

Case story

Intermittent auscultation (IA) of the fetal heart rate in the second stage of labour

This case story is fictional but is a reflection of cases submitted to the NHS Resolution Early Notification scheme. The purpose is to share the experience of those involved to help prevent similar occurrences happening to patients, families and staff. It should prompt organisations to consider their practice in relation to nationally recommended guidance.

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:

Intermittent auscultation (IA) of the fetal heart rate in the second stage of labour

Key points:

- National Institute for Health and Clinical Excellence (NICE) guidance¹ regarding fetal heart rate (FHR) auscultation in the second stage of labour states that it should be performed immediately after a contraction for at least one minute, at least every five minutes.
- The active second stage of labour is defined by NICE guidance¹ as ‘expulsive contractions with a finding of full dilatation of the cervix or other signs of full dilatation of the cervix’. Themes from early notification cases have shown that despite these clinical signs of the second stage of labour being recognised, e.g. anal dilation and expulsive contractions, the increase in frequency of IA does not change accordingly.
- Midwives should be alert to the possibility of a quick transition between the different labour stages by using their clinical skills and judgement.²
- NICE guidance¹ does not differentiate between the passive and active second stage regarding the frequency of IA, however, NHS Resolution has observed that some local trust guidance does vary, e.g. 15 minute IA is carried out in the passive second stage of labour.
- If the midwife is unable to auscultate the FHR in the second stage due to maternal position or descent of the presenting part the midwife should ask a colleague for assistance immediately. The mother should be helped to find an alternative position or fetal monitoring method, to ensure that accurate ongoing fetal monitoring can be carried out.
- Mothers should be informed if there are difficulties monitoring the fetal heart. The mother should be advised of the risks and benefits of this to enable her to make an informed choice about assessing her baby’s wellbeing in the second stage of labour.

Maternity story

A mother in her first pregnancy, with no significant medical history, was booked for midwife-led care.

At 40+1 week's gestation she attended the maternity triage and was in spontaneous labour, 5cm dilated cervix with intact membranes. After a full maternal and fetal risk assessment³ she was considered to be suitable to continue midwife-led care in the birthing centre. She entered the pool as requested in her birth plan and stated that she hoped to avoid unnecessary medical intervention wherever possible. In the first stage of labour, assessment of the FHR was undertaken with IA every 15 minutes following a contraction for one minute and was plotted on the partogram¹.

Four hours later a vaginal examination was performed and cervical dilation was 9cm. Shortly afterwards a small 'pop' was experienced by the mother and it was thought that spontaneous rupture of membranes had occurred. The liquor appeared clear in the water. Twenty minutes later the hospital records reflect that the mother had external signs of full dilation and began involuntary pushing at the height of the contraction. IA of the FHR continued every 15 minutes as the clinician considered this to be a passive second stage.

After 40 minutes the mother became distressed and requested an assessment of her progress. A vaginal examination was performed and the cervix was fully dilated. Attempts at five minute auscultation of the FHR were then commenced as full dilation was confirmed.

Due to the mother's position, it was difficult to monitor the FHR every five minutes following contractions; the hospital records show recordings of the FHR occurred at intervals of between four and ten minutes. There is no record of the mother being informed of the difficulty in performing IA or that there was an escalation for help from a colleague. After an hour and 30 minutes of active pushing, the mother was transferred to the labour ward due to suspected delay in the second stage of labour.

A cardiotocograph (CTG) was commenced and the FHR baseline was 160bpm with variable deep decelerations. The mother was transferred to theatre for a trial of instrumental birth. The baby was born via forceps within an appropriate time and immediately taken to the resuscitation equipment due to poor respiratory effort; the neonatologist was present. Thick meconium was observed at birth.

The Apgar score was recorded as one at one minute and a neonatal emergency call was activated. Full neonatal resuscitation was carried out in accordance with Resuscitation Council guidelines⁴. The Apgar score at five minutes of age was five and the baby was intubated at seven minutes due to low oxygen saturation levels and transferred to the neonatal intensive care at 15 minutes of age. Cord blood gases indicated severe metabolic acidosis and the baby remained hypotonic with abnormal movements. A decision for therapeutic cooling was taken.

The baby was transferred to a tertiary unit and remained in the neonatal intensive care unit for four days. The baby required a further five day stay in the neonatal unit for

feeding support. An MRI noted some ischaemic changes and a diagnosis of Hypoxic Ischaemic Encephalopathy Grade 2 was made.

The baby was discharged home bottle feeding with continued breastfeeding support, with planned neonatal follow up in three months' time.

Learning points

Fifteen minute IA of the FHR was carried out appropriately in the first stage of labour for one minute immediately following a contraction, and was recorded as a single number on a partogram. The trend of an increase in baseline was not recognised.

IA of the FHR should not have continued every 15 minutes, when there were clear signs of the second stage of labour. There should have been a change in the frequency of auscultation of the FHR to; listening for one minute at least every five minutes following contractions in the second stage of labour¹. This should have occurred even in the absence of a vaginal examination confirming full dilation. According to the NICE guidance¹, the expulsive contractions observed in this case define the active second stage.

NHS Resolution case reviews have highlighted that 15 minute auscultation sometimes continues even in the presence of the expulsive contractions and external signs of full dilation.

The intrapartum documentation outlined that the mother received inappropriate 15 minute IA for at least an hour as she was in active second stage labour. At least five minute IA was indicated and this could be considered to be a missed opportunity to recognise the potential deterioration of the condition of the baby.

Considerations for your hospital

- If you have local guidance that differentiates the frequency of IA between the passive and active second stage of labour, have you evaluated this in relation to any adverse neonatal outcomes?
- Does your one day fetal monitoring training, as recommended by Saving Babies Lives³, include and assess clinicians' competency regarding IA of the FHR, and include the transition to the second stage of labour?
- Does your partogram make it easy for clinicians to be able to document the fetal heart rate at five minute intervals in the second stage of labour?
- Do you have a buddy system ('fresh eyes' or 'fresh ears') to regularly review fetal wellbeing and appropriately risk assess women for IA and continued midwifery-led care in accordance with the Saving Babies Lives³ recommendations?
- Do you have patient information for mothers regarding the advantages and disadvantages of fetal monitoring methods in labour to enable them to make an informed choice?
- Do you have a psychologically safe culture that empowers your maternity team to ask for help from colleagues when required?

What has happened as a result?

This case is an example of those referred to NHS Resolution as part of the Early Notification scheme in light of the active cooling required and therefore the potential neonatal brain injury sustained.

Cases such as these are reviewed further to consider whether the injury could and should have been avoided. Where poor outcomes occur as a result of deficiencies in care NHS Resolution aims to resolve all such cases as fairly and as quickly as possible. NHS Resolution will work with the family to ensure that, if appropriate, they are supported and compensated.

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.

The current compensation cost to the NHS for a baby who has a long term severe brain injury is on average £10 million.

The human costs to the baby, families and clinical teams involved as a result of such cases are immeasurable.

Resources:

1. Intrapartum Care for healthy women and babies – Clinical guidance NICE National Institute for Health and Care Excellence, (2014, revised 2018)
<https://www.nice.org.uk/guidance/cg190>
2. Royal College of Obstetricians and Gynaecologists (2015) Each Baby Counts
<https://www.rcog.org.uk/en/guidelines-research-services/audit-quality-improvement/each-baby-counts/ebc-2015-report/>
3. NHS England (2019) Saving Babies' Lives Care Bundle Version 2
<https://www.england.nhs.uk/wp-content/uploads/2019/07/saving-babies-lives-care-bundle-version-two-v5.pdf>
4. Resuscitation Council (UK) (2015) Newborn Life Support
<https://www.resus.org.uk/publications>

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