

Western Australian Audit of Surgical Mortality

**WAASM**

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*a selection of*

***Case Note Reviews***



## Western Australian Audit of Surgical Mortality Case Note Reviews

All WAASM surgical forms are scrutinised by a first-line assessor. When there is an educational point to be highlighted or when the standard of care falls seriously short of the optimal, then a second-line case note review is sought. A consultant in a different hospital and who has a special interest in the nature of the case is selected. This second-line interpretation is based on the comments by the surgeon completing the WAASM surgical form and case notes and is therefore sometimes limited by the quality of the note keeping.

These reports are anonymised by removing all reference to names, hospitals and dates.

Further correspondence regarding individual cases is not possible but we would gratefully receive any discussion regarding general points made in these assessments should another consultant believe there to be an interesting area of debate or controversy. Such correspondence should be sent to the WAASM office.

**The opinions expressed are not necessarily the view of the Management Committee of WAASM**

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stump leak; collections were evacuated, drains placed and venting and feeding tubes placed in the stomach, duodenal loop and jejunum. Post-operatively in ICU, the patient remained septic and developed progressive renal and hepatic failure. Another laparotomy was performed 7 days later (operative record missing) where two ischaemic bowel segments adjacent to the feeding jejunostomy, were resected and a fresh jejunostomy fashioned. Two days later bile stained fluid was noted to be draining from the right upper quadrant drain and a fourth laparotomy was performed (operative note again missing). The patient developed progressive multi-organ failure and died 24 days postoperatively.

#### *Comment*

#### Areas for Consideration

1. The absence of the private surgeon's documentation concerning pre-operative work-up, the private operative record, and the third and fourth operative notes makes an accurate appraisal difficult.
2. This patient was at moderately high risk for complications in view of age, obesity and diabetes mellitus. Based on the scant information available, the pathology appeared to be benign (pre-pyloric ulcer, reflux disease). Was surgery really indicated for this lady? Was there a suspicion of malignancy on pre-operative biopsy or did she have a gastric outlet obstruction? In the absence of either of these, a surgical approach, which also added fundoplication, may be hard to justify. If the problem was outlet obstruction due to benign peptic ulcer disease, a gastroenterostomy may have been more appropriate in this patient.
3. The primary cause of sepsis appeared to be a leak from the duodenal stump. In retrospect, was the duodenum suitable for closure or should a tube duodenostomy have been electively performed?

#### Areas for Concern

There appears to have been a delay in diagnosing the intra-abdominal sepsis. The combination of respiratory

### UPPER GASTROINTESTINAL

#### **Delay in diagnosis of duodenal stump leak**

This elderly patient died from multi-organ failure related to intra-abdominal sepsis following gastrectomy and fundoplication. Three areas are considered:

#### *Summary of management:*

This 74-year-old patient presented with an antral gastric ulcer, gastro-oesophageal reflux disease and a hiatus hernia. The patient underwent distal gastrectomy, Roux-en-Y reconstruction and a Nissen fundoplication at a peripheral private hospital. She was transferred to a public institution within 24 hours due to respiratory compromise, attributed to morphine. However, the patient subsequently developed bilateral pulmonary consolidation, a progressive leucocytosis and diffuse abdominal tenderness. Treatment included intravenous Naloxone, respiratory support, diuretics, intravenous antibiotics and thrombo-embolic prophylaxis. The patient was transferred to Coronary Care after developing acute pulmonary oedema. Twelve days post-operatively, the patient's abdominal signs deteriorated and CT scan revealed intra-abdominal and wound collections, with pus on aspiration. Laparotomy revealed a duodenal

complications, rising white cell count to 21,000 by day five and diffuse abdominal tenderness should have alerted the clinicians to this possibility. This criticism should be qualified by the fact that the patient's clinical state appeared to be improving (ie lack of fever or tachycardia). A CT scan was not obtained until the 12<sup>th</sup> post-operative day when the clinical state suddenly deteriorated, and there was fibrinous coating in the abdomen suggesting the perforation had occurred some days earlier. A higher index of suspicion, earlier investigation and laparotomy may have prevented the development of multi-organ failure.

### **Record Keeping**

Constructing this report was hampered by an absence of an operative report for the first operation at the private hospital and the last two laparotomies performed at the public hospital. It would also be useful to have included the documentation of pre-operative assessment, which has not been included in the public hospital notes.

### **Missed diagnosis in Emergency Department**

This elderly male patient was admitted to hospital with a perforated duodenal ulcer. He was initially seen the day before complaining of abdominal pain and distension with a history of previous duodenal ulcer pathology. Supine and erect abdominal films were reported as showing no evidence of perforation and the patient was sent home. He then re-presented to the hospital with persisting symptoms. A chest X-ray did not show any free gas but a subsequent CT demonstrated free fluid and free gas. He was taken to the operating theatre where a 2 cm hole in the duodenum was found and was patched. He had gone into rapid atrial fibrillation and required significant inotropic support and was managed post-operatively in the Coronary Care Unit. A couple of days later his condition deteriorated and investigations suggested a further perforation. He was taken back to the operating theatre where this was confirmed and a partial gastrectomy was performed.

Post-operatively he was managed in the Intensive Care Unit but he developed progressive multi organ failure and died approximately 24 hours post surgery.

### **Comment**

#### **1. Initial Presentation to the A&E Department**

Whilst there are limitations in retrospectively looking through notes, it appears that at initial presentation to the ED there was a delay in diagnosis. This patient had a history of previous peptic ulcer pathology and his signs and symptoms would suggest a perforation even in the absence of free gas. A case could be made for the patient being surgically reviewed at which stage further investigations, such as a gastrografen enema or CT scan may well have been ordered. This could have improved his chances of survival.

#### **2. Choice of First Operative Procedure**

A 2 cm diameter hole in the duodenum is unlikely to be controlled by an omental patch. In this situation a partial gastrectomy (Polya type) with closure of the duodenal stump and/or drainage may have been the better choice. Mitigating circumstances such as

stability of the patient during the procedure may have led to a decision to perform a less extensive procedure. However, subsequent events certainly put this patient at a greater risk ultimately.

## **HEPATOBIILIARY**

### **Multiple complications following hepatic resection**

This elderly male patient had, six months prior to his surgery, undergone a left hemicolectomy for colo-rectal carcinoma. At this time, he was noted to have a solitary metastasis in the right lobe of his liver. Appropriate staging failed to identify any other sites of metastases. He underwent a six-month course of chemotherapy, which reduced the tumour bulk by 40%. He was then referred for consideration of right hepatectomy. It was decided that hepatectomy was appropriate. This man had a history of submassive pulmonary embolism following his colonic resection and a cardiac echocardiogram demonstrated the presence of asymptomatic valvular disease. A right hepatectomy was undertaken. The portal cross-clamping time was approximately 25 minutes and the blood loss 2.5L. Post-operatively he was transferred to ICU and suffered hepatic failure, respiratory failure and subhepatic collection (sepsis) and subsequently he died.

### **Comment**

Resectional surgery for isolated hepatic metastases from colo-rectal cancer is appropriate therapy giving an approximately 35% "cure rate". The patient had evidence of cardiovascular disease and of a previous submassive pulmonary embolism which are relative contraindications to surgery. However, a contrast enhanced CT scan failed to show any evidence of recurrent pulmonary embolism post-operatively and his cardiac disease was not the primary cause of death. The intra-operative clamp time of 25 minutes was appropriate; the anaesthetic records show that the operative volume replacement was adequate.

Post-operatively he developed a sub-diaphragmatic collection. I do not believe that this constitutes a technical failure. Oedema of the bowel was noted post-operatively on two CT scans but had resolved on the third. It is therefore likely that this was due to portal venous clamping at the time of surgery. It is not clear whether venous drainage was achieved via both middle and left hepatic veins (the middle hepatic vein can be damaged during right hepatectomy). Maintaining a low CVP intra-operatively is important in liver resections (it reduces blood loss). I cannot judge from the notes whether or not this was done.

The resection carried out was a standard one involving a right hepatectomy leaving segments I-IV. In the absence of post-operative complications this would have been an adequate liver volume, but where complications supervene hepatic failure can develop.

In deciding whether or not surgery was appropriate or not in this patient, one must take into account factors which cannot be assessed from the notes, such as the patient's desire to undergo surgery. I would consider him a high-risk candidate and likely to suffer an adverse outcome. I would probably not have offered resection.

### **Problems in the management of complex gallstone disease**

This octogenarian was referred to the Surgical Outpatients Department with a history of three episodes of painful obstructive jaundice, stones in the gallbladder and dilated ducts shown on ultrasound. He underwent an ERCP, confirming a dilated common bile duct without stones. Gallstones were noted. No sphincterotomy was performed. On subsequent surgical outpatient review he was advised to undergo laparoscopic cholecystectomy, but in view of his age, he did not wish to proceed further.

Sixteen months later he was admitted with right upper quadrant (RUQ) abdominal pain, jaundice (Bilirubin 69), white cell count of 19.2, Alkaline Phosphatase 819, ALT 354, an ultrasound showing a thick-walled gallbladder with fluid around it, consistent with acute cholecystitis and the possibility of gas within the gallbladder wall. He was assessed by an experienced surgical registrar, whose conclusion was that he needed urgent ERCP, followed by laparoscopic cholecystectomy. He was commenced on intravenous fluids and antibiotics. Vitamin K was given.

He underwent urgent ERCP the next morning, confirming a grossly dilated common bile duct, without stones within the duct. A small sphincterotomy was performed. The CT scan performed following his ERCP showed a grossly abnormal gallbladder with ill definition of the gallbladder wall, consistent with acute inflammatory change.

In the early afternoon, following his ERCP, the Gastroenterology registrar spoke to the surgical team, suggesting relatively urgent cholecystectomy. Soon after that the patient was assessed by a different surgical registrar, whose conclusion was "No reason to do laparoscopic cholecystectomy now".

That evening it is documented in the hospital notes, that the patient was coherent and understood the results of investigations and had concluded that he now needed the operation.

Over the next few days he is noted to continue to have RUQ pain, but no evidence of either pneumonia or pulmonary oedema. On the surgical ward round on the fifth day post admission, there is the first documented evidence of him having been seen by the consultant, and a plan was made to book him for cholecystectomy in two days time.

On the seventh day post-admission his planned cholecystectomy was cancelled following a chest x-ray showing bilateral pleural effusion, interstitial oedema and features of left heart failure. The antibiotics he had been on were changed, he was given bronchodilators, he was continued on intravenous fluids and the following day a low dose diuretic was commenced orally. On the eighth

day post-admission his temperature was 38.5 degrees, despite his intravenous antibiotics.

On the twelfth day post-admission his condition was substantially worse with marked RUQ abdominal tenderness. A repeat ultrasound showed the features of a necrotic gallbladder with a subphrenic abscess in addition to his right pleural effusion. He was subsequently taken to theatre that evening, despite the anaesthetist's hesitation to proceed because of ongoing pneumonia.

Initial laparoscopy showed dense adhesions in the right upper quadrant and he was converted to an open operation. The subphrenic abscess was drained. The duodenum was adherent to the gallbladder. The gallbladder was dissected free from surrounding adhesions and a retrograde cholecystectomy was performed. No attempt was made to perform an operative cholangiogram. At the end of the procedure a hole was noted in the anterior wall of the common bile duct and in view of the ductal dilation, the duodenum was further mobilised and a side-to-side choledochoduodenostomy was performed. A drain was inserted and the wounds were closed. Post-operatively he was sent to the Intensive Care Unit with a haemoglobin of 103 after 4 units of blood.

Three hours later he became profoundly hypotensive, proceeding to a cardiac arrest from ventricular fibrillation from which he was resuscitated, and from there returned urgently to theatre for a re-laparotomy for postoperative bleeding (haemoglobin 38). An active bleeding spot was underrun with a 4.0 Prolene suture. A large drain was inserted and the abdomen was closed. He was returned to the Intensive Care Unit.

On the fifth post-operative day bile was noted to be leaking via the wound and the following day through the bore drains. At this stage he had renal failure with Creatinine of 420.

On the following day he had generalised abdominal tenderness with guarding and was noted to be leaking about 100ml per hour of bile stained fluid into the bore drain.

On the seventh post-operative day (three days after the bile leak was noted) there is documented evidence of the surgical registrar reviewing the patient about the leak of more than two litres of bile stained fluid over 24 hours. The conclusion was that the patient was not suitable for laparotomy in view of his general condition. He was transferred from the Intensive Care Unit to the ward that day. His son was notified about his poor prognosis and likely outcome.

By the tenth post-operative day there was leakage of 1900ml per day of bile stained fluid. CT scan showed no drainable collection. On the thirteenth post-operative day a decision was made to proceed to ERCP with the intention of placing a biliary stent. Anaesthetic assessment was arranged and an anaesthetist was booked for the procedure.

On the fourteenth post-operative day the patient underwent ERCP with an anaesthetist and a registrar in attendance. The request form for the ERCP did not mention that the patient had had a choledochoduodenostomy. At ERCP the patient was noted to have an oedematous junction of the first and

second parts of duodenum. The findings were thus not interpreted correctly. The papilla was cannulated and the distal common bile duct was normal, with the peritoneal cavity filling via a large defect in the common bile duct from which some contrast passed into his intrahepatic ducts. The endoscopists were unable to pass a guide wire through the cavity into the intrahepatic ducts, and thus not able to stent the patient.

It was noted on removal of the endoscope that bile and bowel fluid were present in the larynx and that he dropped his oxygen saturation when being turned supine to 50 percent. A nasal pharyngeal airway was introduced with restoration of his oxygen saturation to 97 percent and he was taken from the ERCP room to the recovery area at 1230hrs.

In the recovery area his initial oxygen saturation at 1245hrs was 92 percent, dropping rapidly to 76 percent by 1300hrs. The anaesthetist ended up incubating him at 1315hrs, with bowel content noted in the larynx. He was difficult to ventilate with high ventilatory pressures for which he was given bronchodilators, with a temporary improvement in his oxygen saturation, before he rapidly deteriorated at 1350hrs despite ventilation and 99 percent oxygen saturation. He became profoundly hypotensive and bradycardic developing asystole, from which he could not be resuscitated.

### **Comment**

This case well illustrates how often the lessons of the past have been forgotten. In a collective review of prospective controlled trials Motsom and Wey in 1982, found that with early surgery for cholecystitis there were significantly less deaths than compared with interval surgery. Almost 20 percent of patients with acute cholecystitis failed an attempt at proceeding to interval surgery. By 1991 there were already published papers advocating early laparoscopic treatment for acute cholecystitis. Thus the decision by the second surgical registrar to not to proceed to surgery, be it laparoscopic or open, was inappropriate. The patient had a thick walled gallbladder with evidence of inflammatory exudate on ultrasound, with a corresponding CT scan showing a grossly abnormal gallbladder in an elderly man with a white cell count of 19.2. Early operation would have avoided the complication of a perforated gallbladder with a subphrenic abscess and the patient's corresponding sepsis, pleural effusions and deterioration in medical condition.

The patient's operation was cancelled by the anaesthetist based upon a deterioration in his physical condition. There is no documented evidence of any aggressive introduction of therapy in order to maximise the patient's condition or impending urgent surgery and therefore little evidence of consultant surgeon, consultant anaesthetist or consultant physician input until his condition became substantially worse and he was taken to theatre despite the anaesthetist's concerns about his medical condition, a further five days later.

The emergency surgery was performed by a consultant surgeon with expert assistance. It is not possible to determine the cause of the common bile duct injury, which could have been caused by blunt dissection or even by traction. Anastomosing the dilated common bile duct to the adjacent duodenum as a

choledochoduodenostomy was an appropriate means to retrieve this situation.

It is commendable that the patient was successfully resuscitated from his cardiac arrest following major post-operative bleeding dropping his haemoglobin from 103 to 38 and that his prompt return to theatre was successful in controlling the bleeding. However, it is likely that the emergency of the situation resulted in traction on the choledochoduodenostomy and disrupted the anastomosis.

When the bile leak became apparent there was significant delay in the investigation and treatment of such, thus the possibility of an anastomotic leak should have been considered and investigated.

The patient's final cause of death was a preventable aspiration inhalation with the patient being nursed supine, despite being unrousable following sedation with documented evidence of bile stained fluid within his mouth.

## **COLORECTAL**

### **Delayed access to theatre in patient with lower bowel obstruction**

A 73-year-old woman was admitted at 19.30 hours with a three-week history of vomiting. On examination she was dehydrated, tachycardic and had mild abdominal distention. There was some associated abdominal tenderness, but no rebound or guarding. Investigations including an abdominal x-ray, which suggested large bowel obstruction, were carried out. Blood results included Hb 87, sodium 128 and urea 22.3.

The consultant saw the patient the following morning and a gastrografen enema was ordered. This was undertaken later in the day (time not specified). A carcinoma of the hepatic flexure was confirmed.

Surgery was scheduled later that day. However, the operation did not commence until 02.40 the following morning (30 hours after admission). At surgery a stenosing carcinoma of the hepatic flexure infiltrating the gall bladder was found. There was a large secondary in the right lobe of the liver. The consultant undertook a right hemicolectomy with *en-bloc* excision of the gall bladder.

Post-operatively the patient was nursed in the High Dependency Unit for five days. Inotropic support was required and because of the low pre-operative albumin (25) TPN was commenced. Although her cardiovascular status was initially precarious she was progressively weaned off her inotropic support. On the third post-operative day there was some concern that there was a sepsis related problem. A CT scan revealed a small collection of fluid in the right iliac fossa but aspiration of the fluid failed to reveal any bacteria.

Following transfer to the ward there were progressive problems with a chest infection and two days later a left pleural effusion was drained. She remained pyrexial

with a raised white cell count but no focus for the infection was found.

On the eighth post-operative day her Hb was 74 and the white cell count had climbed to 23.2. By this stage she was unresponsive and after discussion with her family a decision was made not to actively resuscitate her further. Some six hours later she died.

### *Comment*

This elderly, frail patient underwent an emergency colectomy but was unable to tolerate this significant surgical intervention. Although there were no adverse events that contributed to her death there are some areas where her care could have been different.

1. The clinical diagnosis on admission was large bowel obstruction but it was 30 hours before the patient went to theatre, and that was at 02.40 hours. This suggests a theatre organisational problem that is not satisfactory.
2. The yellow, WAASM form (completed by the consultant) records that DVT prophylaxis was administered. However, review of the drug chart shows the first dose of heparin (2,500 units) was administered 42 hours after the operation. Two further doses were administered during the next 36 hrs and it was then discontinued. This is not correct prophylaxis.
3. The interval between surgery and death was eight days. During this time the patient was critically ill yet there is only one entry in the notes documenting review by the consultant. That entry was six hours before death.

## **ORTHOPAEDIC**

### **Unexplained sudden death**

An eighty-seven year old female, who was a hostel resident presented to the Emergency Department with a three-week history of decreasing mobility. The medical case notes show that the staff of the Emergency Department assessed her promptly and thoroughly. It was also noted that she had a significant attendance record at the same hospital with extensive co-morbidity. The admission diagnosis was a fractured proximal femoral neck and that day she underwent an uneventful Thompson's hemiarthroplasty, (which took less than two hours).

The subsequent post-operative progress was relatively slow and she was seen on a regular basis by both the orthopaedic and rehabilitation registrars. Her diabetes showed relatively poor control with a tendency to increased blood sugars. She also had signs of deteriorating renal function on the basis of previously established chronic renal failure.

Her DVT prophylaxis consisted of Aspirin, which was administered from the day of admission and continued

thereafter. Because of her deteriorating state she was investigated for a myocardial infarct but no definitive evidence of this was noted. Five days post-operatively she developed shortness of breath and was noted to have oxygen desaturation and later was found to be unrousable and was pronounced dead.

### *Comment*

The overall quality of care throughout her admission seemed appropriate. There was regular involvement by both the orthopaedic and the rehabilitation team. The record keeping was good. I could not fault the treatment in any way. The DVT prophylaxis seemed to me appropriate. The evidence currently is that DVT prophylaxis either in the form of Heparin or Aspirin has some protective impact from thrombo-embolic disease but this is incomplete. There is significant morbidity associated with Heparin especially in the peri-operative phase. There is no clear evidence that Heparin is better than Aspirin and I accept the decision of the team to use Aspirin as the major form of prophylaxis.

The only minor criticism that I have of the whole process was that the discharge summary was not ideal. It did not adequately reflect the post-operative course and the general practitioner was left with a rather stark picture. Furthermore, the identified cause of death was speculative. I do not believe there is clear evidence that the cause of death in this case was ischaemic heart disease. I think it is possible that pulmonary embolus was as or more likely. However in view of this woman's age, presenting problem and co-morbidity I do not believe that her outcome would have been improved by any other form of treatment. I do not believe there is any failure of care in this case.

## **NEUROLOGICAL**

### **Death after surgery for subarachnoid haemorrhage**

A 76-year old female was admitted with the diagnosis of subarachnoid haemorrhage. Her status was high grade GCS, with minimal loss and classed as Grade I (low-risk) SAH. There was underlying cerebrovascular disease and treated hypertension. Restricted angiography revealed three aneurysms. The bleeding aneurysm was on the right at the bifurcation of the carotid artery. There were two non-bleeding aneurysms on the left side. Note is made of the patient's status worsening to Grade III at or after the angiogram. The decision on management was to advise operative clipping of the right carotid aneurysm. This was done, the finding being a complicated aneurysm with significant branches involved in the complex structure not able to be dissected free. The medial cerebral artery was already diseased and partly aneurysmal. The first clip was inadequate to control the aneurysm and a second and third applied with satisfactory position but occluding a vessel. Closure was non eventful, but the patient on awakening from anaesthesia was hemiplegic with left paralysis.

Routine care followed with some improvement noted in the hemiplegia over the ensuing days, but with periods of non-responsiveness indicating cerebral spasm for which appropriate treatment was given. An external ventricular drain helped control ICP and remained blood stained. A follow up angiogram was performed seven days post op, this time complete and it was noted there remained a neck to the treated aneurysm – that there was present atheromatous disease and mild spasm. The frontopolar artery was occluded, probably accounting in part for the patient's hemiplegia (and CT signs of stroke). Regular total care continued with the conscious state fluctuating with decided deterioration.

Twelve days postoperatively, the external drain previously inserted had been removed but because of hydrocephalus and worsening state was re-inserted. The patient was now complicated by a UTI and ventricular infection, but responded to the appropriate antibiotics. Further improvement was noted in conscious state and the hemiplegia but gross deterioration occurred 17 days post op, with diagnosis (ventricular blood and positive CT) of recurrent haemorrhage. The patient was returned to the ICU and managed by all possible (non surgical) intervention but without any useful recovery. Discussion with the family was recorded with the ultimate decision to provide appropriate care for her condition. Five days later her spontaneous breathing ceased and appropriate note made of "may (the patient) rest in peace".

#### *Comment*

The prognosis for an elderly person with hypertension and cerebrovascular disease suffering subarachnoid haemorrhage is very guarded but poor outcomes from any treatment are not unexpected. It was of interest to note the first angiogram attempt was technically flawed in not being able to demonstrate the posterior circulation but on the second occasion the full circulation was displayed. This had no bearing on the outcome. Surgery was complicated by the apparent necessity of taking a major vessel, understandable in the circumstances, but which resulted in hemiparesis, which complicated any recovery. With increasing co-morbidities it was not surprising that infection intervened and ultimately further brain haemorrhage, cause not certain. I would believe the treatment given was always appropriate and I could not determine any pathway different other than not to have offered surgery at the outset.

## UROLOGICAL

### **Sepsis from indwelling urinary catheter**

This elderly demented patient with a history of ischaemic heart disease and impaired glucose tolerance had been admitted two weeks prior to his death with acute on chronic urinary retention.

At that time he was dehydrated, but after catheterisation and fluid replacement, he improved and was discharged to a nursing home with the intention of bringing him back into hospital for a cystoscopy and possible TURP at a later date.

He was readmitted when his catheter drainage became negligible and he developed a tender swelling in his left inguinal region. The initial diagnosis of an incarcerated left inguinal hernia was appropriate and the alternative diagnosis of an infarcted undescended left testis was also contemplated. He was treated appropriately with intravenous antibiotics before and after the surgery. Subsequent pathological examination revealed the problem to be acute epididymo-orchitis with pustular formation.

His postoperative course was complicated by hypotension both in the recovery room and in the ward over the next few days. During this time he was assessed and treated appropriately, although blood cultures were not taken.

In summary, this case illustrates the dangers of an indwelling catheter causing lower genitourinary sepsis. Given his presenting problem, I think his hospital treatment was appropriate and there were no adverse incidents which contributed to his death.

## MISCELLANEOUS

### **A tumour that may have been better approached by an alternative route**

A 65-year old patient with a previous history of prostate cancer and coronary artery disease was admitted to undergo for the third time surgery for a recurrent benign tumour. The surgery was performed by a Post Fellowship Registrar with senior assistance. The tumour had been previously resected 31 months and 9 months prior to the current surgery. These procedures show incomplete clearance of the tumour. His prostate cancer was under control, and he was last seen in the Urology Clinic five years prior to the current admission.

Coronary artery disease in this patient had been treated with stenting two years prior to the surgery.

The tumour was exposed via a direct approach. Bleeding occurred during the operation and appears not to have been controlled. The operation notes give no further detail of the procedure.

The patient was taken to the Recovery Room where significant bleeding was noted. He was returned to the Operating Theatre at 14:05 to control haemorrhage, but assistance was not requested until 16:30. By the time surgical assistance arrived, the patient had already sustained a cardiac arrest. He was transfused with 22 units of blood, 16 units FFP, and 8 units of cryoprecipitates as well as other fluids. The patient was coagulopathic, haemostasis was not achieved and the patient died on the table.

#### *Comment*

This was the third operation to remove a benign tumour from an area of difficult access. This was in a high-risk patient, with coronary artery disease. There was no evidence in the notes that the antiplatelet medications had been ceased prior to the surgery. The patient's coronary

artery disease also predisposed him to cardiac problems should a major intra-operative bleed occur.

The approach used was not the usual approach. It gives poor exposure and would significantly limit access if complications occurred.

There is no evidence in the notes that the operation was discussed with an experienced senior colleague, nor that one was available if complications occurred. There was no evidence for any request for advice or assistance during the procedure, and there was a two-hour delay from the patient being returned from the Recovery Room to the Operating Theatre before assistance was requested.

The approach taken is known to be inappropriate for these tumours and not at all appropriate for large, difficult tumours. This was a twice-recurrent tumour, for which there was going to be significant scarring, and the risk of complications was very high. There are better approaches that would have provided better access and exposure.

### ***In summary***

This operation was undertaken by an inexperienced surgeon without adequate supervision who appeared not to have appreciated the difficulties inherent in this case. It was booked as a day-case, the work-up was inadequate, the surgical record is rudimentary and the decision-making processes in this case were faulty.

## **GENERAL INTEREST**

### **AUDITING THE AUDIT**

*The case review immediately below was submitted by a second-line assessor. The patient's consultant felt the report was unduly critical. The case notes were sent to another second-line assessor who was unaware of the first review. The second report follows the first.*

### **Underlying problem of recurrent laryngeal nerve injury**

A 90-year-old woman with a six-month history of an enlarging thyroid mass presented with dysphagia to the emergency department less than a week prior to her appointment for elective surgical admission for right hemithyroidectomy. She subsequently underwent a palliative de-bulking procedure, which turned out to be an anaplastic carcinoma of the thyroid. On the second post-operative day she developed respiratory problems. Her saturations dropped, and the patient had difficulty protecting her airway. Aspiration pneumonia was a possibility and she was commenced on antibiotics. Her respiratory function and the ability to control her airway continued to deteriorate, and she died 12 days postoperatively.

### ***Comment***

This patient was reviewed by the speech pathologist about five days post surgery. It was suggested that perhaps she had had a recurrent laryngeal nerve injury in

relationship to her surgery. An ENT opinion was asked for but there is no record of this request being met. The prognosis for this 90-year-old woman with an anaplastic carcinoma was poor. The question is, did the surgery hasten her demise? It would seem that an injury to her laryngeal nerve may have compromised her airway, and predisposed her to the sequelae.

It may be argued that if, at the initial operation, it was recognised that this woman did have an unresectable anaplastic tumour, causing significant problems with her swallowing, then perhaps a tracheostomy may have been a more appropriate interim measure.

### **Elderly patient with anaplastic thyroid carcinoma who died after palliative surgery**

This frail 90-year-old patient saw the consultant in his rooms with a longstanding goitre that had become symptomatic recently, with a history of recent growth. Fine needle aspiration had been done 8 months previously, reportedly benign.

Vocal cord assessment was reported as normal, but the patient was admitted the following day, as an emergency, with increasing pain in the throat and increasing difficulty swallowing. Three days later a repeat fine needle aspiration was done, but there is no report or written note of the result.

At surgery, frozen section showed anaplastic carcinoma and the tumour was debulked. The consultant was the primary surgeon, but no mention is made in the operative notes about the recurrent laryngeal nerve or the parathyroid glands.

On the second postoperative night the patient developed fever and hypoxia, consistent with aspiration pneumonia. There was also note made of a change in voice and difficulty swallowing. No postoperative vocal cord assessment was made. Despite IV antibiotics the patient's condition deteriorated over the following week. Death occurred 12 days postoperatively.

### ***Comment***

This is a typical presentation of anaplastic thyroid carcinoma: long standing goitre with recent change/rapid growth, pain and other local symptoms and rapid demise. Although there is a short life expectancy with this condition, death was accelerated by postoperative respiratory complications, that appear to be attributable directly to postoperative recurrent laryngeal nerve palsy. It is not possible to say whether carcinoma was diagnosed preoperatively as the repeat fine needle aspiration result is not recorded in the notes. If so then a strong case could have been made for non-surgical management in this case.





WAASM (07/03/02)