NHS Foundation Trust

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12 May 2015

Mr P Kelly
H M Senior Coroner for the District of
North Lincolnshire & Grimsby
Cleethorpes Town Hall
Knoll Street
CLEETHORPES
DN35 8LN

...oners Unit
14 MAY 2015

Dear Mr Kelly

Regulation 28: Report to prevent future deaths

Further to your letter of 13 March with enclosed Regulation 28 report, the Trust has now completed the patient safety review of the three cases that you requested.

The report was issued following the death of three patients who had undergone hip surgery. A review of the three cases has been undertaken, from both an anaesthetic and surgical perspective, by , Senior Consultant Orthopaedic Surgeon, and Consultant Anaesthetist and Associate Medical Director, in order to determine the need for any further Trust actions.

The outcome of the review is as follows:

Maurice Cowling

Mr Cowling died on 18 October 2013. He suffered from Parkinson's disease, dementia and atrial fibrillation.

He was admitted to hospital with a fractured hip on 16 October 2013. He had recently been in hospital (in September) with a chest infection and dehydration. Following this admission he had been discharged to Gesham Lodge for respite care.

On admission to hospital on 16 October he was assessed by the Orthopaedic surgeons. A decision was made to take him to theatre for surgery to fix the inter-trochanteric fracture of the left hip. The procedure that was planned was a DHS fixation (dynamic hip screw). This is a very common procedure performed in elderly patients who have suffered a fracture of this type. The surgery was then performed on the afternoon of 17 October by a very experienced Staff Grade Orthopaedic surgeon who has carried out hundreds of these procedures in the past. The surgeon noted that the bone density was 'remarkable' in this particular case; drilling through the femur was very difficult. This resulted in the drill bit breaking. The surgeon was able to see the broken drill bit on the screening x-ray. It then became clear that the patient was bleeding. Advice was sought from a Consultant Orthopaedic Surgeon and the decision was made to pack the wound in an effort to reduce the amount of bleeding and to call for assistance from the on-call Consultant Vascular Surgeon. In the meantime the Consultant anaesthetist was taking all appropriate steps to resuscitate the patient. This included blood transfusions and drugs to support the circulation.

The provision of vascular surgery nationally is now based at regional centres (hubs). The nearest regional centre for Scunthorpe General Hospital is Hull Royal Infirmary. The on-call Consultant Vascular Surgeon on this day was working at Castle Hill Hospital and once contacted he immediately made his way to SGH. A diagnosis of an injury to the profunda femoris artery was made and the damaged blood vessel was repaired.

Despite all of the measures Mr Cowling suffered a cardiac arrest. As a result of his pre-existing co-morbidity Mr Cowling had very little physiological reserve to cope with such a significant blood loss. Following the surgery his condition deteriorated further and he sadly died shortly afterwards.

The Trust investigated this case as a Serious Untoward Incident (SUI) and, as you are aware, an independent external opinion was obtained from a Consultant Orthopaedic Surgeon, [redacted]
He confirmed that the injury sustained to the blood vessel is a rare but well recognised complication and that the complication was also managed appropriately.

The SUI report made a number of recommendations in relation to minimising the risk of such an incident occurring again and also ensuring staff are aware of what action needs to be taken in a similar case. I am aware that the SUI report and action plan were shared with you ahead of the Inquest which was held. I can also confirm that all actions are now complete.

Robert Connon

Mr Connon was operated upon at St Hugh's Hospital. This hospital is managed by a different Trust and it is therefore difficult for this Trust to comment upon the surgical aspects of this case. However, our understanding is that Mr Connon was undergoing a different procedure, namely an elective total hip replacement. This was performed on 28 July 2014. The hip joint was approached through a postero-lateral incision. The surgeon then prepared the acetabulum in the usual manner and a cap was placed in-situ and fixed with screws. The surgeon then went on to insert the stem into the femur. It seems as though all was proceeding routinely until the anaesthetist, towards the end of the operation, informed the surgeon that the patient's blood pressure had dropped when the hip had been reduced. At this point it was not clear what the cause of the fall in blood pressure was but a number of potential causes were considered including anaphylaxis (severe allergic reaction), pulmonary embolus, a cardiac event or bleeding.

The anaesthetist felt that the patient needed to be cared for in an ITU and arrangements were therefore made to transfer the patient to the Diana Princess of Wales Hospital in Grimsby.

Unfortunately, on arrival his condition was very poor and just a few minutes later he suffered a cardiac arrest. Resuscitation was carried out successfully. He was found to be in complete heart block (abnormal rhythm) and a temporary pacemaker was inserted. The precise cause of the patient's collapse still remained unclear but the possibility of vascular injury from the acetabular screw was something that the surgeon and anaesthetist had raised as a possibility, and indeed treated the drop in haemoglobin appropriately.

Despite full escalation by way of treatment in ITU the patient's condition did not improve and he deteriorated to the extent that he suffered another cardiac arrest and was confirmed deceased in the early hours of the following day.

The subsequent post mortem revealed that the patient had an enlarged heart with severe triple vessel coronary artery disease. The Pathologist also noted that there was a screw from the operation protruding into the pelvis. This appeared to be at the epicentre of an extensive pelvic bleed. It was not possible for the Pathologist to identify specifically which vessel the bleed had originated from because the arteries were heavily calcified and difficult to cut. The Pathologist concluded that the cause of death was the pelvic haemorrhage which had arisen as a result of the acetabular screw inserted during the operation.

From an anaesthetic point of view the Trust is of the opinion that all appropriate management was undertaken when the patient was transferred to the DPOW from St Hugh's Hospital. However, at that stage he had already sustained a significant insult following the significant haemorrhage during the hip surgery and, once again, the patient's physiological reserve was insufficient to tolerate this resulting in the subsequent cardiac arrests and the patient's death.

From an orthopaedic point of view it is relatively common for the acetabular screw to enter the pelvis during this type of surgery but the haemorrhage which occurred here is not something that the surgeons have previously encountered. The surgery was performed by a very experienced surgeon (a Consultant) and the technique used was a standard one. Precisely why on this occasion there was such a significant haemorrhage is very difficult to extablish. The Pathologist has noted that he was unable to identify the blood vessel from which the bleed had originated because the arteries were heavily calcified, difficult to cut and the site was obscured by blood clot. It is therefore difficult to conclude with any degree of certainty why the haemorrhage occurred in this case. It has been assumed that the acetabular screw must have damaged a blood vessel but the evidence to support this is not unequivocal given the fact that the bleed did not become apparent for some time after insertion of the screws. Another possibility, given the condition of the patient's arteries, is that there may have been an abnormality of the blood vessel such as an aneurysm.

Leonard Ireland

Mr Ireland was admitted to hospital on 18 June 2014 following a fall resulting in a fracture of his left hip. He underwent a hemiarthroplasty on the following day.

It was noted that following the operation he was confused and aggressive, which had apparently not been the situation prior to admission. The Mental Health Liaison Team were asked to review him and found that he had been feeling low in mood and lacked motivation. Efforts were made to mobilise him and by 29 June he required minimal assistance to transfer to his chair. However, he was reluctant to mobilise. He was then transferred to Bradley House for rehabilitation on or about 3 July.

He did not do well at Bradley House and became increasingly confused and violent. He was re-admitted to hospital via the Accident & Emergency Department on 9 July. At this stage it was found that his hip wound was leaking and infection was suspected. On admission to the ward he was also diagnosed with a urinary tract infection. He was commenced on intravenous antibiotics and also taken to theatre that same day for debridement of his wound along with the re-suturing. On the following day a VAC wound dressing was applied.

There were problems administering his intravenous antibiotics as Mr Ireland repeatedly pulled out his cannula. He was therefore commenced on oral antibiotics, eventually given in the form of a syrup. Matters were further complicated by the fact that he had several falls from his bed since admission. He also remained very agitated and aggressive, requiring the need for sedation. Compliance with his medication was poor.

A second opinion was sought from another Consultant Orthopaedic Surgeon who felt that although the wound appeared slightly red it was not grossly infected. The Mental Health Team was asked to see the patient again on 20 July. They advised Lorazepam. The Consultant Orthopaedic Surgeon would ideally have wished to perform a procedure to remove all the metalwork in the light of the infection but it was not felt that he would survive such a procedure and the plan was therefore to treat him conservatively for the time being.

The intention was to take him back to theatre on 30 July as his wound was gaping but his blood test results (particularly his INR- clotting ratio) were very abnormal and the chances of him successfully getting through any surgery were clearly poor. It was therefore decided that it would be in his best interests to receive palliative care. He died on 12 August.

Mr Ireland suffered a recognised complication of his hemiarthroplasty, namely infection. This was despite him being given prophylactic antibiotics. His behaviour on the ward after his surgery was challenging and made it difficult to treat him effectively on occasions.

The review of the case has confirmed that the management of this patient was appropriate. Unfortunately, it is not uncommon for patients with multiple co-morbidity to develop an infection following this type of surgery despite staff using their best endeavours to try to prevent such a complication occurring.

Summary

The Trust's review of these cases has confirmed that the complications suffered by each of these three patients were managed appropriately. The complication of haemorrhage suffered by Mr Cowling and Mr

Connon is extremely rare. Despite the Trust carrying out hundreds of hip operations every year the complication is not something the clinicians at the Trust had come across for some considerable time. However, as set out by the independent expert in the case of Mr Cowling there is a recognised complication rate of damage to the blood vessel although this is extremely rare. As for the complication of infection suffered by Mr Ireland, this is far more common. All forms of surgery are associated with post-operative infection and although all appropriate steps were taken to try to deal with the infection in this particular case there is no doubt that the patient's pre-existing co-morbidity and his challenging behaviour made treatment very difficult and in the end contributed to his death.

In conclusion, from the Trust's review it is felt that the Trust has in place appropriate arrangements to deal with post-operative complications of the nature experienced. Whilst no further specific actions have been identified, this will be kept under review.

I hope that you are satisfied that the Trust has carried out a full review into the deaths of these three patients and that we have managed to allay any concerns following the Inquests. However, if there are any issues which you still require addressing then please do not hesitate to contact me.

Yours sincerely

Mrs Karen Jackson
Chief Executive