

# RISK CASE STUDY

## Case: Induction and Augmentation of Labour and Fetal Health Surveillance

### Abstract:

An infant delivered by forceps was subsequently diagnosed with severe hypoxic ischemic encephalopathy (HIE). Clinical decisions surrounding fetal surveillance and response in the presence of intravenous (IV) oxytocin and team communication, were identified by peer experts as contributing factors.

### Case summary:

A gravida 1 para 0 patient, with a history of gestational diabetes, was admitted to a community hospital at 37 weeks gestation. The patient at admission reported that she had experienced a spontaneous rupture of the amniotic membranes and was experiencing contractions approximately every two minutes. The fetal heart rate (FHR) was determined to be normal (between 140 to 150 beats per minute), with vital signs and blood glucose within normal and expected ranges. However, a small amount of vaginal bleeding was noted.

Half an hour after the patient's admission, electronic fetal monitoring (EFM) was commenced for a period of 9 minutes and subsequently discontinued.

Two hours later, EFM was restarted and continued, until 10 minutes later, when the patient was encouraged to ambulate.



An hour and a half later, the patient was noted to be experiencing mild, irregular contractions. The FHR was 130 beats per minute and normal, with no decelerations documented. Shortly thereafter, an intravenous line was inserted and antibiotic administration was commenced for the treatment of Group B Streptococcus (GBS), as per a telephone order from the attending obstetrician. Half an hour later, EFM was discontinued.

Twenty minutes later, the attending obstetrician assessed the patient and provided orders indicating the patient was to receive one half the regular dose of A.M. and P.M. insulin, with blood sugar testing to be performed four times daily (before breakfast, before lunch, before supper and at or near bed time).

Ten minutes later, the patient consumed her afternoon meal. A later review of the patient's chart indicated the involved nurse did not measure the patient's blood sugar at this time, as per the medical directives.

Two and a half hours later, the fetal heart rate was assessed at 140 beats per minute, with "+" variability. The patient's contractions were noted to be mild, occurring every two to four minutes and lasting 30 to 40 seconds. EFM was applied. Ten minutes later, the attending obstetrician performed a vaginal examination, which revealed the patient's cervix to be six to seven centimetres dilated and fully effaced.

Over the course of the next two hours, the fetal heart rate ranged from 128 to 140 beats per minute and was noted to be normal, with no observed decelerations. The patient's contractions remained mild to moderate, lasting between 30 to 50 seconds. The involved nurse subsequently proceeded to discontinue EFM.

### Key Words:

Obstetrical  
Emergency

Breech

On Call and  
Contingency Plans

Operating Room

C-Section

Communication

Escalation

Attendance at Birth

Role Confusion

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One hour later, EFM was recommenced. Forty minutes later, a vaginal examination conducted by the involved nurse revealed that the patient's cervix remained unchanged from the prior examination conducted by the attending obstetrician. However, the involved nurse documented findings of bloody vaginal discharge and "caput" of the fetal head. At this time, the involved nurse documented she received a verbal order from the attending obstetrician to commence an infusion of oxytocin to augment the patient's labour.

The nurse commenced the administration of oxytocin at 12 mls/hour. The fetal heart rate was noted to be 128 beats per minute and normal, with no decelerations observed. Uterine contractions were described as mild to moderate in strength, occurring every five minutes and lasting 40 to 45 seconds.

Twenty minutes later, the nurse increased the rate to 24 mls/hour. The fetal heart rate and rate/duration of contractions were noted to be unchanged from the previous assessment.

Twenty minutes later, the nurse again increased the rate of oxytocin, to 36 mls/hour. At this time, the patient expressed pain and requested epidural anaesthesia. The fetal heart rate was noted to be unchanged from the previous assessment, with the uterine contractions described as mild to moderate in strength, occurring every three to five minutes for a duration of 35 to 40 seconds. Fifteen minutes later, the on-call anaesthesiologist arrived to insert the epidural catheter. During the initiation of the epidural, EFM was discontinued.

Following the insertion of the epidural and the recommencement of EFM, the fetal heart rate was noted to have a baseline of 130 beats per minute, with variable decelerations observed.

Twenty minutes later, the involved nurse increased the rate of oxytocin to 48 mls/hour. At this time, the fetal heart rate was noted as having a baseline rate of 120 beats per minute, with observed decelerations.

Half an hour later, the involved nurse conducted a vaginal examination, which revealed the cervix to be fully dilated. Bloody vaginal discharge was again noted. The fetal heart rate was interpreted to have a baseline of 125 beats per minute and was "slow to recover" from decelerations which decreased to 80 to 90 beats per minute.

Twenty minutes later, the involved nurse increased the rate of oxytocin to 72 mls/hour. The rate was increased to 84 mls/hour fifteen minutes later.

Ten minutes later, the nurse commenced the administration of oxygen and increased the rate of intravenous fluid infusion, noting fetal heart rate decelerations down to 100 beats per minute and lasting for approximately one minute.

Over the course of the next two hours, the involved nurse continued to infuse oxytocin at a rate of 84 mls/hour, with the patient being encouraged to begin pushing. After a second stage of labour lasting two hours, a live female infant was born via a forceps-assisted delivery. At birth, Apgars were 3, 7 and 8 at 1, 5 and 10 minutes respectively and the infant was described as pale, not breathing, with minimal muscle tone or response to stimulation. Artificial respirations were subsequently provided for a period of two minutes. Within 24 hours after birth, the infant was transferred to a paediatric facility, with a tentative diagnoses of borderline prematurity, possible sepsis, apneic spells, episodic bradycardia, neonatal seizures and severe HIE.

### Medical legal findings:

Expert review of the case was critical of the care provided to the patient, noting the involved nurse had failed to discontinue IV oxytocin, commence intrauterine resuscitation measures and obtain immediate medical assistance in view of ongoing abnormal FHR patterns. Furthermore, expert review of the case criticized the quality of the involved nurse's documentation, noting the nurse's failure to

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consistently document the FHR when performed, as well as failing to adequately document reported verbal medical orders. Expert review also questioned the involved nurse's demonstrated clinical assessment skills, noting the nurse's documented interpretations of the FHR were inconsistent and unresponsive to concerning trends.

### Reflections:

Reflecting on your practices as well as your facility's fetal monitoring and induction/augmentation policies, procedures and processes:

1. Verbal orders for the management of GBS and IV oxytocin for labour augmentation were accepted by the nurse. Discuss whether verbal orders for high-alert medications – such as IV oxytocin – is a good/acceptable practice. Should verbal orders become routine practice in obstetrics?
2. Describe the purpose of a 'medical directive'. Are they the same as a 'standing order'? Is the implementation of a medical directive discretionary if the patient meets the criteria for the medical directive? What should take place if a medical directive is not implemented where indicated? Should the patient's MRP be informed? What should be documented whenever a medical directive is initiated?
3. Reflecting on your local policies, what method of fetal surveillance is expected for patients undergoing labour induction and/or augmentation? Is the local policy reflective of the bedside practice?
4. The nurses in this case recall implementing intrauterine resuscitation efforts in the presence of abnormal tracings however they did not document the interventions. Discuss whether healthcare providers can safely rely on what their 'normal practice' would be in similar circumstances, in the absence of good documentation during legal and regulatory body proceedings.
  - a. Discuss why the health record is often viewed as the ultimate source of the 'truth' where two or more parties disagree as to the facts leading up to, during and after a patient incident.
5. Reflecting on your local policies and practice expectations, what fetal assessment findings are expected to be communicated to the patient's MRP? For example, is the ongoing absence of accelerations or a change in baseline to be reported? What about isolated incidents of a late deceleration versus a late deceleration pattern? Is there consistency and agreement across the interdisciplinary team as to what should trigger notification (or consult) of a physician and what clinical details are to be communicated?
6. The rate of oxytocin was increased several times despite the presence of abnormal FHR patterns. At one point the rate of infusion (i.e. 84 ml/hour) was turned off as the result of fetal bradycardia and uterine tachysystole. Four minutes later it was resumed at the same rate. The nurse recalls it was the obstetrician who requested the rate to be resumed at the original rate. Discuss the nurse's decision to resume the rate of infusion. If the nurse had disagreed with the obstetrician's order to resume the infusion, what should have taken place? Discuss your program's culture encouraging and supporting healthcare providers to escalate their care concerns in a collegial manner if they feel the care or management decisions are putting the patient at risk. If not in place, what steps could be taken to improve the local culture?