NHS Resolution

Case story
Home Birth

Advise / Resolve / Learn

This case story is illustrative based on a range of examples of real events. NHS Resolution is sharing the experience of those involved to help prevent a similar occurrence happening to patients, 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:

Management of labour during home birth

Key points:

- The importance of robust antenatal discussions around choice of place of birth to ensure the mother makes an informed decision[1,2]
- Ongoing risk assessment during pregnancy and labour in order to determine an appropriate care pathway with the woman and her partner
- Recognition of deviation from normal with consideration of early transfer to hospital in response to abnormality

Maternity story:

A mother was booked for low risk care in her second pregnancy. The midwife provided information regarding choice of place of birth and advised that as she had no risk factors and had previously had a spontaneous vaginal birth, a home birth or birth in a midwife-led unit were suitable options for the mother[3]. The mother expressed an interest in home birth and was provided with written information to help support her choice. The information included brief advice regarding specific situations when a transfer to hospital may be indicated.

The pregnancy continued uneventfully and at 34 weeks the plan for a home birth was confirmed. The mother received antenatal care from a team of community midwives[4] to ensure that someone known to her would be present during labour. A risk assessment form completed at 36 weeks gestation indicated that the mother remained low risk and a home birth was planned[5]. During the appointment the midwife arranged to visit the mother at home at 38 weeks in order to review her birth plan, the home environment and discuss potential indications for transfer to hospital in more detail, including transfer times[5]. The mother arranged to hire a birth pool for her use during labour.

At 37+6 weeks gestation the mother contacted the on-call community midwifery team at 12:30 reporting that she had been experiencing regular contractions since 07:00 and that they had increased in strength/frequency and were now 3 minutes apart. The midwife attended the mother's home, arriving at 13:00. A full assessment of maternal and fetal wellbeing was undertaken and there were no concerns. The fetal heart rate (FHR) was auscultated using a hand held Doppler at 146 beats per minute (bpm) for 1 minute as the contraction was subsiding. Abdominal palpation identified

the presenting part was 2/5ths palpable and the baby was in a right occipito-anterior (ROA) position. Vaginal examination (VE) confirmed that labour had established, the mother's cervix was fully effaced and 5cms dilated. The membranes were felt and left intact. The mother entered the birthing pool at 13:25.

The midwife carried out Intermittent Auscultation (IA) of the FHR at 15 minute intervals, for 1 minute after a contraction[3], and documented the FHR as a number that remained within normal limits. The mother's pulse was recorded every hour and her temperature and blood pressure were recorded every 4 hours and were normal. The temperature of the water in the birth pool was recorded every hour and water temperature was adjusted so that it remained just below 37.5°C [3].

A VE was undertaken at 17:15 to assess progress in labour and the cervix was 7cms dilated, the cephalic presentation was at the level of the ischial spines and the membranes remained intact. The FHR was auscultated following the examination and after a contraction and was documented at 152bpm.

IA continued every 15 minutes and was documented as a number, remaining within normal limits.

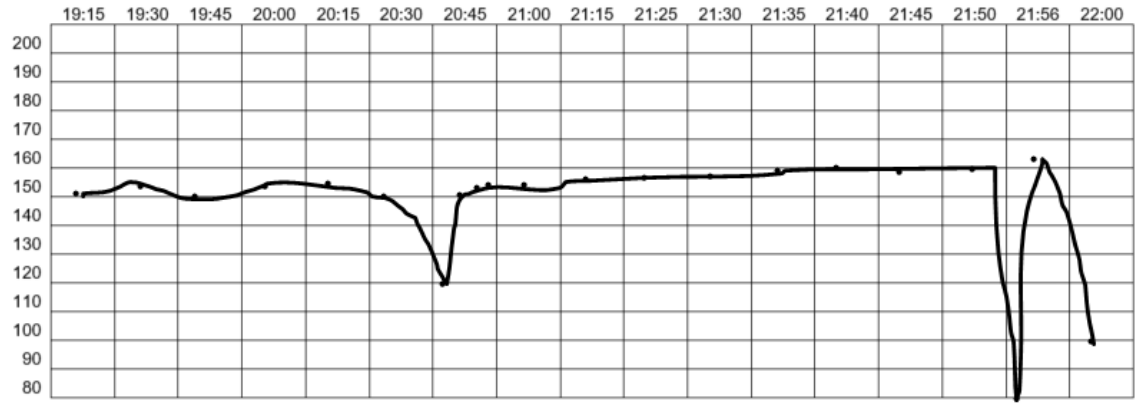
Spontaneous rupture of membranes was noted at 19:15 and clear liquor observed. Shortly afterwards the mother reported an urge to push at the height of contractions. The midwife encouraged the mother to breathe through her contractions and continued to auscultate the FHR every 15 minutes with the FHR recorded within normal limits[Fig.1]. The mother's pulse was palpated at 95bpm and the maternal temperature was 37.2°C

Involuntary pushing was observed intermittently by the midwife from 20:00, and she contacted the local maternity unit to request a second midwife to attend as she felt the birth may be imminent. The midwifery co-ordinator also requested an update to either confirm the birth of the baby or progress in labour following the next vaginal examination.

The mother continued to push involuntarily over the next 30 minutes, IA of the FHR continued every 15 minutes after a contraction[3] and the FHR remained within the normal limits [Fig.1] The second midwife arrived at 20:35 and after a discussion with the attending midwife it was agreed that a vaginal examination to assess progress would be appropriate in light of the ongoing involuntary pushing. The mother left the pool, abdominal palpation found the baby was in an ROA position and the presenting part was 1/5th palpable, a VE at 20:45 found the cervix was 9cms dilated. Immediately following the VE, and after the next contraction IA recorded the FHR at 120bpm, accelerating within a minute to 155bpm. The midwife repeated the IA after the next two contractions[3] and was reassured that the FHR was 150 -155bpm. IA of the FHR continued every 15 minutes thereafter.

The mother returned to the pool, and she was encouraged to drink in order to maintain hydration.

Figure. 1 Summary of Fetal Heart Rate



The mother began to actively push with every contraction at 21:25. IA of the FHR was increased to every five minutes[3] and the rate was recorded between 155-160bpm[Fig.1]. The labour ward co-ordinator was contacted and updated on progress and that the birth was imminent.

The vertex advanced slowly with maternal effort, at 21:50 the FHR was auscultated after a contraction at 120bpm increasing to 160bpm within one minute[6]. The second midwife made preparations for the birth of the baby, including setting up an area where neonatal resuscitation equipment was ready for use should it be required.

The midwife encouraged the mother to continue pushing. At 21:56 the FHR was auscultated at 80bpm after a contraction increasing to 162bpm. The midwife explained to the mother that she was concerned about the baby's heart rate and requested that the mother leave the pool so that a full clinical assessment could be undertaken[7]. The mother left the pool at 22:00, the FHR was auscultated at 100bpm and the midwife explained to the mother that an episiotomy may be required to expedite the birth because of concerns about the fetal heart rate. The mother gave consent for an episiotomy, however the baby's head delivered with maternal effort during the next contraction. The FHR could not be auscultated and at 22:03 the baby was born.

The baby was pale and floppy, with a heart rate below 100bpm. The second midwife transferred the baby to the pre-prepared area after the umbilical cord was clamped and cut. The baby was dried and stimulated, and five inflation breaths were commenced. The first midwife contacted the ambulance service and requested an urgent transfer to hospital.

The midwife attending to the baby noted that there was no chest rise associated with the inflation breaths and the baby remained pale and floppy. The position of the baby's airway was adjusted and using a two person jaw thrust (with assistance from the first midwife) a second set of inflation breaths was administered. Good chest rise

was seen. There was no increase in the heart rate so 30 seconds of ventilation breaths were given (with good chest rise). After this, the heart rate was auscultated as less than 60bpm so chest compressions were commenced. When reassessed at 30 seconds, the baby's heart rate had increased to over 100bpm and the colour had improved. Chest compressions were stopped but the baby did not make any spontaneous respiratory effort and the midwives continued to administer ventilation breaths. The baby was floppy and unresponsive.

The ambulance arrived at 22:30 and the plan was for the baby to be transferred to the nearest hospital, whilst receiving ventilation breaths. The ambulance crew contacted the labour ward co-ordinator and advised that they were on their way to hospital with the baby, and that a second crew had been despatched to transfer the mother. The crew were advised to transfer the baby to the labour ward. The midwifery co-ordinator informed the neonatal team that the baby was being transferred into hospital.

The baby arrived at the labour ward at 22:50 and was met by the neonatal team who continued with neonatal resuscitation. The baby had begun to gasp but was requiring ongoing respiratory support. The baby was intubated and transferred to the neonatal unit. A capillary gas taken on admission showed a pH of 6.9, CO_2 of 8.2, Base excess of -12 and a lactate of 5mmol/L. The baby was lethargic with reduced primitive reflexes and had a mildly abnormal CFM trace.

The baby was cooled and rewarmed after 72 hours[11]. MRI at six days showed changes associated with hypoxic ischaemic encephalopathy. The baby was discharged home after 15 days with neonatal follow up arranged.

Learning points:

This case highlights the importance of:

- Antenatal discussions regarding home birth, including reasons for transfer to hospital and providing appropriate information to women to facilitate informed decision making.
- Risk assessment at the onset and throughout labour, being alert to any changes in clinical risk factors and making an appropriate plan of care in consideration of these. In this case the progress in labour was only just adequate in a multiparous mother.[3] When this is considered in the context of the FHR changes, a discussion with the midwifery co-ordinator or an obstetrician may have led to a clear plan of care including an agreed threshold to transfer the mother
- Appropriate use of IA including frequency of recording and recognition of changing baseline rates to facilitate appropriate care planning. There was a rise in baseline over the course of the labour that continued after the onset of involuntary pushing, which may have been indicative of a deteriorating clinical picture and a transition between the first and second stage of labour requiring consideration of increasing the frequency of IA[3,6 8]
- Observation of other clinical indicators of full dilatation, such as external signs, should be noted and if these are not present offer a vaginal examination to confirm the onset of the second stage of labour to inform care planning.

- Importance of maintaining regular contact with the maternity unit to keep them apprised of the clinical picture and provide opportunity to consider any changes to the care plan
- Initiating transfer to hospital when there are early signs of a deteriorating clinical picture, such as slow progress in labour, or where there are emerging FHR concerns to avoid delay
- Early preparation of neonatal emergency equipment, prior to the onset of the second stage, in anticipation of potential problems
- Good communication with the maternity unit and neonatal unit during transfer to ensure that clinical teams are prepared for the arrival of the mother and baby

Considerations for your hospital:

- Is written information provided to all women to facilitate informed decision making regarding place of birth?
- Do midwives use the NICE resource for midwives to inform discussions with women around choice of birth setting?[9]
- Do your discussions with women who are considering home birth include information about transfer times?
- Does current training in fetal heart rate monitoring specifically include IA in accordance with Saving Babies Lives Care Bundle v.2 and NHS Resolution Maternity Incentive Scheme[10] Safety Action 6?

What has happened as a result?

This case story is illustrative. If a similar case were to occur, then it would be referred to NHS Resolution as part of the Early Notification Scheme. NHS Resolution's in-house, specialist team 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 staff is used to proactively assess the legal risk, investigate care, and provide early support to families where liability is established.

NHS Resolution supports an open, transparent discussion between clinicians and families following adverse events[12]. 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 sharing learning from avoidable harm.

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 as a result 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 £12 million. The human costs to the babies, families and clinical teams involved are immeasurable.

Resources:

1. Intrapartum Care for healthy women and babies NICE CG 190 published December 2014, Information for the public revised February 2017
https://www.nice.org.uk/guidance/cg190/ifp/chapter/Choosing-where-to-have-your-baby

2. Where to give the birth: the options
https://www.nhs.uk/pregnancy/labour-and-birth/preparing-for-the-birth/where-to-give-birth-the-options/

3. Intrapartum Care for healthy women and babies NICE CG 190 published December 2014, revised 2018
Intrapartum care for healthy women and babies NICE CG 190

4. Implementing Better Births: Continuity of Carer Five Year Forward View December NHS England 2017
Implementing-better-births-continuity-of-carer

5. Midwifery care in labour guidance for all women in all settings. RCM Blue Midwifery Blue Top Guidance No. 1 November 2018
Professionals-blue-top-guidance.pdf (rcm.org.uk)

6. Evidence Based Guidelines for Midwifery-Led Care in Labour Intermittent Auscultation (IA) Royal College of Midwives (RCM) 2012
Evidence-based-guidelines-intermittent-auscultation.pdf (rcm.org.uk)

7. Immersion in Water During Labour and Birth Royal College of Obstetricians and Gynaecologists/Royal College of Midwives Joint Statement No. 1 2006
RCOG RCM Water Birth (activebirthpools.com)

8. Each Baby Counts: 2015 Full Report. London: RCOG, 2017. Royal College of Obstetricians and Gynaecologists
Each Baby Counts (rcog.org.uk)

9. NICE Choosing place of birth: resource for midwives 2014
NICE choosing place of birth - resource for midwives

10. Maternity Incentive Scheme Year 4 Technical Guidance
Maternity Incentive Scheme YEAR 4

11. Therapeutic hypothermia for Neonatal Encephalopathy: A Framework for Practice
BAPM November 2020
Therapeutic Hypothermia for Neonatal Encephalopathy | British Association of Perinatal Medicine (bapm.org)

12. NHS Resolution Saying Sorry June 2017
Saying Sorry