Obstetrician and Gynaecologist, Dr C

A Report by the

Health and Disability Commissioner

(Case 00HDC09324)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Parties involved

Mr A	Complainant
Mrs B	Complainant / Consumer
Dr C	Provider / Obstetrician and Gynaecologist
Baby D	Consumer (deceased)
Dr E	Obstetrician and Gynaecologist
Ms F	Independent Midwife
Ms G	Service Manager of Maternal and Children's Health at the public hospital
Dr H	Perinatal Pathologist
Dr I	Obstetrician and Gynaecologist
Professor J	Clinical Pathologist

Independent expert advice was obtained from Dr Kevin Hill, an obstetrician and gynaecologist, and Dr David Cook, an obstetrician and gynaecologist.

Complaint

On 7 September 2000 the Commissioner received a complaint from a lawyer on behalf of Mr A and Mrs B concerning obstetrician Dr C. The complaint was that:

- *On 14 July 1997 at a public hospital, Dr C decided to use Kielland's forceps to try and deliver Baby D, who was a mid-cavity (station +1) occipito posterior presentation. This decision was inappropriate because:*
  - *The use of Kielland's forceps is a high risk delivery method.*
  - *There were no indications of foetal or maternal distress which would indicate the delivery needed to be expedited.*
  - *The attempt did not take place in an operating theatre with ready access to an emergency Caesarean section should it be unsuccessful.*
  - *On 16 July 1997 Baby D died from an intracranial haemorrhage caused by this use of forceps.*
- *Dr C did not advise Mr A and Mrs B about the different options available for delivering the baby, or communicate effectively with them during the delivery.*

An investigation was commenced on 11 October 2000.

Information reviewed

- Relevant medical records
- Relevant ACC records
- Coroner's findings and briefs of evidence presented during the inquest

Information gathered during investigation

Dr E, obstetrician and gynaecologist, was Mrs B's LMC (Lead Maternity Caregiver) in 1997. Mrs B also engaged the services of a midwife, Ms F, who had two consultations with Mrs B during her pregnancy.

Dr E was on holiday over the weekend of 14 July 1997 when Mrs B went into labour at 40 weeks and two days' gestation. Dr C, duty consultant obstetrician at a public hospital, acted as locum LMC. Dr E left Mrs B's antenatal notes with Dr C. Dr C stated that Dr E had recorded 13 uncomplicated antenatal visits from Mrs B during which no specific concerns, preference, or requests as to the mode of delivery were documented. Dr C stated that Dr E did not communicate to him any specific instruction or caution regarding Mrs B.

Mrs B explained that she had no choice about Dr C providing her care. When Dr E informed Mrs B that she would be on leave, Mrs B asked for two other obstetricians to take over her care but they too were both on leave at that time. Of the two remaining choices, one was Dr C and Mrs B understood that the other one would clash with her midwife. Mrs B therefore decided, since she did not know any of the alternative obstetricians, to take whoever was on duty.

Mrs B telephoned Ms F at about 5.00am on 14 July 1997 to say that she was in labour. Ms F asked her to go to the delivery suite at the hospital. At 5.05am Mrs B was admitted to the delivery suite, having had regular uterine contractions every two to three minutes since 3.20am. Mrs B complained of being very uncomfortable when she arrived at the delivery suite. Ms F assessed Mrs B on admission and found her cervix to be 8-9cms dilated and the baby's head to be 1cm above the ischial spines (bony outcrops in the maternal pelvis). There was no "show" and there had been no membrane rupture. Her blood pressure was 112/62. Ms F stated that Mrs B asked her to stop the vaginal examination, and said that she was too distressed for her membranes to be artificially ruptured.

At 5.30am Mrs B asked for pain relief and was given an intramuscular injection of pethidine and Maxolon. She was placed on a cardiotocograph (CTG) to monitor the foetal heart rate. At 5.45am her blood pressure was 130/90. Ms F explained that as Mrs B's blood pressure had not been raised during her pregnancy, she presumed that pain and anxiety had contributed to this rise. Ms F checked Mrs B for other symptoms of pre-eclampsia (headache, indigestion, visual disturbance or oedema) and there were none. Pre-eclampsia is a potentially fatal condition characterised by the accumulation of excess fluid, an excess of serum proteins and high blood pressure. At 5.55am foetal heart rate decelerations to

approximately 80bpm (beats per minute) persisting for three to four minutes were recorded. As the decelerations persisted, Ms F had Mrs B change into a right then left lateral position. After one or two minutes Ms F called Dr C, who said that he would come to review Mrs B directly.

Ms F transferred Mrs B from the family room to the first stage room at approximately 6.00am. At this point the CTG showed 160-170bpm. Mrs B had no pulsing sensations vaginally.

Dr C reviewed Mrs B's notes and CTG tracings, found the foetal heart rate to be normal, and was unable to find anything significant in her notes relating to the foetal bradycardia (slowness of the heartbeat). Dr C then examined Mrs B and noted that she was not distressed and appeared to have good pain relief from the injection given by Ms F.

Dr C stated that although the foetal heart rate continued to be reactive and normal, Mrs B's blood pressure was now elevated, at 170/110 at 6.15am. Mrs B did not have any symptoms or signs of pre-eclampsia at this stage and no urine specimen was available for testing. Dr C explained that his examination revealed that the cervix was 8cms dilated, the foetus was of average size, the head was presenting, and the vertex (top of the baby's head) was presenting at the level of the spine, and was well applied to the cervix. Membranes could not be felt and an attempted artificial rupture of membranes (ARM) to exclude the presence of meconium produced no liquor. (Meconium is the first bowel motion from a newborn baby, composed of cellular debris, mucus and bile pigments. The presence of meconium in the liquor/amniotic fluid during labour can indicate foetal distress.)

Dr C stated that as a result of his findings and because there was no indication of a preferred method of delivery, he allowed the labour to continue. His management plan at this stage was to provide continuous foetal heart rate monitoring while awaiting full dilatation, and administer epidural analgesia to control the raised blood pressure and provide pain relief.

Dr C intended to reassess Mrs B two hours later, at approximately 8.00am, unless otherwise indicated. Nursing staff were to inform him of any further foetal heart rate abnormalities. Dr C had noted Mrs B's raised blood pressure but he stated that as it was asymptomatic and the epidural would help lower it, no drug therapy was required.

Dr C said that he discussed with Mr A and Mrs B the proposed management plan and his decision to allow the labour to continue, and said that they were happy with the plan. Dr C confirmed that it was mentioned during this discussion that the epidural would also be useful if an instrumental delivery or Caesarean section were required, and that at this stage Mr A and Mrs B did not express any concern or preference, either to the midwife or himself, as to the mode of delivery.

Ms F stated that both she and Dr C advised Mrs B to have an epidural in view of her raised blood pressure, probable forceps delivery, and possible Caesarean section if the foetal heart rate were to become problematic. They verbally agreed that Dr C would reassess Mrs B two hours later.

At 6.25am an anaesthetist inserted an epidural without any complications. Over the next two hours, Mrs B's blood pressure was elevated, at what Dr C described as the upper limit of normal, but stable.

Ms F explained that at 6.30am Mrs B's blood pressure was 180/93 and the foetal heart rate had improved and was normal. At 9.00am Mrs B's blood pressure was 140/92, she had no headache or visual disturbances, and the foetal heart rate was 160bpm.

At 7.30am Mrs B reported feeling pressure in her bottom. Her blood pressure was 159/84, pulse 80, and the foetal heart rate 134bpm. The foetal heart rate was similar at 7.45am, variability 8-10bpm with accelerations. At 8.00am Mrs B's blood pressure was 146/90 and she was comfortable and relaxed. Ms F topped up the epidural as Mrs B was feeling contractions at their peak. At 8.05am she passed a heavy show (vaginal discharge of blood-tinged mucus).

Dr C reassessed Mrs B at about 8.15am. He noted that the baby appeared to be of average size and the head was well descended into the pelvis. On vaginal examination the cervix was fully dilated and the head was presenting in an occipito-posterior position (back of the head toward the mother's spine). Dr C stated that Mrs B's pelvis was clinically normal and there appeared to be enough room for the delivery. There was no evidence of disproportion, with only 1+ mild caput and moulding (temporary changes in the shape of the baby's head due to compression by the muscles of the cervix of the uterus during birth).

At 8.25am Mrs B was given a top-up epidural. Ms F confirmed that Mr A and Mrs B were advised that a forceps delivery was indicated. They were transferred to theatre. The CTG was running and appeared normal.

In Dr C's opinion there were no indications at this stage that a Caesarean section was required and he stated that he informed Mr A and Mrs B of his findings. The options were either to allow Mrs B to push once the epidural had worn off or to assist delivery. Dr C said that he was concerned for Mrs B and the baby at this stage because:

> "1. [Mrs B's] blood pressure was elevated for the first time during labour. This was a significant elevation from her booking blood pressure of 112/62. The blood pressure was stable under the influence of the epidural. The epidural helps to lower the blood pressure by reducing the cardiac output through peripheral vasodilatation and pooling of the blood. To allow [Mrs B] to push effectively one has to wait for the epidural to wear off. This would mean that the beneficial effect (lowering of blood pressure) of the epidural needed to be removed. Marked elevation of blood pressure can occur during pushing from physical exertion. [Mrs B] already had a rise in blood pressure of 170/110 mmHg in labour. Hence there was maternal risk of cerebral haemorrhage and seizures.
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> 2. There was no liquor [fluid] found during labour. The absence of liquor may cause cord compression and foetal heart rate abnormalities. There was already an episode (lasting 3-4 minutes) of foetal bradycardia in labour. Although I was happy at this stage there was no clinical evidence of hypoxia [lack of oxygen to

body tissue], I could not predict or exclude any possibility of this occurring in the future, especially since prolonged pushing would be required to effect vaginal delivery. It is known that if there were to be foetal distress in the presence of oligohydramnios [no liquor] this could be severe. Hence there was concern for the welfare of the baby. We do not have facilities to do a foetal scalp pH in our unit.

3. In view of the occipito-posterior position of the baby, the chances of a normal delivery would be very slim and prolonged pushing would have been required, eventually requiring instrumental operative delivery."

Dr C advised me that his reasons for deciding to assist this delivery were based on the possibility of hypertensive disease in labour as well as his findings of oligohydramnios (no liquor), the occipito-posterior position, and the CTG irregularities. In Dr C's opinion, these factors placed Mrs B and her baby at risk. He explained that her blood pressure readings fitted the diagnosis of gestational hypertension as suggested in obstetric literature, and that Mrs B's blood pressure had stabilised because of the epidural analgesia. To allow her to push effectively, they would have needed to wait until the epidural had worn off, thereby withdrawing the only treatment Mrs B had to control her blood pressure. Dr C also explained that the baby's occipito-posterior position was also a complicating factor, as it would have required hard and prolonged pushing to deliver. The foetal heart rate abnormalities that had been noted, and the oligohydramnios, may have reflected poor placental function.

Dr C pointed out that Mrs B suffered from significant hypertension following the delivery and required drug therapy for at least six weeks to control her blood pressure. Mrs B denied this, and also pointed out that the stress of losing a baby in this manner would make anyone's blood pressure rise.

Dr C stated that he did not consider that allowing Mrs B to push in these circumstances was wise, and he therefore decided to undertake a forceps delivery as all the criteria for a forceps delivery had been met. The baby was neither too large nor too small and Mrs B's pelvis was clinically adequate. There was no severe caput or moulding, the head was engaged in the pelvis, and the labour had not been prolonged or augmented.

Dr C decided to use a form of obstetric forceps known as Kielland's forceps. Kielland's forceps have narrow fenestrated blades, a sliding lock and a small pelvic curve. They are designed to rotate and deliver the foetal head from occipito-lateral or occipito-posterior positions and may be used when the baby's head is high up in the birth canal.

Dr C stated that he discussed these options with Mr A and Mrs B and said that they were happy for him to deliver their baby using forceps. Mr A and Mrs B considered that Dr C did not communicate very effectively with them before or during the delivery. They said it was often very difficult to hear and understand what he was saying, particularly because Dr C directed most of his comments to Ms F.

Ms G, Service Manager of Maternal and Children's Health, explained that the hospital did not have a specific policy relating to the application of Kielland's forceps. By custom and practice the application of Kielland's forceps was a specialist obstetrician-only procedure at the hospital.

Dr C explained that the criteria set by the American College of Obstetricians and Gynaecologists (ACOG) for a forceps delivery were satisfied as follows:

1. Full cervical dilation;
2. Ruptured membranes;
3. An engaged head where no more than two-fifths of the foetal head can be palpated abdominally after the back of the head is felt at the ischial spines;
4. The presenting part is the vertex;
5. The position of the presenting part is known;
6. No disproportion between head size and pelvic size (cephalo-pelvic disproportion);
7. An empty bladder;
8. Adequate analgesia;
9. Operator familiar with course of labour and clinical assessment of pelvis and foetal size;
10. Experienced operator;
11. Knowledge of advantages and techniques of different forceps;
12. Operator prepared to abandon procedure;
13. Ability to perform a Caesarean section if difficulties arise.

Dr C stated that in this case the head was engaged with only one-fifth of the head palpable above the pubic symphysis, the vertex was 1cm below the ischial spines, and there was only mild moulding (shaping of the foetal head to the size and shape of the birth canal) present. The occipito-posterior position of the head was diagnosed before the application of forceps, the baby's size appeared to be average, the maternal pelvic size was normal, and there was no severe moulding. No other factors were present to suggest disproportion, such as prolonged or protracted labour, or the need to induce labour with Syntocinon.

Dr C has been practising obstetrics for over 23 years, is experienced in the use of forceps, and has been approved for this mode of delivery by the hospital. Of the 40-50 forceps deliveries he performs at the hospital each year, Kielland's forceps are used in at least 10-12. He advised me that there had been no adverse outcomes or serious complications caused by his use of Kielland's forceps until this incident.

Ms G and Dr C explained that in 1997 there was no policy at any New Zealand maternity hospital stating that Kielland's forceps delivery should be undertaken in an operating theatre. This was a decision that was left to the consultant's discretion. It was not the hospital's policy at this time to have all Kielland's forceps attempts undertaken in a fully staffed Caesarean section theatre. Delivery in Mrs B's case was effected by Caesarean section within 15 minutes of the decision to abort a forceps delivery attempt, which is consistent with the recommended British Medical Standard related to Emergency Caesarean Section. There was no delay. Since this incident, however, Dr C has changed his clinical practice to perform all mid-cavity forceps deliveries in an operating theatre.

Ms G further advised that following the Coroner's recommendation that all hospitals consider requiring all Kielland's forceps deliveries to be undertaken in an operating theatre as a trial of forceps, the District Health Board sought an opinion from the Royal Australian and New Zealand College of Obstetricians and Gynaecologists. The response is as follows:

> "To my knowledge we have never made any recommendation regarding the use of Kielland's forceps, other than the usual recognised criteria for their correct use. We would still say that, while a trial of forceps does need to be carried out in theatre, when the obstetrician anticipates a relatively straight forward forceps delivery (as [Dr C] did with respect to the delivery of [Baby D]), there would not be a need for this to be undertaken in the operating theatre."

The use of Kielland's forceps at the hospital is consistent with the opinion of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Kielland's forceps has always been an instrument to be used by an experienced specialist trained in its use and able to predict with confidence that the delivery can be safely and easily accomplished by this means. There are strict indications for its use:

1. The head must be fully engaged in the pelvis, ie in the mid-cavity with station about +2.
2. There must be room in the pelvis to rotate the head.
3. No known cephalo-pelvic disproportion.

Dr C advised me that he expected explanations about delivery techniques would have been given to Mr A and Mrs B during antenatal care. As he was not involved in Mrs B's antenatal care, he was not aware of what Mrs B and Dr E had discussed. Dr C stated that his discussions with Mr A and Mrs B were clearly documented in Mrs B's notes at the time of each assessment. It was noted at 8.25am that the issues of the baby's position, raised blood pressure, absence of liquor and CTG irregularities had been discussed before consent was obtained for forceps delivery. Dr C stated that he was not aware of Mrs B's apparent fear of a forceps delivery, or that she would have preferred a Caesarean section. There is also no record of this preference or fear in Mrs B's antenatal records.

Dr C said that the only occasion on which he did not communicate directly with Mrs B was when he was kneeling down to perform the forceps delivery. At this stage he relied on Ms F to communicate what was happening to Mrs B. Dr C said that there was no indication to him at the time that Mrs B did not understand what was being said, or that she needed more information.

Mrs B confirmed to the Coroner that at around 8.00am she told Ms F that she did not want forceps to be used and would have preferred a Caesarean section. They had also discussed this preference during antenatal care, and Mrs B had concluded that she would follow medical advice on the day. Ms F recalled that Mrs B was apprehensive about the proposed forceps delivery but she did not recall Mrs B saying that she did not want a forceps delivery, that her level of anxiety was out of the ordinary, or what had been discussed during antenatal care.

At 8.25am Mrs B was transferred to the delivery theatre and given a top-up epidural to provide analgesia for a forceps delivery. She was placed in the lithotomy position (lying on the back with legs raised in stirrups). At 8.40am Mrs B's blood pressure was 125/79 and the foetal heart rate 144bpm.

At 8.47am the foetal heart rate decelerated to 70bpm. Ms F asked Dr C to review Mrs B. Dr C stated that he immediately reviewed the CTG trace. He explained that the deceleration could have been due to cord compression, but there was a quick recovery. A paediatrician was called.

At approximately 8.50am Dr C emptied Mrs B's bladder with a catheter, confirmed that the epidural was still providing adequate pain relief and reassessed her vaginally. During the assessment he noted that the occipito-posterior position was slightly to the right and that the presenting part of the head was slightly tilted.

Dr C applied the left blade of the forceps directly to the baby's head, followed by the right blade. As the handles could not be aligned properly he removed the blades and reassessed the position of the head. At this stage, Mrs B's buttocks were brought down further towards the edge of the bed and Dr C removed the foetal scalp electrode to enable easier application of the forceps.

Dr C explained that after re-examination he was satisfied that the baby was in an occipito-posterior position and so he reapplied the forceps. He stated that this time the blades aligned without difficulty. Dr C attempted to rotate the baby's head to the right but was unable to and so attempted rotation to the left, which was also unsuccessful.

While kneeling on the floor, Dr C applied force on the forceps during a contraction, in an attempt to pull the baby down in the occipito-posterior position while Mrs B was asked to push. Dr C explained that sometimes the head can be rotated at a lower level, or delivered in that position without the need for any rotation. He stated that only moderate traction was applied during this procedure and that he only used his right forearm while his left arm was resting on top of his right hand.

Mr A and Mrs B stated that Dr C pulled extremely firmly on the forceps and that Mrs B was dragged down the bed as a result. Dr C denied using any more force than was necessary or than he would normally use during such a procedure. Ms F was relaying information from Dr C to Mr A and Mrs B throughout.

Ms F advised the Coroner that she kept Mr A and Mrs B informed about progress. She observed Dr C attempt a gentle turn with the forceps, then turned to face Mrs B, to reassure and update her. Dr C took the forceps off the baby and re-examined Mrs B before reapplying the forceps. Ms F saw two seemingly untraumatic pulls with the forceps while Mrs B was asked to bear down simultaneously. However, the blade handles of the forceps could not be locked together.

Dr C stated that as soon as he realised the delivery was going to be difficult, he abandoned the procedure without any hesitation, advised Mrs B that the forceps delivery had been unsuccessful, and obtained consent for a Caesarean section.

Ms G stated that Dr C acted within the hospital's expectations regarding the decision to abandon the Kielland's delivery and perform a Caesarean section.

At 9.00am, Mrs B was taken to an operating theatre. As she had adequate analgesia from the previous top-up of the epidural, no further analgesia was required.

Dr C described the surgery as follows:

> "The baby was delivered within fifteen minutes of making the decision to deliver by Caesarean section. The operation commenced at 9.08am and the baby was delivered at 9.10am.
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> The occipito-posterior position of the baby was confirmed, with the head being deep in the pelvis. There was no liquor seen. The baby's head was lifted out and delivered with fundal pressure. There was no evidence of cord prolapse or the cord being around the baby's neck. With the delivery of the head, the mouth and nasopharynx were suctioned. The rest of the baby was delivered and immediately transferred to the resuscitation table by the theatre nurse.
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> Other than a small laceration on the left cheek of the baby from the scalpel blade at the time of the operation, I did not see any external forceps marks or bruises on the baby's head or the face at the time of delivery.
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> The placenta was delivered by traction and appeared complete. There was no evidence of placental abruption or other abnormality and the operation was completed without any complications.
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> Cord blood was obtained but had clotted and was unsuitable for pH analysis.
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> There were no injuries to the maternal soft tissues of the pelvis or the perineum, from the attempted forceps delivery."

Baby D was born in a moribund (dying) state and it took 20 minutes to restore his heartbeat. He was resuscitated by the hospital's paediatric team which transferred the baby to the Special Care Unit at 9.46am. Dr C described the resuscitation process as difficult and complicated. At 12.00pm the baby was transferred to the neonatal intensive care unit at another public hospital in a critically unstable condition. The referral letter noted that this was Mrs B's second pregnancy, that her first child had died of a congenital heart defect (at 20 weeks' gestation) and that this pregnancy had been uneventful. Details subsequent to the baby's birth were also included, including the absence of cardiac and respiratory activity, and his resuscitation. The baby died at 4.00pm on 16 July 1997 at this hospital.

Dr C subsequently met with Mr A and Mrs B on more than one occasion to discuss this incident, and he apologised to them both publicly and privately for the tragic outcome.

Post-mortem
On 17 July 1997 perinatal pathologist Dr H carried out a post-mortem examination of the baby. As a result of her findings, Dr H reported the baby's death to the Coroner.

Dr H's final diagnosis was a traumatic intracranial haemorrhage, including bilateral tentorial tears, infratentorial haemorrhage, supratentorial haemorrhage, left occipital osteodiastasis and subapneurotic haemorrhage; also, bilateral subarachnoid haemorrhage and hypoxic-ischaemic encephalopathy. Dr H commented to the Coroner in her report:

> "This case has proved to be extremely complex with the greatest difficulty being the confident interpretation of the likely cause of the pathologies observed at post-mortem. All the conditions listed in the final diagnosis above may occur in apparently 'normal' vaginal deliveries. However, the likelihood of all occurring in the same infant spontaneously would seem extraordinary.
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> …
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> In my opinion, the moribund state of [the baby] at delivery was directly related to the trauma and resultant haemorrhage that occurred during the attempted Keillands forceps manipulation. This does not imply that the obstetrician acted improperly or was in any way negligent."

Coroner's findings
A Coroner's inquest into Baby D's death was completed on 12 October 1999. This was conducted by the Coroner's Deputy. The Coroner's provisional findings were issued in February 2000, and in response Dr C submitted further evidence in the form of a report from a clinical pathologist.

On 22 August 2000, the Coroner found that the baby died from an "intracranial haemorrhage suffered as a result of an attempt at delivery using Kielland forceps". He recommended that all hospitals consider requiring all Kielland's forceps deliveries to be undertaken in the operating theatre as "trials of forceps".

In relation to the circumstances of Baby D's death, the Coroner concluded that although it was not possible to ascertain how much force was applied by Dr C to the forceps, and whether excessive force had been a contributory factor, it was the decision to use Kielland's forceps and the attempt itself that caused the baby's death.

The Coroner's expert obstetric advisor, Dr I, was of the opinion that there was no real urgency to deliver the baby, and that it would have been preferable to wait for the baby's head to descend, reassess the situation, and go directly to either a trial of forceps in theatre or a Caesarean section if the head had not descended. To summarise, Dr I's opinion was that intervention occurred too soon and should have occurred in an operating theatre, so that if the forceps attempt was unsuccessful, it could be converted to a Caesarean section without undue delay.

In response to my provisional opinion Dr I explained:

> "My interpretation of the advice you received from Drs Hill and Cook is that Dr C's practice was not so abnormal or unusual that it fell below a minimum accepted level of care. No one (myself included) has criticised his experience with and use of Kiellands or his description of how he used them that day. There are aspects of his management which do not sit well with us in retrospect. For example, both reviewers share my opinion that there was no real indication to perform the forceps delivery at that time. … Even so, given the overall advice, it is impossible for you to find that [Dr C] breached the Code.
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> In my opinion, the Coroner's view that trauma caused by the attempted forceps delivery was the cause of [Baby D's] death is correct. The views of [Professor J] have been given undeserved prominence. Your own reviewer, Dr Cook stated he was not present at the postmortem and there is no evidence to support his claim that acute severe hypoxia prior to the forceps delivery caused [the baby's] death.
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> …
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> This tragic outcome serves to remind obstetricians that at times the clinical circumstances are extremely unforgiving of less than perfect management. Even then disasters can still occur. … sometimes it is appropriate to accept that different management may have resulted in a better outcome.
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> More importantly, as a medical profession we need to examine how we respond to tragedies like [Baby D's] death. I hope that the obstetricians of tomorrow that I train will understand that their reaction and response to such events can make a great deal of difference to parents, family, and indeed to their own practice and peace of mind. …"

The Coroner found that there was no clinical justification for Dr C's decision to use forceps to deliver the baby at the time he did; that the Kielland's forceps attempt should have occurred in an operating theatre to enable easy conversion to a Caesarean section; and that communication from Dr C about available treatment options was not good.

Further pathology advice

In response to the Coroner's provisional findings, Dr C employed the services of a clinical pathologist, Professor J. Dr C advised me that Professor J was given the same clinical written material that had been available to Dr H, as well as the post-mortem report and Dr H's written notes of the photographs and Dr H's evidence and cross-examination before the Coroner. Dr C explained that although Professor J was aware that photographs existed, he did not require them in order to form his opinion.

Professor J concluded that Baby D probably died as a result of anoxia (lack of oxygen) and not from an intracranial haemorrhage. Professor J observed that there was no evidence in the post-mortem transcript that the trauma was more than minor trauma, and none of the trauma described would be likely to have led to brain death during labour or shortly after delivery. The most significant finding in the post-mortem report was hypoxic-ischaemic encephalopathy, and the probable cause of this was a severe anoxic event that occurred

around the time that the forceps were applied, which may have been due to a problem with the umbilical cord. Professor J commented on the difficulty and complicated resuscitation that the baby endured after birth, and was of the opinion that this would have contributed to the coagulation disorder and the amount of bleeding present at post-mortem.

The Coroner decided not to consider the additional information provided by Dr C, as the opportunity to challenge the pathologist's report was during the inquest, and the purpose of provisional findings was to allow comment on proposed adverse findings, rather than to provide new evidence. The Coroner was also concerned that Professor J may not have had sufficient clinical evidence (namely the photographs of the baby's injuries) upon which to base his conclusions.

Dr H

Dr H submitted advice to my Office after Mrs B sent her a copy of my provisional opinion and Professor J's opinion. Dr H gave extensive reasons for disagreeing with Professor J's conclusions about the cause of Baby D's death.

In conclusion, Dr H explained:

> "That [Baby D] died with clinical hypoxic-ischaemic encephalopathy is beyond dispute. Such a diagnosis does not define the cause of the perinatal asphyxia – and this it seems to me is the issue here. What caused [Baby D] – who was an apparently healthy fetus prior to the cessation of monitoring at the time of the attempted forceps manoeuvre – to be delivered in a moribund state?
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> It was, and remains my view, that he died as a result of the consequences of the intracranial trauma that led to the severe asphyxiated state observed at delivery. There were no features to support that he was significantly compromised prior to the application of the Kiellands forceps.
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> I would like to emphasise that this submission is directed toward the possible cause of [Baby D's] death only."

ACC

ACC's Medical Misadventure Unit concluded that Baby D died as a result of medical mishap, a complication of medical treatment that is both rare and severe. ACC did not find that there had been any medical error or a failure by Dr C to observe a reasonable standard of care and skill. Specifically, it was accepted that the trial of forceps was appropriate and that Dr C was not in error.

Independent advice to Commissioner

Dr Kevin Hill
The following expert advice was obtained from Dr Kevin Hill, an independent obstetrician and gynaecologist:

> "Thank you for asking me to comment on whether [Dr C] and [the hospital] exercised reasonable care and skill in providing services of an appropriate standard to [Mrs B]. With this letter I have returned the file, which contains extensive reports regarding this case and I should therefore respond specifically to the points which you raise. [Dr C] stated that he made a decision to deliver the baby based on a combination of problems including hypertension in labour, oligohydramnios, CTG irregularities and a persisting occipito-posterior position. You will be in receipt of [Dr I's] report to the Coroner and I note [Dr C] stated that he was prepared to attempt a vaginal delivery because there was no evidence of foetal distress at the time that a decision was made for delivery. I therefore concur that there was no urgency to deliver [Baby D].
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> Having made the decision to do a forceps delivery, the decision then had to be made on whether it should have taken place in the delivery suite or in an operating theatre. I am not familiar with obstetric practice at [the hospital] but it would appear in this case that there was no undue delay in converting the abandoned forceps to a Caesarean section and it is indeed debatable whether the few minutes which might have been saved had the attempt at forceps been performed in a Caesarean theatre, would have made any difference to the outcome.
>
> As a practising obstetrician in a provincial maternity unit, I would endorse [Dr C's] use of Kielland's forceps. There continues to be an ongoing debate in obstetric circles as to whether Kielland rotation forceps deliveries should be abandoned and as training obstetricians get less and less experience in this operative procedure the Caesarean section rate will inevitably rise above what is already a controversial percentage. However, in experienced hands Kielland's forceps can effect a safe delivery and there are many cases in our own unit where Caesarean section has been avoided. The key to a successful outcome is totally dependent on the experience of an individual clinician and I believe [Dr C] was very genuine when he felt that a safe rotation forceps delivery could be effected. I note that the Accident Compensation Corporation decision was not one of medical error but rather of medical mishap. With regards to what information [Dr C] should have given to [Mr A] & [Mrs B], it would seem that he communicated appropriately regarding her progress in labour and with the decision to effect a delivery with forceps. It would seem that the decision to perform the forceps delivery in the delivery suite meant that he felt very confident of a vaginal delivery.
>
> It is very difficult to comment on the likelihood of a causative link between the attempted forceps delivery and [the baby's] death and you will note that there is some disagreement between the findings of [Dr H] and [Professor J]. Clearly it is not possible to know if this baby had sustained any brain damage during labour ie

before the attempted delivery and I don't feel that consensus will be reached on this matter.

The issue regarding the Coroner's recommendation that Kielland's forceps delivery attempts should only be carried out in an operating theatre is just as contentious. When the head is low down in the pelvis it would be my practice to do a rotation forceps delivery in the delivery room, with a paediatrician present. However if the head were still in the mid pelvis it would be preferable to do a trial of forceps in an operating theatre with an operating team present for immediate recourse to Caesarean section. It is with some dismay that as part of [my] hospital rebuilding project we are losing our dedicated Caesarean section theatre and if immediate delivery was indicated ie with foetal distress, it may well be that we would have to do such a forceps delivery in a delivery room rather than run the risk of waiting until an operating theatre became free. This highlights the point that clinical decisions have to be made depending on individual circumstances of each hospital and also based on the experience of the clinician. Clearly, the outcome of this case was tragic but I believe [Dr C] to be a caring, experienced obstetrician who made decisions which he felt at the time were clinically appropriate. As mentioned earlier, I would question the need for the delivery to be expedited and in hindsight I am sure he wishes that the delivery had been performed in an operating theatre, if only to avoid that aspect of criticism, but having made the decision to attempt a forceps delivery I doubt that the outcome would have been significantly altered.

The alternative to preventing any such outcome, albeit rare, is to abandon all Kielland's forceps deliveries in favour of Caesarean sections yet obstetricians are already facing significant criticism for the rising Caesarean section rate. Obstetrics is as much an art as it is a science, highly dependent on clinician's experience and I believe that [Dr C] exercised reasonable care and skill in his provision of services."

Dr David Cook

As Dr Hill was subsequently unavailable to clarify and provide further advice, the following additional expert advice was obtained from Dr David Cook, an independent obstetrician and gynaecologist:

"**Summary of clinical course**

(from case notes and reports of [Dr C] and [Ms F])

[Mrs B] was a 31-year-old in her second pregnancy. Her first pregnancy in the previous year had ended in a second trimester termination due to a lethal congenital heart condition. There was no other significant past history. There was a family history of hypertension, affecting her father and grandfather.

She and her husband were anxious about the outcome of this pregnancy and booked for pregnancy care with [Dr E] and [Ms F], an independent Midwife. The pregnancy was apparently uneventful however the likely date of delivery coincided

with [Dr E's] absence on leave. [Mrs B] elected for care by the duty Obstetrician on the day of labour.

Labour began on 14th July 1997 at a gestational age of 40 weeks and 2 days. [Mrs B] contacted her Midwife who met her at the [hospital's] maternity unit at about 0520. A history of regular contractions since 0320 was reported but no show. Examination demonstrated a cervix already 8-9cms dilated. At 0530 pethidine 100mg was administered for pain relief and the blood pressure was measured at 130/90. There were no signs or symptoms suggestive of toxaemia of pregnancy.

At 0555 a foetal bradycardia to 80-90bpm persisting for 3-4 minutes was identified. This was followed by a brief tachycardia which then resolved to a normal foetal heart rate.

[Dr C] was informed at 0600 and attended at 0615. At this point the blood pressure was measured at 170/110. A further examination found the cervix still at 8cms dilatation and the head at the ischial spines. The membranes were ruptured but no amniotic fluid was identified. Continuous foetal monitoring via a foetal scalp electrode was instituted because of the previous, transient foetal heart rate abnormality. An epidural was recommended for adequate pain relief and reduction of the blood pressure level.

Subsequently the blood pressure was measured at 181/73. An epidural was inserted at 0635 because of the raised blood pressure and possible need for assisted delivery (abnormal CTG and absence of amniotic fluid). The management plan was discussed with [Mr A] and [Mrs B] by both [Dr C] and [Ms F].

Subsequent blood pressure levels were recorded as: 130/96, 140/92, 159/84, 146/90, 142/88. Adequate analgesia was achieved and the foetal heart rate remained satisfactory.

At 0825 [Dr C] reassessed the cervix. This was now fully dilated and the head was 1cm below the ischial spines/one fifth palpable abdominally but the head was directly occipito-posterior with caput and moulding noted. The pelvic size and shape was considered adequate on pelvic assessment. Again no amniotic fluid was identified.

The combination of malposition, raised blood pressure, previous CTG abnormality and absence of liquor prompted [Dr C] to recommend a forceps delivery and this was discussed with [Mrs B] accordingly.

The epidural was topped-up at 0828. Three deep, variable decelerations were recorded on the CTG just prior to removal of the foetal scalp electrode. [Mrs B] was placed in the lithotomy position and Kielland's forceps were applied at about 0848 by a direct rather than wandering method. The blades could not be adequately aligned. They were removed, the position of the foetal head double-checked and then the forceps were reapplied successfully but rotation of the head proved impossible with attempts to turn the head to both the left and right. Downward

traction with the foetal head in a direct occipito-posterior position was attempted with 2 pulls and no success. These efforts were described by both [Dr C] and [Ms F] as moderate. After approximately 5 minutes the forceps attempt was abandoned and an urgent Caesarean section undertaken. Transfer to operating theatre was undertaken at 0900.

Caesarean section confirmed a deeply-engaged, direct occipito-posterior position and the absence of amniotic fluid. There were no other adverse features and the operative procedure was unremarkable.

A male infant ([Baby D]) weighing 3620g was delivered at 0910 showing no signs of life at birth and required maximal resuscitation efforts. A heart rate was detected only at 30 minutes after delivery and progress thereafter was poor. He died two days later on 16th July 1997.

Post-natally [Mrs B] recovered unremarkably but did require anti-hypertensive therapy for at least six weeks following the birth.

[Dr C] met with the parents on several occasions to discuss the management and proffer apologies for the poor outcome.

- ***[Dr C] stated that his decision to deliver the baby was based on the following criteria: hypertension in labour, oligohydramnios, occipito-posterior position and CTG irregularities. Were his concerns well founded? Why or why not?***

- ***Did this delivery need to be expedited?***

- ***Was [Dr C's] decision to attempt a forceps delivery reasonable in the circumstances?***

- ***Would it have been appropriate for him to have waited before considering an assisted delivery?***

None of these cited criteria, alone, dictated the need for assisted delivery. Together, however, they did indicate a significantly increased risk.

Hypertension in labour

The most important possibility was toxaemia, a systemic disorder that can develop rapidly and have major adverse effects for both mother and baby. There had been no suspicion of this previously and there were no other clear signs or symptoms. Similarly there had been no suggestion of hypertension previously and the problem seemed to arise in labour. The initial diagnosis would be reactive hypertension due to the pain of labour. Hence [Dr C] recommended an epidural to contend with pain. Whilst adequate analgesia was achieved the blood pressure was only partially relieved and post-natally there was persistent hypertension requiring anti-hypertensive therapy. There was also a significant family history of hypertension. It appears therefore that a hypertensive disorder did arise with or shortly before labour.

It was not possible to be certain of the gravity of this problem at the time (there was limited opportunity for observation and investigation) but the CTG abnormalities and absence of liquor suggested a more significant hypertensive disorder than was immediately apparent. A cautious approach in these circumstances was entirely appropriate.

Oligohydramnios

Absence of amniotic fluid is an important indicator of foetal compromise. Medium or long-term reduction in placental function enforces the foetus to redistribute blood supply to ensure adequate nutrition of the brain and heart, the most essential organs. The consequent reduction of blood flow to the kidneys results in less urine output, the main contributor to amniotic fluid volume. Complete absence of liquor would be regarded as a very adverse feature suggesting a medium or long-term disorder.

Prolonged rupture of the membranes can account for oligohydramnios but there was no suggestion in this case. Occasionally a deeply engaged head may plug the cervix so that amniotic fluid loss is not easily apparent until the baby delivers. However [Dr C] records that no amniotic fluid was identified even at the Caesarean section.

The observation of no amniotic fluid on rupturing the membranes would suggest the possibility of unsuspected foetal compromise prior to labour. The confirmed absence of amniotic fluid at Caesarean section lends support to the post-mortem hypothesis of antenatal and peri-partum hypoxia as a contributor to the poor foetal condition. It could explain the unexpectedly catastrophic outcome from a delivery process that was not prolonged or unusually traumatic.

CTG irregularities

Whilst actual times are not recorded on the CTG there is a record of elapsed time since commencement. With reference to the clinical notes this allows a reasonable estimation of actual times.

Time	Baseline (bpm)	Variability (bpm)	Periodic changes	Comment
0530	140	5-10	Reactive	Normal
0540	140	3	Reactive but regular accelerations after each contraction	May indicate early foetal compromise. Significantly the contraction frequency is 8 in 10 representing a hyperactive uterus.
0555	95	-	-	A foetal bradycardia lasting 6-7 minutes.
0600	160	10-15	-	A mild tachycardia probably a recovery phase from the earlier bradycardia.
0610	170	10-15	-	Increasing tachycardia.

0635	165	5-15	Reactive	Mild tachycardia.
0700	140	3-8	Reactive	CTG has reverted to normal.
0730	140	5-15	Reactive	Normal. Contractions 4-5 in 10.
0810	140	5	Reactive	Contractions 6 in 10.
0824	140-160	5-8	Deceleration to 100bpm	Generally normal.
0837	130-140	5-8	Deceleration to 100bpm	Generally normal.
0847	160	-	Deep deceleration to 70bpm with prolonged recovery.	
0850	150-160	5-15	-	FSE removed to allow forceps application.

Careful, retrospective scrutiny of most CTGs will identify some abnormalities. Repetitive, coexisting and/or severe abnormalities in the context of other clinical factors determines the significance of the CTG recording. In this instance a cursory inspection of the CTG would not be particularly alarming. More critical analysis suggests an episode of hyperactivity of the uterus on commencement of the CTG with evidence of foetal compensation to an adverse environment (prolonged bradycardia followed by reactive tachycardia). Thereafter the CTG gradually reverts to a normal pattern. By 0800 a hyper-contractile pattern was again evident and the baseline gradually increased to a mild tachycardia with some decelerations just prior to the forceps attempt. The observed changes could very plausibly be attributed to a low volume of amniotic fluid and consequent cord compression with contractions.

To the experienced and cautious observer this was a subtly abnormal CTG which, in the light of the abnormal liquor volume and hypertension, could suggest the imminence of significant foetal compromise. It was not, however, sufficiently abnormal to contraindicate an assisted vaginal delivery or indicate Caesarean section.

Occipito-posterior position

This malposition is often associated with a prolonged labour, both during the first and second stages. The elliptical head is often deflexed so that the diameters traversing the pelvic cavity are larger than those with a normal head position. A large pelvis or small baby may allow spontaneous delivery in the OP position. Alternatively, spontaneous correction may occur with adequate uterine contractions and descent of the head. An obstructed second stage with an OP position may require operative delivery.

Although the first stage of labour had been quite rapid [Dr C] considered that the malposition would slow the progress of the second stage and probably require assisted delivery ultimately. The delay in delivery and the effects of prolonged pushing on the baby were considered unwarranted in view of the other risk factors.

Assisted delivery at a later point (after pushing) might have proved more difficult due to deep impaction of the head in a malposition and significant asynclitsim (tilting of the head to one side). The baby might also have been more compromised and at greater risk from assisted delivery (hypoxia makes the brain more susceptible to injury).

This argument for expediting delivery is not entirely compelling however. The rapid first stage, average sized baby and adequate pelvis could have permitted a vaginal delivery, either with spontaneous rotation of the head or delivery in a posterior position. Whilst the malposition would usually delay progress, careful observation of foetal and maternal well-being might have proved satisfactory despite the rigours of the second stage. Alternatively, the development of adverse features might have clearly indicated the need for assisted delivery later when the head was lower in the pelvis and possibly rotating spontaneously.

In my opinion both these options for management of the second stage can be justified. There were subtle but multiple risk factors for provoking a cautious approach on the part of [Dr C]. The unfortunate outcome to the first pregnancy might also have been a contributing factor, with the desire to avoid a significant complication during this labour.

- ***Should this forceps delivery have taken place in an operating theatre or was it reasonable to attempt it in the delivery suite?***

As established above, [Dr C] adopted a cautious approach aiming to pre-empt significant complications rather than responding to them. A number of subtle risk factors suggested to [Dr C] the need to assist and expedite delivery.

He carefully noted the pre-requisites for a safe assisted vaginal delivery as follows:

A satisfactory maternal condition and adequate analgesia;

A satisfactory, though mildly compromised, foetal condition;

Full dilatation of the cervix.

A clinically average-sized baby;

A clinically adequate-sized pelvis;

A short 1st stage of labour;

An engaged foetal head below the ischial spines with 1/5th palpable above the symphysis pubis;

Foetal head in a direct occipito-posterior position;

Minimal moulding;

Minimal caput.

In addition [Dr C] was highly familiar, experienced and therefore confident with the Kielland's forceps technique.

Dr I considered that a trial of vaginal delivery in theatre was indicated because of the following risks:

1. a slow rate of cervical dilatation from 8cms to fully dilated;
2. the occipito-posterior position;
3. the relatively high foetal head;
4. the speed with which the baby can be delivered if problems arise;
5. the compulsion to continue with the procedure despite problems once started in the delivery suite.

To address these issues in turn:

1. There appeared to be some delay in progress between 0520 and 0615 with the cervix remaining at 8cms dilatation. The cervix was noted to be fully dilated by 0825 however.

   - The first two vaginal examinations were performed by the midwife initially and then [Dr C]. It is not uncommon for there to be some inter-observer error when assessing cervical dilatation. A variation of one centimetre would be regarded as commonplace. With such an error rate the documented delay would be insignificant.

   - It is also possible that the cervix was fully dilated before the examination at 0825.

   - Whilst a cervical dilatation rate of 1cm per hour is generally regarded as the slowest acceptable rate of dilatation this is not an invariable rule.

   - Full dilatation was achieved without the need for augmenting labour with a syntocinon infusion.

   For these reasons I would regard the documented delay in the progress of labour to be insignificant.

2. The direct OP position allows direct and thus easier application of Kielland's forceps compared with most other malpositions of the foetal head.

3. Assessing the station of the head vaginally is difficult due to swelling of the foetal scalp. Palpating the amount of the foetal head still above the symphysis pubis by abdominal examination is more reliable. Ideally there should be no head palpable above the symphysis pubis however $1/5^{th}$ palpable is not a contra-indication to assisted vaginal delivery provided all other factors are favourable. Some practitioners would regard this as a significant risk factor and choose to

attempt the delivery in theatre or even prefer Caesarean section. Such variation in opinion indicates a lack of firm scientific data to guide best practice as well as a wide variation in experience and confidence with assisted delivery procedures amongst Obstetricians.

4. Being in theatre will allow a more rapid reversion to Caesarean section and delivery of the foetus if problems arise. When the delay in transfer from the delivery suite is only a matter of a few minutes however it is arguable whether this would significantly alter the outcome. In this case very effective epidural analgesia was in place and the operating theatre transfer/response time was considered to be short (in the event it took 15 minutes from the decision for Caesarean to delivery of the baby).

5. The majority of Obstetricians are very aware of the high parental expectations for normal outcome, the increasing medico-legal risk when problems arise and the safety and ease with which Caesarean section can be accomplished. With these in mind the temptation to continue with an assisted delivery in the face of difficulties is easily resisted by most experienced practitioners.

The choice for a trial of assisted delivery in theatre is affected by many variables however the principal indication is a suspicion that the procedure will fail. If the procedure is not considered to be safe then it should not be performed.

Transfer to theatre is an unsettling process for parents and enforces delivery in a highly exposed and clinical environment. This is usually very contrary to parents' expectations of their 'birth experience'.

In my opinion there was no strong indication to undertake delivery in the operating theatre. The indicators were of a foetus in a satisfactory condition and the prospects of an uneventful assisted delivery were high.

- ***Please comment on the Coroner's recommendation that Kielland's forceps delivery attempts should only be carried out in an operating theatre.***

The Coroner states:

1. 'always in medicine, one must be aware complications can develop'.

2. 'the ability to resuscitate (the baby) at the earliest occasion'.

3. 'in theatre … baby could be delivered almost immediately' (by Caesarean section).

Earlier he had established that foetal death was 'due to intracranial haemorrhage caused by the attempt at Kielland forceps delivery' substantially discounting an opinion from [Professor J] from [overseas] that hypoxia prior to the assisted delivery was a significant contributor.

Addressing these issues in turn:

1. Complications can occur following virtually any medical procedure but the complex and individualised weighing of risk versus benefit is implicit in the practice of medicine. To suggest that [Dr C], as a very experienced Doctor, did not consider these issues is naive. All assisted deliveries are not undertaken in theatre just in case problems arise. The assisted-delivery procedure should be considered safe in the circumstances. Operating theatre should be immediately available and any assisted-delivery procedure should be abandoned promptly if complications ensue. These principles were all followed in this case.

2. Early resuscitation of the compromised foetus is of course preferable but at the beginning of the assisted delivery attempt there was no strong indicator that resuscitation of the foetus would be needed. [Dr C] considered that delivery would prove uncomplicated and the pre-requisites for resuscitation were immediately available in the delivery room should this prove necessary. With failure of the forceps delivery [Dr C] performed Caesarean section as expeditiously as possible although even at this point there was no strong indication of major foetal compromise. The 'emergency' Caesarean section was primarily indicated by the obstructed labour and the futility of continuing any further.

3. Delivering in the operating theatre undoubtedly reduces delay between a failed forceps to Caesarean section delivery. This is partly in the interests of the baby as assisted deliveries may impose some additional stress. It is also in the interests of a smooth transition between the two procedures. The implication that immediate delivery is possible is slightly misleading as even in theatre the transition between attempted forceps delivery and Caesarean section takes a few minutes. If it is accepted that the damage to this baby was sustained by physical trauma from the forceps rather than hypoxia then a more expeditious delivery and resuscitation of the foetus would not have substantially altered the outcome.

In my opinion the Coroner (and some other authorities) has confused trial of assisted-delivery in theatre with the absolute safety of Kielland forceps delivery. The latter has been successfully performed for many years but with the occasional instance of dire outcome. With the increased safety and acceptability of Caesarean section and the increased expectation of good obstetric outcome it may be that Kielland forceps should no longer be considered an acceptable option for assisted vaginal delivery. Simply ensuring that they are only employed within the confines of an operating theatre will not avoid the rare instance of significant physical trauma from their use.

- ***Was his decision to use Kielland's forceps appropriate?***

Three assisted-vaginal delivery techniques might be considered with a foetus in a direct occipito-posterior position:

1. Ventouse extraction;

2. Kielland forceps delivery;

3. Manual rotation with or without low forceps delivery.

The latter option is not commonly employed as the obstetrician's hand needs to partially encompass the foetal head to achieve rotation. As space in the pelvis is limited this frequently requires disimpacting the head to a higher station which potentially increases the risk of the procedure. Experience and thus training with this technique is scarce.

Ventouse is the most prevalent method of assisted delivery for the foetus in a malposition. As it does not encompass the foetal head no valuable space in the pelvis is utilised. Potentially the technique is safer as excessive traction and rotational forces cannot be applied. Nevertheless complications such as trauma to the scalp, jaundice and haemorrhage can occur. With increasing experience and the recognition of significant morbidity associated with the ventouse a note of caution has been sounded in recent reviews.

Kielland forceps delivery is a long established technique but one that requires the greatest degree of skill both in case selection and execution. It remains a mainstream obstetric procedure promoted in the major obstetric texts despite its known and well publicised potential hazards. Because of the latter its use has reduced dramatically in the last few years and with lack of adequate training in the technique its eventual disappearance from obstetric practice is anticipated.

[Dr C's] long experience with the technique would make Kielland forceps delivery a very reasonable option and at least equal to the other two methods of assisted-vaginal delivery available to him.

- ***Was [Dr C's] use of the Kielland forceps appropriate?***

The pre-requisites for a safe assisted-vaginal delivery were identified:

A satisfactory maternal condition and adequate analgesia;

A satisfactory, though mildly compromised, foetal condition;

Full dilatation of the cervix.

A clinically average-sized baby;

A clinically adequate-sized pelvis;

A short 1st stage of labour;

An engaged foetal head below the ischial spines with 1/5th palpable above the symphysis pubis;

Foetal head in a direct occipito-posterior position;

Minimal moulding;

Minimal caput.

[Mrs B] was placed in lithotomy position and the position of the foetal head carefully assessed. An occipito-posterior position slightly deviated to the right with some asynclitsim was noted. The latter is a common finding in obstructed labour where uterine contractions tilt the head to one side if descent is not possible. This finding lends some weight to [Dr C's] suspicion that normal delivery with pushing alone was unlikely.

Direct application of the forceps blades was performed. This means that the blades could be applied directly to the intended position on the foetal head as opposed to a 'wandering' method where the blades are inserted into the vagina and then manoeuvred into the correct position.

With insertion of the forceps it was not possible to align the handles adequately. This is a common occurrence and [Dr C] removed the forceps to reassess the position of the foetal head.

[Mrs B] was shifted further down the bed, a recommended technique for allowing correct application of the forceps blades along the axis of the birth canal (about 45° above the horizontal). The forceps were then easily applied in the correct position.

Two rotations, to right then left, were attempted between contractions to no avail. With the next two contractions [Mrs B] was urged to push and the forceps were used to attempt delivery in the existing posterior position. These manoeuvres were entirely legitimate and conventional. There was no undue persistence with either and [Dr C] abandoned the assisted-delivery attempted promptly when neither rotation nor descent could be achieved.

The question of excessive force featured prominently in the court proceedings. I am unable to comment on this directly but it is my experience that parents are often surprised at the degree of apparent exertion required for quite straight-forward forceps deliveries. Using the power of one arm in a standing, crouched or kneeling position (as employed in this case) is generally regarded as a method of avoiding excessive traction forces.

- ***What information should [Dr C] have given [Mr A] and [Mrs B] about the need for an assisted delivery?***

The provision of advice prior to a clinical procedure is customised to both the individual and the situation.

In this case adequate analgesia should have ensured that [Mrs B] was receptive to information. There was no dire clinical urgency mitigating against delay. There was therefore ample opportunity for advice and discussion.

The discussion would encompass:

1. Risk factors at this point in the labour:

    1.1 Concerns about the mildly abnormal CTG and lack of amniotic fluid and the possible relationship to the raised blood pressure;

    1.2 The significance of the occipito-posterior position ie prolonged or obstructed 2nd stage ultimately requiring assisted delivery;

    1.3 Maybe the undercurrent of previous poor obstetric outcome and the desire to maximise a safe outcome in this instance.

2. Options for management:

    2.1 Awaiting head descent and commencing pushing at a later point;

    2.2 Commencing pushing immediately;

    2.3 Undertaking an assisted vaginal delivery immediately;

    2.4 Performing a Caesarean section immediately.

The relative indications for each option, with the associated benefits and risks would be briefly outlined.

It would not be common practice to discuss the potential risks of forceps delivery in depth as these are rare. In cases where an increased risk is thought to exist most Obstetricians would recommend Caesarean section as preferable or at least a trial of assisted-delivery in operating theatre. It would be usual to advise that assisted-vaginal delivery can fail and that Caesarean section might be required. It would also be usual to advise that an episiotomy was likely for a mid-cavity rotational forceps delivery.

It is impossible to comment accurately on the information provided by [Dr C]. His written clinical notes indicate that he discussed the existing risk factors and recommended forceps delivery with which [Mrs B] was 'happy'. There certainly appeared to be a reasonable dialogue established at this point with the attending Midwife also providing information to [Mrs B] and her husband. This dialogue is corroborated by the evidence of [Mrs B].

For the parents this was an unfamiliar and anxiety-provoking situation not conducive to easy comprehension and decision-making. In such situations most Obstetricians, whilst outlining options and their relative merits, would take a guiding role and recommend a reasonable course of action. This can be variably interpreted as expertise or malpractice depending on the subsequent outcome.

- ***Can you comment on the likelihood of a causative link between this attempted forceps delivery and [Baby D's] death?***

Much consideration has already been given to this issue by [Dr H] from [a city] and [Professor J] from [overseas] and I would not regard myself as sufficiently expert to gainsay their opinions.

The salient points of their reports are:

1. The baby was clinically dead at birth (Apgar 0) and revived only by dint of zealous and prolonged resuscitation;

2. A wide variety of injuries were identified with different possible causes:

   2.1 Birth trauma;

   2.2 Intrapartum hypoxia;

   2.3 Bleeding diathesis;

   2.4 Post-natal trauma (injury at resuscitation and with subsequent neonatal intensive care procedures).

   Making a confident final diagnosis was therefore difficult;

3. [Dr H] considered trauma to have been the most likely primary cause of injury due to the nature and variety of injuries identified. She did regard many of the post-mortem features to be consistent with hypoxia however.

4. The severe bleeding diathesis (poor coagulation) was probably secondary to the moribund state of the baby at birth (rather than preceding and causing this) and would of course confound the findings at post-mortem many hours later. Thus one might expect even minor injuries to be greatly exacerbated.

5. [Professor J] considered the intracranial injuries and haemorrhage to have been 'minor' particularly in the light of the coexisting bleeding diathesis. He felt that the trauma was insufficient to explain the delivery of a clinically dead baby. He favours acute and severe hypoxia as the most likely cause of morbidity and death. However no clear reason for such an episode is expounded and [Professor J] was commenting on documented evidence available to him rather than a direct observation of the post-mortem findings.

The outcome from this relatively unremarkable clinical scenario was unexpectedly severe and the range of neonatal morbidity complex. These and the disparity of the expert advice from [Dr H] and [Professor J] do not support an unequivocal diagnosis of birth trauma as the primary cause of neonatal death.

Summary points

1. Either a conservative approach awaiting descent of the head and then pushing or commencing the latter immediately would be the most commonly adopted management with this clinical picture. There would however be a strong expectation that operative delivery be ultimately required.

2. Risk factors were present. Individually none [was] a compelling argument for expediting delivery however cumulatively they did present an increasingly complicated scenario.

3. In view of the latter the immediate resort to assisted delivery by [Dr C] can be justified.

4. Assisted delivery should be undertaken in operating theatre if there is a high expectation that the attempt will fail. If the procedure is deemed high risk because of impaired foetal condition or the inherent danger of the assisted-delivery technique, then it should not be used in any circumstance. The clinical situation was generally favourable for an uncomplicated and successful forceps delivery. Despite the inherent uncertainty regarding the latter there was no compelling reason for trial of assisted-delivery in operating theatre.

5. Selection of Kielland forceps as an alternative to ventouse or manual rotation was quite acceptable.

6. The description of [Dr C's] technique for using the Kielland forceps was entirely consistent with accepted practice.

7. There appeared to be a reasonable dialogue established between [Dr C], the Midwife and the parents. It is impossible to comment accurately on the exact information provided.

8. The precise cause of neonatal death remains uncertain. In the circumstances the dire outcome was unexpected and tragic for the parents and their care providers. Regrettably occasional instances of unexpected outcome continue to occur despite the most conventional and well-intentioned care. This reflects the imperfect science of Obstetrics and Medicine in general."

Code of Health and Disability Services Consumers' Rights

The following Rights in the Code of Health and Disability Services Consumers' Rights are applicable to this complaint:

RIGHT 4
Right to Services of an Appropriate Standard

1) Every consumer has the right to have services provided with reasonable care and skill.

RIGHT 5
Right to Effective Communication

1) Every consumer has the right to effective communication in a form, language, and manner that enables the consumer to understand the information provided. Where necessary and reasonably practicable, this includes the right to a competent interpreter.

RIGHT 6
Right to be Fully Informed

1) Every consumer has the right to the information that a reasonable consumer, in that consumer's circumstances, would expect to receive, including –

…

b) An explanation of the options available, including an assessment of the expected risks, side effects, benefits, and costs of each option …

Opinion: No breach – Dr C

Right 4(1)

Under Right 4(1) of the Code, Mrs B and Baby D had the right to have obstetric services provided by Dr C with reasonable care and skill.

Mr A and Mrs B were concerned that Dr C's decision to try to deliver Baby D using Kielland's forceps was inappropriate and that the attempt itself contributed to the baby's death. They were specifically concerned because of the following factors: the use of Kielland's forceps is a high-risk delivery method; there was no foetal or maternal distress to indicate that delivery needed to be expedited; and the attempt did not take place in an operating theatre with ready access to an emergency Caesarean section, if necessary.

Dr C explained that he decided that the delivery needed to be expedited for several reasons and that he believed this was achievable by using Kielland's forceps.

Mrs B's blood pressure had risen during the labour, which put her at risk of developing hypertensive disease in labour. Although her blood pressure had fallen once the epidural had been inserted, the epidural would have had to wear off to let her push, and pushing would have elevated her blood pressure further. Because the baby was occipito-posterior, more prolonged pushing would have been required to deliver. The lack of liquor and foetal heart rate abnormalities that had been noted were also indications of possible foetal compromise.

Dr C described extensive experience with the use of Kielland's forceps and was confident of a successful outcome. He did not anticipate needing to proceed to a Caesarean section and therefore did not attempt the forceps delivery in an operating theatre.

In response to my provisional opinion, Mrs B re-stated her belief that as her blood pressure was not dangerously high and there was no evidence of foetal distress, there was no urgent need to deliver the baby. The records indicate that there was a rise in Mrs B's blood pressure after her admission. While this in itself was not a significant concern, when viewed cumulatively with the other factors referred to above, it was reasonable for Dr C to have become concerned.

Although my first advisor, Dr Hill, stated that a vaginal delivery was appropriate, as there was no evidence of foetal distress when the decision was made and therefore no urgency to deliver the baby, my second advisor, Dr Cook, agreed that the criteria cited by Dr C collectively indicated an increased risk, and that an assisted delivery was therefore appropriate. However, these criteria were not sufficiently concerning to contraindicate an assisted vaginal delivery or to warrant a Caesarean section.

In response to my provisional opinion, Mr A and Mrs B raised the concern that the baby's head was higher in the pelvis which made forceps delivery more difficult. Dr Hill did state that in the case of a mid-cavity delivery his preference would be to attempt delivery in an operating theatre. However, this is not essential. Both my advisors concurred that Dr C's decision and use of Kielland's forceps was entirely appropriate.

Dr Cook explained that it is quite possible to have a safe forceps delivery in a delivery suite rather than in an operating theatre, and that poor outcomes are also possible from attempts that take place in theatre. Both advisors concurred that even though forceps delivery did not take place in an operating theatre, it was abandoned appropriately and there was no undue delay in converting the forceps delivery to a Caesarean section.

The Coroner concluded that Baby D died as a result of forceps delivery, and that Dr C's decision to proceed to forceps, and to do so outside of an operating theatre, was a mistake.

ACC concluded that Dr C did not fail to observe a reasonable standard of care and skill. Although the post-mortem report concluded that the baby died from the trauma and resultant haemorrhage that occurred during the attempted forceps delivery, the pathologist

clearly stated that this did not imply that the obstetrician acted improperly or was in any way negligent.

My obstetric advisors' opinions were that Dr C's decision to proceed to a trial of forceps, and not to do so in an operating theatre, was reasonable in the circumstances. I accept their advice.

Dr C's decisions were made in light of the circumstances at the time, and in what he believed were the best interests of the mother and child. Care must be taken in judging, with the benefit of hindsight, decisions that Dr C made at the time after he examined Mrs B and assessed the situation. There is obviously room for debate between the various obstetric experts. Dr Cook commented that a decision to proceed with the forceps delivery, as Dr C did, or to wait and see, as Dr I recommended, are both clinically justifiable courses of action.

There is also clear dispute as to the actual cause of the baby's death. The Coroner concluded that the cause was trauma from the forceps delivery. Dr C submitted further evidence from Professor J, who strongly suggested that the cause of death was unrelated to the forceps delivery. Dr H, however, disagrees.

There has been a lot of discussion about the cause of the baby's death during my investigation, and those of ACC and the Coroner. However, it is not my role, as Health and Disability Commissioner, to determine cause of death.

It is always possible to re-evaluate clinical decisions with the benefit of hindsight and, especially when there has been a poor outcome, to conclude that a different clinical decision may well have resulted in a better outcome. However, in my opinion Dr C's decisions with respect to Mrs B's care and the baby's delivery were reasonable in the circumstances.

Although the outcome in this case was undeniably tragic, I accept my advisors' opinions that Dr C managed this labour and delivery with reasonable care and skill. In my opinion, Dr C did not breach Right 4(1) of the Code.

Right 5(1)

Under Right 5(1) of the Code, Mr A and Mrs B had the right to effective communication with Dr C.

Mr A and Mrs B were concerned that Dr C was difficult to understand and that he directed most of his comments to the midwife, Ms F; also, that he did not advise them properly about the different options available for delivering the baby.

Dr C stated that the only time he did not communicate directly with Mr A and Mrs B was when he was kneeling down to perform the forceps delivery. At this stage he relied on Ms F to convey what was happening. He believed that he had discussed his findings and proposed management plans with Mr A and Mrs B after each assessment. He recorded that there had been discussion in Mrs B's clinical records. Dr C stated that he was not told that Mrs B was afraid of and did not want a forceps delivery, and was given no cause to think

that Mrs B did not understand what he said or that she wanted further information. Ms F's recollection of communication with Mr A and Mrs B is consistent with that of Dr C.

Mr A and Mrs B clearly believe that Dr C did not give them sufficient information. Mrs B wishes she had been able to talk more with Dr C, in particular regarding her desire to avoid a forceps delivery. It is unfortunate that Mrs B's LMC, Dr E, was unable to conduct this delivery, as these issues are more easily canvassed during the antenatal period without the pressure of an impending delivery. As Dr C was unaware of Mrs B's concerns about forceps, he could not take appropriate steps to address them.

I appreciate that labour and birth can be an unfamiliar and stressful situation for first-time parents, and that complicates communication and comprehension. Mr A and Mrs B genuinely believe that communication with Dr C was inadequate. Dr C clearly believes that he did communicate appropriately and had no reason to believe that better communication was necessary.

On the basis of the available evidence, I am satisfied that Dr C took reasonable steps in the circumstances to communicate with Mr A and Mrs B about what was happening and why. Accordingly, in my opinion Dr C did not breach Right 5(1) of the Code.

Right 6(1)(b)

Mr A and Mrs B believe that Dr C did not advise them about different options available for delivering Baby D. Dr C stated that he discussed with Mr A and Mrs B the options of allowing Mrs B to push, or to assist delivery, and that they were happy for Dr C to assist the delivery with forceps.

I accept my second obstetric advisor's advice that it would not be common practice to discuss the potential risks of forceps delivery in depth, as these are rare. It would be usual to advise that assisted vaginal delivery can fail and that Caesarean section might be required. It would also be usual to advise that an episiotomy was likely for a mid-cavity rotational forceps delivery.

In my opinion such information meets the standard of disclosure that a reasonable mother, in Mrs B's circumstances, would expect to receive (and is entitled to), under Right 6(1)(b) of the Code. Accordingly, Dr C did not breach Right 6(1)(b) of the Code.

Actions

- A copy of this opinion will be sent to the Medical Council of New Zealand, the Coroner, and ACC.

- A copy of this opinion, with identifying details removed, will be sent to the Royal Australian and New Zealand College of Obstetricians and Gynaecologists, and the Maternity Services Consumer Council, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.