternal observation was likely due to her previously diagnosed Covid-19 infection and dehydration. The doctor considered admission for observation but there was no single room available and therefore Mrs M was discharged home to return the following morning for induction of labour if she had not laboured spontaneously beforehand.

At 07:00 the following morning, the labour ward team called Mrs M. The father was on the phone translating for Mrs M. She was advised not to come to the hospital at 08:00 as planned because a single room was not yet available. She was asked to

attend at 13:00 instead. There was no documentation that Mrs M's symptoms or the fetal movements had been assessed during the call.

At 10:30 Mrs M presented early to the maternity unit as she was feeling generally unwell, and her baby was not moving as much as previously. Mrs M had a pulse rate of 140bpm and a temperature of 39.4°C, Blood pressure 100/65 and respiratory rate of 22 per minute and oxygen saturation of 92%. The CTG was commenced without using Dawes-Redman analysis, as Mrs M reported painful contractions. There was a baseline fetal heart rate (FHR) of 175 bpm with reduced baseline variability and shallow late FHR decelerations. The maternity unit midwife called the senior obstetrician for immediate review and there was an immediate clinical suspicion of chorioamnionitis. A vaginal examination was performed, and Mrs M's cervix was 2-3cm dilated. A plan was made to commence Mrs M on the septic pathway immediately and to expedite the birth by category 1 caesarean section under general anaesthesia. Oxygen, intravenous antibiotics, and intravenous fluid were initiated. Samples for blood culture, blood glucose, lactate, urea and electrolytes, clotting profile and full blood counts were taken[3].

Mrs M was transferred to the operating theatre at 11:10 and the baby was born at 11:19. There was a paediatric ST1 doctor in theatre at the delivery. The liquor was reported to be offensive, and the baby was warm to touch. The baby was floppy with no respiratory effort therefore the umbilical cord was cut immediately, and the baby was transferred to the resuscitaire.

Paired umbilical cord gases were taken. The baby was dried and stimulated but made no respiratory effort. The heart rate was auscultated and was less than 100 bpm. Five inflation breaths were given with chest rise seen. The heart rate was still less than 100bpm, so ventilation breaths were started, and a paediatric emergency call was made to ask for additional help. After 30 seconds of ventilation breaths, the heart rate was above 100 bpm but there was still no respiratory effort. Ventilation breaths were therefore continued. At ten minutes of age, the baby remained floppy with poor respiratory effort. The baby was intubated and transferred to the neonatal unit where intravenous access was secured, a septic screen sent and antibiotics administered at 30 minutes of age for suspected sepsis.

The baby continued to have a poor respiratory effort on the ventilator and remained floppy and unresponsive thereby meeting the criteria for therapeutic hypothermia[5]. Both parents were updated by the paediatric consultant using an interpreter. The baby was discussed with the regional neonatal intensive care unit (NICU) and the baby was passively cooled and transferred to the regional NICU where they were therapeutically cooled for 72 hours.

Mrs M was transferred to the same hospital on Day 1 to enable her to be closer to her baby. The baby had a rise in CRP and a lumbar puncture was undertaken. All cultures were negative, and antibiotics were stopped after five days.

An MRI was performed on day six, which showed a watershed predominant pattern of injury consistent with prolonged partial asphyxia. The placenta was sent for histological examination and the report showed acute chorioamnionitis and funisitis with a fetal inflammatory response.

The baby was discharged on day 15 of life with a plan for follow up to at least two years of age to monitor their development.

A local rapid review of the case concluded that Mrs M was a high-risk pregnancy in view of her recent asylum and arrival in the UK, a language barrier, late booking and Covid-19 infection. In the context of SROM at term and a maternal tachycardia, the review concluded that Mrs M should have been offered admission and induction of labour, regardless of her Covid-19 status. Mrs M reported that she would have opted for immediate IOL if it had been offered.

The review also concluded that regardless of risk factors women and pregnant people who present with pre-labour rupture of membranes at term should be offered the option of immediate induction of labour or expectant management for 24 hours.

It also highlighted the need for clear explanation of risks and benefits of each option and a clear safety netting advice to return to the hospital if there is any change in liquor colour, fetal movement, or general symptoms. Furthermore, telephone consultations should include, and document, enquiries about maternal symptoms and fetal movements.

## Learning Points

This case highlights the importance of:

- Comprehensive assessment for women and pregnant people presenting with spontaneous rupture of membranes at term, including potential indicators of ascending infection and information provision to support their decision making.
- Responding to a changing clinical situation, particularly where there are increased risks of complications.
- Exploring maternal and fetal wellbeing during telephone advice.
- Escalation of capacity issues and prioritising clinical needs in the maternity unit.

## Considerations for your hospital

- Is there a comprehensive risk assessment for women and pregnant people presenting with spontaneous rupture of membranes at term and clear written information providing clear safety netting advice[1]?
- Is there a robust system to assess maternal and fetal wellbeing when a delay in induction of labour after pre-labour rupture of membranes at term occurs?
- Is there written information available regarding pre-labour rupture of membranes at term explaining risks and benefits of the options of immediate induction or expectant management to support informed decision making[1,4]?

## What has happened as a result?

This case story is illustrative. If a similar case were to occur in real life, then it would be referred to NHS Resolution's Early Notification Scheme. NHS Resolution's in-house, specialist teams will review all available information about the care received, to decide whether there is any evidence of substandard care which could potentially result in compensation.

The expertise of NHS Resolution is used to proactively assess the legal risk and provide early support to families where liability is established.

NHS Resolution supports an open, transparent discussion between clinicians and families following adverse events[6]. The scheme is also designed to improve the experience for NHS staff by time limiting the need for protracted involvement in the legal process and rapidly share learning.

It is very important to note that no amount of money is comparable with the loss of a child or a child living with lifelong neurological injuries. Where poor outcomes occur because of deficiencies in care, NHS Resolution aims to resolve all such claims or cases fairly and as quickly as possible.

The current compensation cost to the NHS for a baby who has long term severe brain injury is on average £13.5 million. The human costs to the babies, families and clinical teams involved are immeasurable.

**Resources:**


1- Inducing labour NICE guideline NG 207 Published 04 November 2021
Induction of labour

2- Coronavirus (COVID-19), infection in pregnancy RCOG updated 15 December 2022
COVID -19 Guideline

3- Sepsis: recognition, diagnosis and early management. NICE guideline NG51 (2016, updated 2017), recommendation 1.6.1
Sepsis Guideline

4- Obtaining Valid Consent RCOG Clinical Governance Advice No. 6
Obtaining Valid Consent

5- Resuscitation Council UK Newborn resuscitation and support of transition of infants at birth Guidelines May 2021
Neonatal Resuscitation

6- NHS Resolution Saying Sorry June 2017 Read saying sorry (duty of candour) - NHS Resolution
Saying Sorry

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