Scottish Parliament Region: North East Scotland

Case 200701716: Tayside NHS Board

Summary of Investigation

Category

Health: Hospital; gynaecology

Overview

The complainant (Ms C) raised a number of concerns about her treatment by Tayside NHS Board (the Board), following the delivery of her first child by emergency caesarean. Ms C said that she suffered major blood loss after her discharge from hospital and had to be re-admitted. Ms C explained that the Board tried various procedures to control her bleeding which proved unsuccessful and eventually carried out a hysterectomy. Ms C said she wanted to know why 'a healthy 24 year old woman goes into hospital to have her first baby and comes out unable to have any more children and nearly dies in the process'.

Specific complaint and conclusion

The complaint which has been investigated is that the care and treatment Ms C received from the Board, following the delivery of her first child, was inappropriate (*not upheld*).

Redress and recommendation

The Ombudsman recommends that the Board ensure that, in future, good contemporaneous notes are made following delivery by caesarean section.

The Board have accepted the recommendation and will act on it accordingly.

Main Investigation Report

Introduction

1. In October 2007 the Ombudsman received a complaint from a woman (referred to in this report as Ms C) regarding her care and treatment by Tayside NHS Board (the Board), following the delivery of her first child by emergency caesarean. Ms C said she went into Ninewells Hospital (Hospital 1) on 21 May 2007, had her child by emergency caesarean on 22 May 2007 and was discharged on 25 May 2007 with no physical problems apart from slight discomfort. She explained she suffered major blood loss four days after leaving Hospital 1 and had to be re-admitted. Ms C said that the Board tried various procedures to control the bleeding, which proved unsuccessful, and eventually carried out a hysterectomy. Ms C said she wanted to know why 'a healthy 24 year old woman goes into hospital to have her first baby and comes out unable to have any more children and nearly dies in the process'.

2. The complaint from Ms C which I have investigated is that the care and treatment Ms C received from the Board, following the delivery of her first child, was inappropriate.

Investigation

3. My investigation of this complaint involved reviewing the documentation provided by Ms C and her partner (Mr D), clarifying the complaint with Ms C, making enquiries of the Board, obtaining several medical opinions from the Ombudsman's medical advisers (Adviser 1 and Adviser 2) and discussing the complaint with the Advisers. Ms C and Mr D also raised a number of specific concerns about the care and treatment provided by the Board. These have been included in my questions to Adviser 1 which appear later in the report along with Adviser 1's responses. I also examined, and sought further medical advice from Adviser 1, on the Board's detailed comments on my draft report. A number of questions arose from this advice and I, therefore, sought a second opinion from Adviser 2.

4. I have not included in this report every detail investigated but I am satisfied that no matter of significance has been overlooked. Ms C and the Board were given an opportunity to comment on a draft of this report.

Complaint: The care and treatment Ms C received from the Board, following the delivery of her first child, was inappropriate

5. In response to my enquiry, Adviser 1 provided a summary of, and comments on, the clinical care provided by the Board, whilst having regard to the complaint being investigated. Adviser 1 then answered my specific questions on this case, including those put forward by Ms C and Mr D. I have presented this information below.

Extracts from Adviser 1's Summary of, and Comments on, Ms C's Clinical Care during the Antenatal Period, Labour and Delivery

6. Ms C, then aged 24, was delivered at Hospital 1 with her first pregnancy. The baby was due on 10 May 2007 and antenatal care appears to have been entirety straightforward. Ms C was admitted on 21 May 2007 (ie 11 days after her due date) with spontaneous rupture of membranes at approximately 11:00. She was noted to be slightly hypertensive (blood pressure slightly high) on admission but all blood tests were normal at that time.

7. Ms C's baby was delivered by caesarean section at 16:30 on 22 May 2007 after a very difficult and complex delivery. This procedure was undertaken by a specialist registrar (the Registrar) supported by a senior consultant obstetrician (Consultant 1).

8. After delivery, it is recorded that there was an extension of the uterine incision (incision in the uterus) to the left which required further sutures and, because of the risk of ongoing oozing from the lower uterine segment incision, a drain was inserted. The lower uterine segment incision is a transverse incision made in the lower part of the uterus, just above the cervix, to perform caesarean section.

9. Ms C's placenta was checked and recorded as being 'complete' although membranes are recorded as being 'ragged'. The membranes spread from the surface of the placenta to completely surround the baby and the amniotic fluid (often referred to as the waters). These membranes, as the name would suggest, are thin and it is not an uncommon situation for them to appear ragged. The appearance of ragged membranes is probably not of any great significance here.

10. There are no comments to state whether the cavity of the uterus was manually checked before closing the uterus. An estimated blood loss of

800 millilitres was recorded. Overall the summary of labour would seem to be appropriate with the first stage of 9 hours and 40 minutes, the second stage at two hours and 50 minutes and the third stage of two minutes.

11. Ms C's post-natal recovery initially seemed to be straightforward. On 23 May 2007 (the day following delivery), the senior house officer's ward round review noted that there was minimal loss from the drain but with seepage of blood from the drain site. The query was, therefore, raised as to whether the drain was blocked and the drain was consequently removed. There is nothing in either the medical or midwifery notes to suggest that the removal of the drain was unusual in any way. (But see paragraph 29, Q5 for Ms C's comment on removal being 'very painful' and causing 'great discomfort'.)

12. Ms C was discharged home on 25 May 2007. Post-operative haemoglobin was found to be slightly reduced at 9.7, having been 11.9 on 21 May 2007. Most obstetricians would not institute treatment for anaemia where antenatal haemoglobin levels are above ten. Although Ms C's haemoglobin had dropped below the normal level, it was not significantly so and a drop of 2.2 would be in keeping with a difficult caesarean section.

13. The management of antenatal period, labour and delivery were all appropriate. There was a consultant, Consultant 1, present during the trial of forceps in labour and the notes are of good quality, demonstrating clear supervision of the Registrar. Caesarean sections, after failed trial of forceps, can be notoriously difficult and it is not unusual for an extension of the uterine wound to occur under such circumstances. Insertion of a drain would have been appropriate. I note in communications with the Ombudsman's office Ms C and Mr D comment that 'All the care received [after delivery] and up until 29 May 2007 is super and what you would expect from professionals'.

Adviser 1's initial comments on the post-natal period

14. Ms C was re-admitted to Hospital 1 via the Perth Royal Infirmary on 29 May 2007. The history was of a sudden onset of a heavy vaginal bleed and on assessment Ms C was found to be pale, but with pulse and blood pressure within normal parameters. A considerable number of blood clots were found in the vagina, and the birth canal, or cervical canal, was noted to be open. Ordinarily the cervical canal would be closed but if there was loss of tissue/blood from the uterine cavity (inside of the uterus), then the cervical canal would open to allow passage of these clots. A portable ultrasound scan at that

time showed the presence of either retained products of conception (ie placental tissue) or blood clot in the uterine cavity. The diagnosis of either retained products, or infection was made and antibiotics commenced as well as offering Syntocinon to try and resolve bleeding.

15. Haemoglobin on admission was 8.7 but subsequently dropped to 6.7 and a blood transfusion was offered. Subsequent review on 30 May 2007, and again on 31 May 2007, showed blood loss, following delivery, to have settled. Post-blood transfusion haemoglobin was 10.3 and at that time the working diagnosis was that there was underlying infective cause for Ms C's bleed. A departmental ultrasound scan was planned but a review of the notes suggests that it was anticipated that this would be normal. In the event, the ultrasound scan report of 31 May 2007 timed 13:20 read 'Soft tissue mass within the uterine cavity 89 x 21 x 64 millimetres. Blood flow present consistent with retained placental tissue'.

16. Subsequent to this there was a prompt review by Consultant 1 at 14:00, where a full assessment took place, including vaginal examination. Consultant 1 felt that the lower opening of the cervical canal was dilated and tissue was felt within the uterus. He queried as to whether this was a well organised clot or placental tissue. A blood clot that has been present within the uterus for a period of time can lose fluid and become more hard and fibrous and may then mimic retained placental tissue.

17. Quite correctly an evacuation of retained products of conception (also referred to as ERPC) was planned, but in the event there was a sudden massive blood loss of approximately two litres, on the ward at around 20:00. Ms C was transferred urgently to theatre where an examination under anaesthesia was undertaken with exploration of the uterine cavity. It was recorded there was only 'minimal products of conception' and this was later clarified as being membrane only. The uterus, however, was noted to be full of blood clots and the feeling was that this was an atonic uterus, ie a uterus where the muscle tone had relaxed, causing bleeding from the placental site. The uterine muscles are present in a criss-cross fashion through which the blood vessels serving the placental site travel. When a uterus is well contracted the muscle fibres squeeze the blood vessels and reduce the blood loss. If uterine muscles relax, and they can do this for a variety of reasons, then vessels open up and bleed. Atonic uterus is a common cause of post-partum (after the delivery of the baby) haemorrhage immediately following on from delivery, but

regardless of timing of bleed the first line of treatment is drugs to improve uterine muscle tone and thus reduce bleeding.

18. Ms C received a blood transfusion, platelet transfusion and the infusion of fresh frozen plasma. Additionally, various drugs were given to control the bleeding including Syntocinon, Ergometrine, Haemabate, and Cervigem. None of these measures proved sufficient to control bleeding and thus a hydrostatic balloon was inserted into the uterine cavity along with a vaginal pack. A hydrostatic balloon is a plastic tube with a large balloon at the end. This balloon can be inflated by water and this can act to stop bleeding by applying pressure to the inner walls of the uterus. The vaginal pack adds additional pressure to try and stem blood loss by mechanical means. At that time total blood loss of 3.8 litres was recorded. The bleeding initially seemed to settle with these latter measures. However, it shortly became apparent that Ms C was continuing to bleed and was, therefore, returned to theatre. The hydrostatic balloon was deflated and removed and it is recorded that verbal consent was obtained for a hysterectomy.

19. At that time, additional consultant support was sought and a senior consultant obstetrician (Consultant 2), also attended. Further conservative measures were undertaken to try and preserve the uterus, with insertion of a special suture referred to as the B-Lynch suture (a suture which envelops the uterus to offer an additional compression to hold the uterus in a more 'contracted' state, thus reducing blood loss).

20. However, this was unsuccessful in controlling the bleeding and thus a hysterectomy was undertaken. This was what is called a sub-total hysterectomy, in other words, removing the body of the uterus and part of the cervix, but leaving a small amount of the lower cervix. Despite this measure, bleeding continued and additional support was requested from the Radiology Department who attended and undertook embolisation (blocking) of the arteries to the cervix. This method was sufficient to control the bleeding. Ms C was eventually discharged home on 6 June 2007.

21. The team caring for Ms C had the view that the cause of her post-partum haemorrhage was infective in origin, with inflammation of the uterine tissues predisposing bleeding from the placental site. Following on from delivery, there is a usual upward migration of micro organisms from within the vagina into the uterine cavity, and inflammation in the lining of the womb a couple of days after

delivery is not unusual. However, on occasions, infection can be more severe leading to increased inflammation within the uterus and subsequent bleeding. In some cases more aggressive organisms can ascend into the uterine cavity causing the patient to be severely unwell secondary to this infection. However, there are no vaginal bacteriological swab reports in the bundle to clarify this. (Adviser 1 later confirmed that this information would not be required.) The ultrasound scan and vaginal findings prior to returning to theatre [for the ERPC] do suggest the presence of retained placental tissue (see paragraphs 15 and 16).

22. At the time of the ERPC only a small amount of membrane and clot was found. The microscopic element of the histology report (report on the structure of the tissue sample) on the membranes removed during the ERPC showed 'blood clot and effete chorionic villi, necrosis and marked acute on chronic inflammation'. 'Chorionic villi' suggests the presence of some retained placental tissue and 'necrosis' describes the breaking down of dead tissue. This report also commented on 'acute on chronic inflammation', suggesting a longstanding (or chronic) infective process within the uterine cavity which had been exacerbated by a more recent (or acute) infection.

23. There was, however, evidence of further retained placental tissue based on the histology report of the uterus removed during the hysterectomy. This read 'some residual placental material remains'. The histology report does not comment on the amount of placental tissue, but this is present in what is referred to as the 'macro report', and thus would have been obvious to the naked eye. Therefore, the macro report confirms the presence of placental tissue. The micro report of the uterus stated that the lining of the womb was largely replaced by necrotic tissue (dead tissue) with associated acute on chronic inflammation.

24. Thus it would seem that placental tissue did remain within the uterus although the most probable cause for the massive bleeding was, as originally suspected by the team, that of an acute on chronic infection. It is not surprising, therefore, given the extent of the inflammatory changes that conservative measures proved to be inadequate in controlling blood loss.

Adviser 1's summary and conclusions

25. It is clear from the very detailed notes [on the post-natal period] that senior obstetric involvement, with initially Consultant 1, and then with the additional

support of a further consultant (Consultant 2), was available throughout. The decisions made were entirely appropriate and it would seem that every attempt was made to conserve Ms C's uterus before proceeding to hysterectomy. This treatment was initially in the form of drugs to promote uterine contractions and when this failed a mechanical device, the hydrostatic balloon, was employed to try and compress the bleeding vessels within the uterus.

26. When this failed, Ms C was returned to theatre and a B-Lynch suture inserted. Following failure to control haemorrhage with this conservative technique, the team proceeded to hysterectomy and ultimately embolisation of blood vessels. These interventions are entirely in keeping with recommendations made by The Confidential Enquiry into Maternal and Child Health, an organisation which aims to improve the health of mothers, babies and children by carrying out enquiries on maternal and child health and disseminating its findings and recommendations.

27. In conclusion, Ms C's major bleed was due predominantly to acute on chronic infection. The histology of the uterus would suggest that this area of inflammation extended to most of the lining of the womb and also that placental tissue remained. The presence of non-viable (dead) placental tissue would act as a further focus for infection and could also, in its own right, cause uterine bleeding. The team were left with a situation with a uterus that was infected and that would not contract sufficiently to halt bleeding. The actions subsequently taken were, as I have mentioned, entirely appropriate and unavoidable.

28. The question, however, must arise as to whether the remaining placental tissue acted as the focus of infection and thus precipitated the events that led to Ms C's admission on 29 May 2007. The placenta, at the time of delivery, was recorded as being complete although the membranes were noted to be ragged. This latter finding is not unusual and would not, in its own right, be an indication for intervention. However, there is no record within the caesarean section notes of the uterine cavity being checked to ensure that all placental tissue had been removed. And it would seem from the histology report that, in fact, a piece of placenta was left within the uterus and it is likely that this acted as the focus of the subsequent infection, although one cannot be absolute about this.

Specific Questions and Adviser 1's Responses

29. I set out below the specific questions put to Adviser 1 and his responses:

Q(1) Is there any evidence that, when Ms C was re-admitted to hospital on 29 May 2007, she was, as she has stated, 'put in a side room [for two days] and nothing … done apart from a scan'?

'A(1) Although Ms C was in a side room for two days, it is not correct to say that nothing was undertaken over that period of time. Ms C's initial heavy bleed had settled on admission, her anaemia had been treated by blood transfusion and a working diagnosis of an underlying infective cause for her bleed was being treated. To all intents and purposes she was making a satisfactory recovery when the result of the scan of 31 May 2007 was available. This was acted on promptly with review by Consultant 1, the correct decision to explore the uterine cavity was taken, and in the event Ms C then went on to have a major bleed and the return to theatre was expedited.

It is clear from the histology report, that placental tissue remained within the uterine cavity. It is difficult to say whether an earlier exploration of the uterine cavity would have been beneficial or not. There was certainly evidence on histology of extensive inflammatory change within the uterus and this would have pre-dated Ms C's admission. Treatment with antibiotics was appropriate. In the absence of massive haemorrhage, then one would normally have recommended at least 24 hours of antibiotics before considering exploring the uterine cavity. Thus, the earliest that Ms C could have gone to theatre would have been on 30 May 2007, however, the notes read that Ms C's symptoms were resolving on antibiotics and, indeed, the team were anticipating the ultrasound scan to be normal.

The delay under the circumstances was, therefore, not unreasonable and I would doubt that earlier intervention would have made a significant difference. It is quite possible that major haemorrhage may have occurred at the time of any ERPC designed to remove any placental tissue undertaken prior to 31 May 2007. However, it is impossible to be precise as to whether 24 hours' earlier intervention would have made a difference or not.'

Q(2) Could Ms C's womb have been saved if, as she stated to this office, 'a D&C had been performed in the first place'?

'A(2) A 'D&C', dilatation and curettage, is an old fashioned gynaecological procedure that involves dilation of the cervix and the

scraping of the uterine cavity using a metal instrument known as the curette. In actual fact, the correct description of the procedure undertaken would have been an ERPC and this was the procedure undertaken by Consultant 1. Consultant 1 did use a curette to try and ensure the uterine cavity was empty at the end of that procedure.

The sequence of events was incomplete removal of placenta at the time of caesarean section, leading to an acute on chronic infection within the uterine cavity which, in turn, predisposed to a massive haemorrhage. The earliest that ERPC could have been undertaken would have been 30 May 2007 ie after 24 hours of antibiotic therapy; the procedure, if undertaken earlier, may have predisposed to haemorrhage in its own right. The placental tissue noted in the histology of the uterus was clearly not detected at the time of the emergency ERPC. It can, under such circumstances, sometimes be difficult to detect all placental tissue remaining. It is not at all clear from the histology report as to how big this piece of placental tissue was but it was obviously of a sufficient size to be visible to the naked eye as per the Macro Report.'

Q(3) If the haemorrhage was still ongoing after the hysterectomy, does this mean that the hysterectomy was unnecessary?

'A(3) The hysterectomy was necessary to control bleeding from an acutely inflamed uterus. Unfortunately the bleeding continued from pelvic blood vessels and thus embolisation was required. From reading the notes I believe that the correct sequence of events was undertaken here. Hysterectomy could be undertaken far more rapidly than embolisation which in any event may not, with a large infected and atonic uterus, have been sufficient to control bleeding on its own.'

Q(4) Should the placenta have been checked after the caesarean? Please explain why. Is there any evidence that this was done in this case?

'A(4) The placenta was checked after delivery and found to be complete and this is clearly recorded in the 'Assisted Delivery Summary' and is recorded under the third stage [of labour]. However, the histology of the uterus does show that placental tissue remained within the uterine cavity, and the failure to manually check the uterine cavity after caesarean section, was a missed opportunity to ensure that the uterine cavity was completely empty.'

Q(5) Ms C and Mr D have raised concerns about the removal of a 'pelvic drip' on 24 May 2007. Ms C claimed that the day before the 'drip' was removed there was blood pouring from it, all over her and the floor. Mr D suggested that the removal of the 'drip' caused Ms C 'great discomfort', that it was 'very painful' and Ms C could feel it 'tugging from one side of her stomach to the other on removal'. Is there any evidence in the notes to support these comments? Could the removal of the 'pelvic drip' have, in any way, contributed to Ms C's subsequent problems?

'A(5) The pelvic drip, in fact, refers to a pelvic drain that was inserted at the time of caesarean section for the reasons I have previously alluded to. It was apparent that this drain had become blocked as there was blood seeping from the drain site and thus it was removed. The drain is a wide diameter hollow plastic tube and its removal can be painful and distressing to the patient. Having reviewed the midwifery and obstetric notes, however, this does not seem to have been a particularly difficult removal of drain. It is not unusual for patients to feel a tugging from one side of the stomach to the other on removal and this simply reflects the position of the drain within the abdomen/pelvis. The removal of the drain would not in any way have contributed to Ms C's subsequent bleeding.'

Q(6) Is there any evidence on file to suggest, as Ms C alleges, that Consultant 1 left the surgery before she was 'put back together'? If so, is this normal procedure?

'A(6) I cannot find any obvious reference in the notes to Consultant 1 leaving the theatre before the end of the procedure although this point is highlighted in Ms C and Mr D's note of 14 November 2007. This reads 'A call or a request comes in for [Consultant 1] to go to another part of the hospital as we are all still sitting there during the surgery. He attends to me for about another 3 minutes and then leaves the theatre'.

It would seem from this letter that Consultant 1 was indeed called to attend elsewhere in Hospital 1. The Registrar is recorded as being a specialist registrar and thus would be an entirely appropriate person to complete the caesarean section. It would certainly seem that there was no argument that Consultant 1 was there for the delivery of the baby, which is clearly the most difficult part of the procedure, and would seem to also have supervised at least part of the repair of the uterus. Consultant 1 does make notes concerning the delivery but it is not clear from these, or indeed from the Registrar's notes, as to when he left the theatre. This highlights

the importance of making good contemporaneous notes of procedures in theatre. Nonetheless, it would have been appropriate to allow the Registrar to complete the caesarean section without further consultant involvement.'

Further enquiry of the Board

30. Having considered Adviser 1's views and, in particular, his reference at paragraph 29 A(4) to the Board's 'failure to manually check the uterine cavity after caesarean section, [being] a missed opportunity to ensure that the uterine cavity was completely empty', I made a further enquiry of the Board. I wanted to clarify whether the documented checks carried out by the Board on Ms C's placenta, noted on the Assisted Delivery Summary Sheet, were visual only, or whether they signified that a manual check of Ms C's uterine cavity had also been conducted, in order to determine whether any placenta remained.

31. In their response, the Board explained that it was customary for the accoucher (person delivering the baby) to check the uterine cavity manually at caesarean section following delivery of the placenta and membranes. They said that once they have assured themselves that the cavity is empty, they assign the description 'complete' to the placenta and membranes on the Assisted Delivery Summary Sheet. The Board said they believed that this happened in Ms C's case. The Board added '[Consultant 1] has explained that he always checks the uterine cavity and he also always asks junior doctors that he is supervising to do so. [Consultant 1] has performed many caesarean sections and believes that this delivery was no different to any other that he has performed'.

32. It was noted that the entry 'complete' appeared beside placenta and membranes on the Assisted Delivery Summary Sheet, and that, from the Board's explanation, this entry appeared to be for both the visual and manual checks for completeness of the placenta and membranes. When questioned, the Board acknowledged that the Assisted Delivery Summary Sheet did not have a specifically assigned section for recording that the manual check of the uterine cavity was performed, and that it had not been customary for the Board to document this in writing. The Board subsequently advised me that, in light of this case, they had amended the Assisted Delivery Summary Sheet to include the recording of the manual check of the uterine cavity.

Adviser 1's summing up and final conclusions

33. After considering the additional information provided by the Board, Adviser 1 summed up his findings on the case:

> 'In essence, in this case, a longstanding infected process is likely to have developed following on from delivery and may well be, at least in part, that which one would normally expect to see with ascending organisms from the vagina. Clearly, however, the information as recorded by the histology report went beyond what one would normally see and this would have led to the suggestion that there had been a further acute exacerbation of the infection either by a more aggressive organism entering the uterine cavity or by the normal inflammatory response becoming abnormally acute.
>
> There was clearly a significant piece of placenta left within the uterine cavity, as this was visible on macro-scopic examination of the uterus by the histopathologist. Its actual dimensions, however, are not recorded. This, in its own right, may have predisposed to bleeding but would also, as non-viable tissue, have acted as a focus for infection to develop further.
>
> Further, the ultrasound report on 31 May 2007 records a soft tissue mass within the uterine cavity measuring 89 x 21 x 64 mm and this was felt to be consistent with retained placental tissue. This was not a small piece of placenta, therefore, and I would have expected this to have been detected at manual examination of the uterine cavity.
>
> I would, therefore, conclude that either the manual examination of the uterine cavity was not undertaken or, if it was, then it was less than thorough, as although it may be acceptable to miss a very small piece of placental tissue, a piece of tissue measuring 8.9 cm, in its longest diameter, is clearly of a size that should not be missed.
>
> I note the comments made by the Board in relation to the Assisted Delivery Summary Sheet. There is no space on this for confirmation that the uterine cavity has been manually checked to ensure that it is empty and this is something that should be rectified. The assumption is that the completeness of the placenta includes both a visual inspection of the placenta and check of cavity. A visual inspection of placenta occurs after delivery and may not be performed until after the uterus has been closed. A midwife is often occupied with the baby and parents immediately after delivery. I appreciate that it is routine practice in Tayside for the uterine

cavity to be checked manually, but this is of such importance that there should be a separate point for clarification that it has been undertaken.'

34. When questioned, Adviser 1 confirmed it was his view that, on balance, had the manual check of the uterus been done, or been done properly, the piece of placenta could have been discovered and removed. This would have meant there would not then have been a further focus for infection and the extent of the bleeding would have been reduced such that Ms C would not have required a hysterectomy.

Board's comments on the draft report

35. The Board made extensive comments on the draft report of my investigation of Ms C's complaint. The key points made by the Board appear below.

36. The Board strongly disputed Adviser 1's suggestion that the entire 89 x 21 x 64 millimetre tissue mass identified by the first ultrasound performed on 31 May 2007 was placental tissue. As part of the evidence for this, they stated that 'blood clot, necrotic decidua (not placenta), inflammation and retained placenta can all have a similar appearance on ultrasound scan [following delivery of the baby]'.

37. The Board said that no large piece of placenta was identified at the time of the ERPC on 31 May 2007 and that the ultrasound scan following the ERPC showed a 'clear midline echo, suggesting that the [uterine] cavity was empty and that there was no significant retained placental tissue'.

38. The Board also said that the macro examination of the membranes removed at the time of the ERPC showed predominantly haemorrhagic material with no macroscopic evidence of placental tissue and only microscopic evidence of a small amount of chorionic villi.

39. The Board also put forward views on the relevance of the macro and micro reports on the uterus removed at the time of the hysterectomy. They stated:

> 'In the [tissue sample of the uterus] the area that is reported macroscopically as containing placental tissue is clearly not placenta on microscopic examination. This area that macroscopically is reported as 'residual placental tissue' is predominantly haemorrhagic tissue. 'Numbers of effete chorionic villi' were seen within this on microscopic examination.

The term 'numbers' suggests a low volume, almost negligible amount of placental tissue. The Board concluded that these findings suggests 'an insignificant amount of microscopic products of conception remained following the ERPC, rather than a significant piece of placenta.'

40. After further discussion with Adviser 1 on the results of the macro report, I asked the Board to explain why the pathologist might have recorded the findings of 'residual placental material' (ie indicating that it was visible with the naked eye) if, as had been suggested, it was 'an insignificant amount'. I also asked the Board if, on reflection, their pathologist felt that this was not visible placental tissue, then could they explain why the histology report was phrased in the manner it was. In their response, the Board explained that the pathologist was now deceased and, therefore, it was not possible for them to address my queries directly. The Board did, however, suggest that an independent pathologist could be asked to examine the specimens.

41. In light of the strength of the challenge from the Board, the seriousness of the issues being considered and the uncertainty about the evidence in this case, I decided to seek a second medical opinion. Adviser 2, a practising obstetrician with 23 years' experience, provided this second opinion on the case which is set out below.

Adviser 2's opinion

42. Adviser 2 said:

'The crucial issue seems to me to be whether or not the doctors who undertook the caesarean section failed to check the uterine cavity properly/at all, and as a consequence a large piece of placenta measuring 89 x 21 x 64mm was left behind. The evidence which supports this is as follows:

1 An ultrasound scan carried out in the radiology dept on 31st May 2007 recording 'soft tissue mass within the uterine cavity 89 x 21 x 64mm. Blood flow consistent with retained placental tissue'.

2 A clinical note which states 'tissue felt in uterus'. This examination took place after the scan and the doctor goes on to say: 'May be organised clot but [ultrasound] suggests retained placenta. (This is inconsistent with [caesarean section] findings and placental examination.)

3 Various histology reports recording the presence of placental tissue.

My concerns about reaching the conclusion that a large piece of placenta (89mm is 3½ inches) was left in the uterus after the caesarean section, based on this evidence, are as follows:

1 A piece of placenta of this size would have been clearly recognisable as placental tissue on scan (by a radiologist or obstetrician skilled in the field of obstetric ultrasound) and would have been unlikely to have been reported as 'soft tissue'. It is much more likely that this was blood clot. The comment 'some blood flow present' does not detract from this as [the type of ultrasound test used] can often give rise to an artificial appearance of some degree of blood flow even when none exists.

2 The midwife who examined the placenta after delivery would have been unlikely to have described it as complete if such a large piece were missing.

3 What happened to this piece of placenta? It was not found during the ERPC. Therefore, it must have been passed along with blood and clots between the time of the ultrasound in the radiology department and the examination in theatre. It seems to me unlikely that such a large piece of tissue would have gone unnoticed.

I would, therefore, be unhappy about criticising the Board for failing to carry out a manual examination of Ms C's uterine cavity or failing to carry it out properly, since I do not believe that there is sufficient firm evidence on which to base such an opinion. Small placental remnants may have been retained, which would explain the histology, and could have contributed to the sequence of events resulting in hysterectomy. However, this could happen even if a competent examination of the uterus took place at the time of caesarean section and would not, in my view, warrant criticism of the staff involved.

It is impossible to be certain what actually happened, but I think there is sufficient doubt, such that it would be difficult to defend our position.'

43. When I discussed Adviser 2's views with him, he offered the following additional explanations:

'A piece of placental tissue of the size described in the ultrasound of 31 May 2007 would have characteristic appearances which would be recognisable by an ultrasonographer, experienced in obstetric ultrasound. The interpretation of the results would depend on the experience of the ultrasonographer who produced the report on the ultrasound. The

consultant would then comment on the report. There is room for doubt as to whether the tissue was placenta or blood clot. It can be quite difficult to differentiate between the two. There is insufficient evidence to say that tissue was placental tissue.

The Macro report which states 'area of haemorrhage where some residual placental material remains' shows that there was some placental tissue left in Ms C's uterine cavity which was visible to the naked eye and this would have contributed to the infection/bleeding. This was not the piece of tissue of 89 x 21 x 64 mm. Some placental tissue can remain following delivery but there is insufficient evidence to suggest that the Board did not perform the manual check of the uterus properly or at all.'

Conclusion

44. Adviser 1's view is that the care and treatment provided to Ms C by the Board following her re-admission to Hospital 1 on 29 May 2007 was entirely appropriate and that all possible conservative measures were taken to try to stem the bleeding before the decision was made, and consent obtained, to perform a hysterectomy. I agree with Adviser 1's opinion and, therefore, cannot be critical of the Board's actions in this area. However, in determining this case, it is clear that the actions of the Board, immediately following the delivery of Ms C's baby by emergency caesarean, required further scrutiny. Specifically, my focus has been on whether placental tissue was left inside Ms C's uterine cavity and, if so, whether that caused her subsequent infection and haemorrhage.

45. Adviser 1 and Adviser 2 clearly have different views on this issue. Adviser 1 has concluded that, having considered all the evidence including the Board's comments on my draft report, the manual examination of the uterine cavity was undertaken, but that it was not undertaken properly. Adviser 1 has said that a significant piece of placental tissue, measuring 89 x 21 x 64 millimetres remained in Ms C's uterine cavity, following the completion of the caesarean section, and this acted as an additional focus of infection and resulted in excessive bleeding. Adviser 1 is of the view that, on balance, had this large piece of placental tissue been removed following delivery, then a hysterectomy would not have been necessary. Adviser 1 has also referred to the results of the histology of Ms C's uterus, removed during the hysterectomy, as further evidence which supports his view.

46. Adviser 2 clearly has a different view. He believes that it was much more likely that the 89 x 21 x 64mm piece of tissue identified in the ultrasound of 31 May 2007 was blot clot and not placenta. He does agree with Adviser 1's view that the histology of the uterus showed that some placental tissue, which would have been visible to the naked eye, was retained following the caesarean section and that this could have contributed to the sequence of events resulting in hysterectomy. However, Adviser 2 has said that the placental tissue, identified by the histology of the uterus, could have been present even if the Board had performed a competent examination of Ms C's uterus at the time of caesarean section.

47. In reaching my conclusions on this case, I have carefully considered and weighed up both advisers' opinions, the Board's comments, Ms C's initial complaint and the evidence in the medical records. These show that the following points are not in dispute

- the delivery of Ms C's baby was very complicated;
- Ms C had to have an emergency caesarean;
- there was retained placental material at the time of the caesarean section;
- retained placental material contributed to a further acute on chronic infection within the uterine cavity which in turn contributed to a massive haemorrhage;
- Ms C's uterus needed to be 'evacuated' to prevent further haemorrhage;
- failure to stop the bleeding led to a hysterectomy; and
- this was a very frightening ordeal for both Ms C and Mr D.

However, having considered all the evidence, I cannot definitively say:

- how much placental tissue was retained; and
- to what extent the retained placental tissue contributed to the additional infection which resulted in the hysterectomy.

48. Having considered all the evidence, I agree with Adviser 2's view that the 89 x 21 x 64 millimetre piece of tissue was of such a substantial size that it would be unlikely that an experienced midwife would describe the placenta as 'complete' if it had such a large piece missing from it, even given the difficult delivery of Ms C's baby. I believe that Adviser 2's view has cast sufficient doubt on the opinion offered by Adviser 1 and it would, therefore, be inappropriate for me to be critical of the Board's actions in this case, as there is now sufficient evidence that a manual check of Ms C's uterine cavity was carried out and there

is insufficient evidence to suggest that the Board failed to carry out that manual check competently.

49. I, therefore, conclude that the care and treatment provided to Ms C, following delivery of her first child, was appropriate and I do not uphold this complaint. I am pleased to note that the Board have already amended the Assisted Delivery Summary Sheet template to include recording of the manual check of the uterine cavity. Had they not done so, I would be recommending that now.

Recommendation

50. However, in light of Adviser 1's comments on some general aspects of this case, I recommend, going forward, that the Board ensure that, in future, good contemporaneous notes are made following delivery by caesarean section.

51. The Board have accepted the recommendation and will act on it accordingly. The Ombudsman asks that the Board notify him when the recommendation has been implemented.

Annex 1

Explanation of abbreviations used

Ms C	The complainant
The Board	Tayside NHS Board
Hospital 1	Ninewells Hospital
Mr D	The complainant's partner
Adviser 1	One of the Ombudsman's medical advisers
Adviser 2	One of the Ombudsman's medical advisers
The Registrar	Senior Registrar
Consultant 1	A senior consultant obstetrician
ERPC	Planned evacuation of retained products of conception
Consultant 2	A senior consultant obstetrician

Annex 2

Glossary of terms

Accoucher	Person delivering the baby
Acute on chronic inflammation	Suggesting a long standing (or chronic) infective process within the uterine cavity which had been exacerbated by a more recent (or acute) infection
Atonic uterus	A uterus where the muscle tone has relaxed, causing bleeding from the placental site
B-lynch suture	A suture which envelops the uterus to offer an additional compression to hold the uterus in a more 'contracted' state thus reducing blood loss
Cervigem	Drug to control bleeding
D&C	Dilatation and curettage. This is an old fashioned gynaecological procedure that involves dilation of the cervix and the scraping of the uterine cavity using a metal instrument known at the curette. The correct description of the procedure undertaken would have been examination under anaesthesia with exploration of uterine cavity and evacuation of retained products of conception (ERPC)
Decidua	The lining of the womb during pregnancy
Planned evacuation of retained products of conception (ERPC)	Examination under anaesthesia with exploration of uterine cavity and evacuation of retained products of conception

(Effete) chorionic villi	Suggests the presence of some retained placental tissue
Embolisation	Blocking
Ergometrine	Drug to control bleeding
Haemabate	Drug to control bleeding
Histology report	Report on the microscopic structure of the tissue sample
Hydrostatic balloon	A plastic tube with a large balloon at the end. This balloon can be inflated by water and this can act to stop bleeding by applying pressure to the inner walls of the uterus
Hypertensive	High blood pressure
Lower uterine segment incision	A transverse incision made in the lower part of the uterus, just above the cervix, to perform caesarean section
Necrosis	The breaking down of dead tissue
Necrotic/ Non-viable tissue	Dead tissue
Post-partum	After the delivery of the baby
Retained products of conception	Placental tissue
Syntocinon	An artificial hormone used to promote strength and effectiveness of uterine contractions
Uterine	Of the uterus
Uterine cavity	Inside of the uterus

Vaginal pack	Device which is used to apply pressure to the inner walls of the uterus by mechanical means