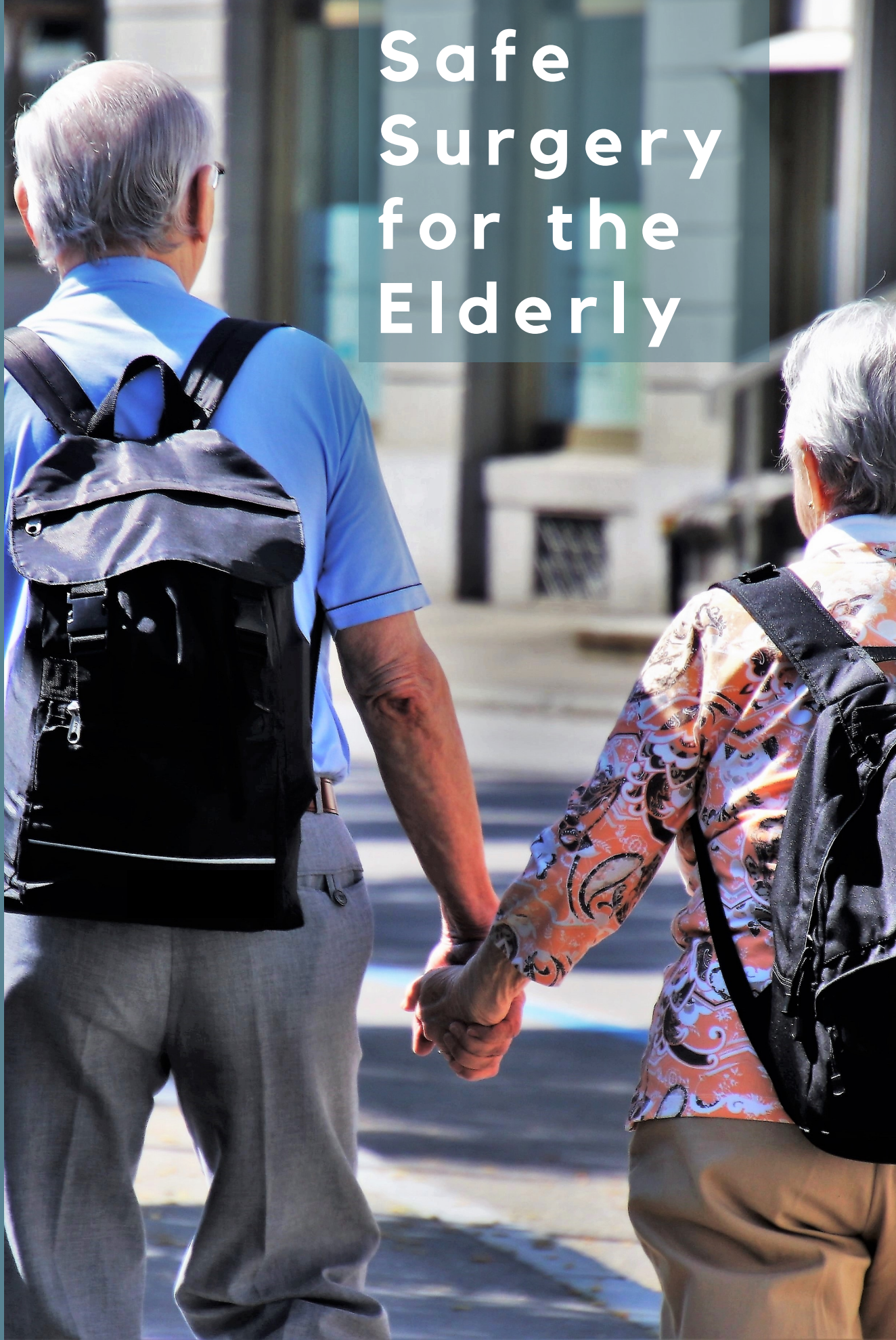


Safe Surgery for the Elderly



A CHASM PUBLICATION

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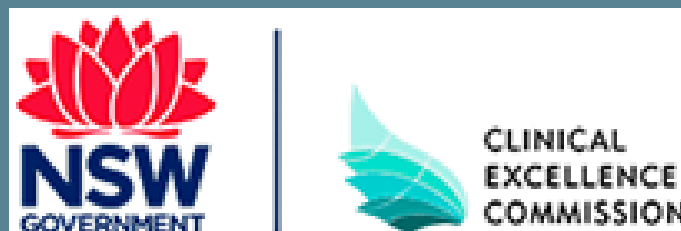
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INTRODUCTION

by Dr Ming Loh

This collection of cases is a stark reflection of the challenges seen in surgical practice across the state. The themes reviewed in CHASM each year do not change and it is clear that we all struggle to care for the most vulnerable cohort in our community – the elderly.

The shortfalls and opportunities are presented here as an overview and are reflective of the cases reviewed by CHASM each year. Many of the surgical disciplines have representation but this is not what matters.

The elderly patient will always be their most vulnerable at the point of surgery. Surgical technique and expertise has reached a point such that the failure in patient care now resides more frequently in the decision to proceed to surgery – not the surgical management and minutiae per se. This is the frontier where there is opportunity for progress.

The assessment of appropriateness for surgery should be seen as routine – no different to booking theatres or organizing the anaesthetist. There is widespread recognition of the need to identify deteriorating patients and hospitals should have proficient Clinical Emergency Response Systems in place. These will require clinician sponsorship to be successful.

Surgeons are uniquely qualified to lead multidisciplinary teams. These are ideal to provide counsel to both surgeons and patient families. Shared Decision Making and Advanced Care Directives are now a standard part of the surgical lexicon and surgeons across the state are leading their services in incorporating these paradigms into practice.

The point of these reviews is to show and allow for recognition of patterns. We, the CHASM Committee, hope that clinicians will find inspiration in these cases to reflect on their own services and thus lead them further towards clinical excellence.

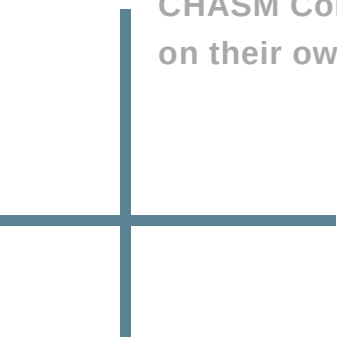


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Elective Surgery

CASE EXAMPLE 1 – NEUROSURGERY

Elective Admission to Hospital A, later transferred to Hospital B

Length of Admission: 29 days

Admitted to Hospital A for 14 days and transferred to Hospital B for a further 15 days.

Age and gender: A female patient in her early 80s

ASA: 3 with co-morbidities listed as hypertension and sleep apnoea

Diagnosis: Olfactory groove meningioma

Operative Procedure: Stereotactic craniotomy for olfactory groove meningioma

Date of Operation: Day of admission

Cause of Death: Post-operative cerebral infarct

Surgeon's Synopsis

The patient was admitted to Hospital A for an elective craniotomy for resection of olfactory groove meningioma. It was a difficult resection with blood loss approximately 2L, which was difficult to control intraoperatively, thought likely left anterior cerebral artery (ACA) branch avulsed, but haemostasis was achieved.

In recovery the patient suffered a seizure which was terminated with Midazolam. The patient was transferred from recovery to CT for post-operative imaging, intubated and admitted to ICU. Serial CT demonstrated a small haemorrhage and bilateral ACA infarct. The patient was weaned from sedation in ICU with poor neurological response. They were commenced on Kepra for recurrent seizure activity.

Independent Case Assessment

Elective admission for stereotactic bifrontal craniotomy and evacuation of large olfactory groove meningioma. Surgery performed by a consultant and service registrar.

During procedure, branch of left ACA feeding the tumour avulsed from parent artery leading to significant bleeding with 2L blood loss, only controlled by occlusion of left ACA.

Patient had a seizure in recovery.

Post-operative CT imaging showed left ACA infarct and bilateral frontal watershed infarct.

Expected poor neurological recovery resulting in transfer for palliation on Day 14 post-op.

Conclusion

An unfortunate case of a known complication occurring despite good surgical practice.

CASE EXAMPLE 2 – GENERAL SURGERY

Elective Hospital Admission

Length of Admission: 7 days

Age and gender: A male patient in his early 80s

ASA: 4 with co-morbidities listed as cardiovascular, obesity and age

Diagnosis: Gastric adenocarcinoma

Operative procedure: Laparoscopic total gastrectomy and roux en Y reconstruction

Date of Operation: Day of admission

Cause of death: Fatal Pulmonary Embolism, anastomotic leak, and sepsis

Surgeon's Synopsis

The patient with recent pulmonary embolism (PE), atrial fibrillation (AF) causing transient ischaemic attack (TIA) and left ventricular failure. Anticoagulated (full DVT/PE prophylaxis peri-operatively) and then had major upper gastrointestinal (GI) bleed. He was found to have a tumour below the gastro oesophageal junction (GOJ). He was not considered suitable for neo-adjuvant therapy and had up front laparoscopic total gastrectomy.

Day 4 post-op the patient had dirty fluid in drain. Antibiotics were started. Patient was not septic at this stage. CT and contrast swallow on Day 5 post-op, confirmed a leak, reasonably well controlled by the drain. Day 6 post-op he went to theatre for gastroscopy and insertion of NG tube +/- further laparoscopic drainage of anastomotic leak. The patient arrested on induction of General Anaesthesia. Transoesophageal echo revealed no filling of Left Ventricle consistent with massive Pulmonary Embolism. Resuscitation failed.

Independent Case Assessment

Background: AF, recent PE (12 months prior) and TIA treated with Apixaban, obesity, right heart failure, poor exercise tolerance.

Patient suffered a massive upper GI bleed caused by a proximal gastric cancer.

Apixaban ceased when seen to book surgery, 12 days prior to admission. Workup with PET scan, anaesthetic and cardiology consult, seen in pre-op clinic.

Operation on day of admission - routine laparoscopic total gastrectomy with Roux-en-Y reconstruction. Negative leak test.

Day 4 post-op: Recovery smooth until drain showed haemopurulent fluid.

The patient's WCC (white cell count) increased Day 5 post-op. Temperature swinging. Discussed with consultant – "likely anastomotic leak well controlled with the drain".

The following day, CT and gastrografin™ swallow confirmed the leak. At General Anaesthesia for laparoscopic drainage, patient arrested on table and couldn't be resuscitated.

Conclusion

Probable cause of death a PE, although unknown if a post-mortem examination was performed. Clexane 40 mg bd given since day of admission.

CASE EXAMPLE 3 – VASCULAR SURGERY

Elective Hospital Admission

Length of Admission: 9 days

Age and gender: A male patient in his late 80s

ASA: 5 with co-morbidity listed as cardiovascular

Diagnosis: Rutherford 6 PAD (Peripheral artery disease); forefoot gangrene / Extensive arterial occlusive disease

Operative Procedure: Profunda to tibial bypass graft using ipsilateral great saphenous vein

Date of Operation: Day 2 of admission

Cause of death: Heart Failure (ischaemic)

Surgeon's Synopsis

The patient had a history of atrial fibrillation (AF), airways disease, and a previous stroke with expressive dysphasia. He mobilised at home, with a forearm support frame and assistance from his wife, and was found at pre-admission to have a BMI of 16.9. He was felt to be at high risk for an open procedure.

He had a large myocardial infarct Day 2 post-op following Profunda to tibial bypass graft using ipsilateral great saphenous vein.

This resulted in global myocardial impairment and progressive heart the renal failure.

Due to his age, family wishes and comorbidities, he was palliated.

Independent Case Assessment

This patient with a long history of peripheral vascular disease and multiple interventions to the right leg, presented with rest pain and forefoot gangrene, having failed a recent endovascular attempt to rescue a threatened stented segment.

An elective distal bypass was performed and was complicated by a myocardial infarct on Day 2 post-op. He was palliated and died on post-op Day 7.

The notes available state that prior to his endovascular intervention, he was "not ready" to have an amputation, so the issue of palliation versus amputation had been broached, but it is not clear that this was discussed with him again prior to his bypass.

There is a feeling in some quarters that amputation represents a failure: There is also no doubt that we have a great deal more in the way of options to deal with severe critical limb ischaemia than previously. However, in some cases an amputation may represent a better option to resolve pain. Obviously, there are still significant risks associated, but in most cases, significantly less than those associated with a bypass.

Conclusion

This is becoming a more common scenario, and obviously we need to respect patient autonomy, but equally, we need to consider what is reasonably achievable in frail, elderly patients.

CASE EXAMPLE 4 – VASCULAR SURGERY

Elective Hospital Admission

Length of Admission: 2 days

Age and gender: A female patient in her early 80s

ASA: 3 with co-morbidities listed as renal, diabetes, cardiovascular and age

Diagnosis: Carotid stenosis

Operative Procedure: Right carotid artery stent and diagnostic angiogram

Date of Operation: Day of admission

Cause of death: Intra-abdominal haemorrhage

Surgeon's Synopsis

The patient presented to hospital for elective right carotid stenting for her asymptomatic >70% carotid stenosis. Her procedure was uncomplicated, receiving 5,000 U heparin intra-operatively. She was loaded with clopidogrel in recovery, in addition to her regular aspirin.

In recovery, she began to suffer neurological variability, which appeared to be blood pressure dependent. A CT angiogram was reviewed by a neuro-interventional radiologist who suggested the distal stent may be stenosed or be lined by platelet aggregates. There was no intra-cerebral embolus. She was commenced on a heparin infusion, and taken to the interventional radiology department, where a cerebral angiogram (performed by the neuro-interventionalist and the vascular surgeon) demonstrated a widely patent stent, but likely platelet aggregation to stent. She received a further 250 mg of IV aspirin, and 10 mg of Abciximab, as per the neuro-interventionalist. Heparin infusion was continued. Groin access was closed with an Angio-seal™, and while there was some ooze, this settled with pressure.

At 21:30 she was admitted to ICU for monitoring and was noted to have high inotrope requirements with labile blood pressure. Haemoglobin on arrival was 80 (94 in recovery at 19:00), so 3 units of packed cells were crossmatched. Abdomen was non-distended, soft, and non-tender.

At 23:30 the patient was found to be unresponsive, so CPR was commenced, and a massive transfusion protocol activated. She was noted to have rhythms of pulseless electrical activity, then ventricular fibrillation. A general surgical consult was sought for possible intra-abdominal haemorrhage. However, CPR was ceased after 25 minutes due to asystolic arrest.

Independent Case Assessment

The patient had a rather long list of co-morbidities, not the least of which was congestive cardiac failure (CCF) and LV thrombus in the past, with ischaemic cardiomyopathy. Additionally, there was Mitral and Tricuspid valve regurgitation and a CABG in 2016, as well as diabetes; hypertension; hypercholesterolemia; and possibly some mild chronic renal failure (CRF). Nevertheless, she was independently mobile.

The right carotid bulb stenosis, that was probably diagnosed on pre-operative carotid duplex ultrasound, was severe (>80%) but asymptomatic. I couldn't find reference to pre-operative intracranial imaging, such as CTA or MRA, to define the cerebral vascular anatomy.

It is noteworthy that there was a hitherto unsuspected supraclinoid right internal carotid artery (ICA) stenosis, which may have had a bearing on the subsequent events.

There is some concern in the literature regarding poorer results in terms of stroke, heart attack and death from carotid artery stenting (CAS) compared to carotid thromboendarterectomy (CTEA) in octogenarians, although this is not a universal view.

The team at the Teaching Hospital are clearly accomplished in the technical performance of CAS. It would seem, however, that the post-operative stroke was related to the patient's inability to maintain a satisfactory BP in the recovery phase. This led to a (non-embolic) watershed type ischaemic stroke in the right cerebral hemisphere.

The cardiac issues outlined above, gave this patient no reserve capacity to deal with the bout of hypotension that occurred in the recovery ward, and coincided with the dense left hemiparesis. This appears to have led to sluggish flow in the stented ICA made worse by the supraclinoid stenosis. Eventually, there appears to have been actual partial thrombosis on the inner aspect of the stent, which of itself appeared to have been fully deployed.

The patient was on Aspirin at the time of the CAS and was given a loading dose of Plavix in recovery. Of course, she may or may not have been compliant with the Aspirin pre-operatively. I couldn't find reference to heparin, but I assume this was given.

The finding of intraluminal thrombus (or platelet aggregation) led to the commencement of anticoagulation, along with ReoPro®, a platelet inhibitor. The patient then had a massive retroperitoneal haemorrhage, which led to her death.

Conclusion

I think this case illustrates the notion that many elderly patients exist in a rather precarious state, where the slightest disturbance of the status quo leads to rapid decompensation due to lack of cardiac, or other system reserves.

I do agree with the first line assessor that the co-morbidities should have given pause for thought in doing anything at all. Moreover, while we all know the ACAS (Asymptomatic Carotid Atherosclerosis Study) trial results, it is quite likely this patient would have remained asymptomatic on Aspirin alone, particularly if it was a fibrotic calcified plaque on ultrasound.

I think it was an omission not to have done a CT Cerebral Angiogram pre-operatively. This aids in the planning of such procedures and eliminates surprises - such as in this case; the supraclinoid ICA stenosis.

While anticoagulation and ReoPro® would be acceptable in a younger patient, it obviously proved to be too heavy handed in this case. However, one can understand the desperation of the situation and the eagerness to try to reverse the dense hemiparesis. Had the anticoagulation not been so aggressive, she may possibly have survived with some degree of hemiparesis. So, I am also in agreement with the first line assessor in this regard.

Recommendation

While this case doesn't warrant a root cause analysis (RCA), it would be instructive for all concerned to make it the focus of a clinical-pathological Grand Rounds, or such like. There are many lessons here that would provide a fruitful source for detailed discussion.

Emergency Surgery

CASE EXAMPLE 5 – GENERAL SURGERY

Emergency Hospital Admission

Length of Admission: 27 days

Age and gender: A male patient in his late 80s

ASA not provided. Co-morbidities listed as respiratory and age

Diagnosis: Ischaemic large bowel secondary to pseudo-obstruction

Operative Procedure: Laparotomy and subtotal colectomy

Date of Operation: Day 2 of admission

Cause of death: Respiratory failure

Surgeon's Synopsis

The patient had acute presentation to Emergency with an ischaemic large bowel secondary to pseudo-obstruction. He was ventilator dependent after the procedure (laparotomy and subtotal colectomy) and could not be weaned off the ventilator despite multiple attempts over a period of one month. Eventually the decision was made to palliate him.

Independent Case Assessment

The assessor had the following concerns: Patient selection for the operation. How was the patient selected for the procedure and was the procedure appropriate given age and co-morbid conditions?

Upon review of the medical record, the patient seemed well assessed, and management pre-operatively and post operatively was good. No records were provided regarding the consent process, but this appears to have been appropriate.

Some hours delay in getting to theatre before undergoing a laparotomy and subtotal colectomy. There are no areas of concern.

Conclusion

A very high-risk laparotomy (when non-operative mortality would have been 100%), with no alternative. The multiple comorbidities, respiratory, and general condition of the patient was the reason for poor outcome.

CASE EXAMPLE 6 – GENERAL SURGERY

Emergency Hospital Admission

Length of Admission: 32 days

Age and gender: A female patient in her early 80s

ASA: 5 with multiple co-morbidities including respiratory, renal, hepatic, cardiovascular, obesity and scleroderma

Diagnosis: Recurrent rectal prolapse / Small bowel obstruction

Operative Procedure: Laparotomy, division of adhesions

Date of Operation: Day 2 of admission and Day 26 of admission

Cause of death: Multi-organ failure

Surgeon's Synopsis

The patient had previous Hartmann's resection for faecal incontinence due to scleroderma. Rectal stump prolapse treated by Delorme's procedure under assisted local anaesthesia previously. Unfortunately, recurred 5 months later, unable to be reduced. She underwent perineal proctectomy on Day 2 of admission under assisted local anaesthetic. ICU admission post-op. The patient recovered well then developed small bowel obstruction which would not resolve.

After long discussion with patient and family, underwent laparotomy and division of adhesions on Day 26 of admission. Again, nursed in ICU. Developed respiratory, cardiac, and renal failure from which she did not recover.

Independent Case Assessment

Addressing the first line assessor comments:

1. Perineal proctectomy - Appropriate given expertise of surgeon and unit.
2. Delay in recognition of small bowel obstruction (SBO) and surgery:

The small bowel obstruction was recognised promptly at CT Day 6 – unequivocal. Surgery did not occur for two and a half weeks. The initial plan to “ride it out” with total parenteral nutrition (TPN) was sensible given intercurrent illness and the bleeding challenges of the first operation. This elderly woman was really frail, and had significant cardiac, renal, and respiratory and immunological problems.

There may have been ambivalence from the patient and family regarding further surgery and there is a well-documented theme of reality throughout the chart.

Conclusion

Ultimately the surgeons ‘hand was forced’ to ‘do something’ with the inevitable and anticipated demise. I do not see a clear learning point. It is surprising that this woman did as well as she did for this length of time. The surgeon could be commended for taking the case on.

Reflection of Operating Surgeon: Perhaps a Thiersch wire could have been considered for her recurrent prolapse, but this would not have avoided the small bowel obstruction, which was due to an internal hernia and not the perineal procedure.

CASE EXAMPLE 7 – CARDIOTHORACIC SURGERY

Emergency Hospital Admission

Length of Admission: 6 days

Age and gender: A male patient in his mid-80s

ASA: 5 with co-morbidities listed as cardiovascular, renal and age

Diagnosis: Pericardial tamponade / Dressler syndrome - pericardial effusion

Operative Procedure: Video assisted thoracoscopy (VATS) pericardial window

Date of Operation: Day of admission

Cause of death: Cardiogenic shock and renal failure (anuric)

Surgeon's Synopsis

The patient presented with STEMI – angiogram – balloon LAD, 100% occlusion LAD, catheter lab, unable to proceed, no dissection → ICU. Pericardial effusion 800ml drain
Day 5 of admission the patient was transferred to the Coronary Care Unit.

The following day the pericardial drain was removed. MET call. Hypertension tachycardia VATS pericardial window ~ 15:00 hours. Tense pericardial fluid under pressure. Drained with minimal improvement. Patient transferred back to ICU – arrested and passed away.

Independent Case Assessment

This patient was admitted with STEMI. Coronary angiogram showed total occlusion of distal LAD. Multiple attempts at rewiring/ballooning were unsuccessful. Transthoracic echocardiogram (TTE) → reasonable left ventricle function pericardial effusions but no tamponade. CT angiogram showed no dissection, dilated pulmonary trunk in keeping with pulmonary arterial hypertension.

The following day the patient developed pericarditis and anuric renal failure. Ongoing transmural anterior/inferior STEMI. He developed abdominal distention ?pseudo-obstruction.

The next day, the patient exhibited worsening heart failure. He improved with pericardiocentesis of 600 ml heavily blood-stained fluid (pericardial drain inserted).

Day 4 of admission – pericardial effusion decreased but still present on TTE.

The following day, patient awaiting transfer to Coronary Care Unit bed.

On Day 6 of admission the patient developed hypotension, tachypnea, drowsiness, and tachycardia. Bedside TTE → atypical tamponade but no right ventricle collapse. Increased ST elevation in V2-3. Taken to theatre for high-risk left VAT drainage of pericardial tamponade and pericardial window.

Post operatively, the patient returned to ICU peri-arrest with high level vasopressor support. Cardiac arrest within minutes of arrival back in ICU. Patient died shortly after.

Conclusion

Overall, this patient was well managed. Documentation was good. This was a patient at high operative risk because of his STEMI. A case could have been made for taking a palliative approach in view of his age. I have no issues with going to surgery, as long as the risk was accepted by the patient and his family.

CASE EXAMPLE 8 – ORTHOPAEDIC SURGERY

Emergency Hospital Admission

Length of Admission: 12 days

Age and gender: A female patient in her late 80s

ASA: 3 with co-morbidities listed as cardiovascular, neurological, hypothyroidism, anaemia, and polymyalgia

Diagnosis: Left femoral neck fracture

Operative Procedure: Left hip unipolar arthroplasty

Date of Operation: Day 7 of admission

Cause of death: Cardiorespiratory failure, Large ischaemic cerebrovascular event

Surgeon's Synopsis

The patient who lives independently alone had a fall while she was shopping, made her way home, and tried to put herself to bed noting that she had quite severe pain in her left hip. She was operated on Day 7 of admission, left hip unipolar arthroplasty performed post-operatively. She was confused and had low urine output.

Day 1 post-op patient was not responsive, but her observations were stable. The patient was seen by the medical team and only explanation was a stroke. She stayed unresponsive. Discussed the situation with family and they decided for her to be palliated. The patient deteriorated and died.

Independent Case Assessment

The patient had a pre-injury history of repeated falls over a 6-month period, which was not associated with a morphological reason, but rather, multiple medical co-morbidities. The patient was brought to the local hospital in a reasonable mental state being not confused, appeared to be orientated in time, place, and person, and she signed her surgical consent.

The date of injury was a Thursday, the day of admission. She was assessed on Friday with her blood tests being reasonably normal, in terms of the major figures, but she did have an elevated inflammatory marker. She was then assessed by the medical staff in terms of her cardio-respiratory status. The nurses' notes on Saturday record that the patient is very agitated. On Sunday she is assessed as suitable for surgical intervention. Monday and Tuesday are then allocated to having the patient's medical status optimised for surgery. However, on Tuesday she is confused and has a right sided facial drop.

On Wednesday, in the pre-operative state, the patient is confused, and they find two pressure sores on her left buttock. The operation note indicates that she had an ASA grading of 3 E, and she was given regional anaesthesia and some sedation.

Notwithstanding her multiple medical co-morbidities, given that she was lucid, did not sustain a head injury, and was physically independent in terms of her daily care and household needs, it is not clear from the notes what medical justification was given in order to delay a relatively simple straight forward surgical procedure for a fractured neck of femur.

Conclusion

On this occasion, I would agree with the first line assessor, that there is a significant question in relation to the delay of the timing of surgery which should, ideally have been performed within the first 24 hours, and no later than 48 hours following admission. Current literature points to the overwhelming efficacy of early surgical intervention in a fractured neck of femur unless there are compelling and contrary medical circumstances.

However, it should be also said that the same medical event which caused her death, may have occurred notwithstanding early surgical intervention.

CASE EXAMPLE 9 – GENERAL SURGERY

Emergency Admission to Hospital A, later transferred to Hospital B

Length of Admission: 8 days

Admitted for 1 day at Hospital A and transferred to Hospital B for a further 7 days

Age and gender: A male patient in his early 80s

ASA: 3 with co-morbidities listed as renal, cardiovascular and age

Diagnosis: Ruptured gall bladder with intra-abdominal sepsis

Operative Procedure: Laparoscopic cholecystectomy & Exploratory laparoscopy

Date of Operation: Day 2 of admission and Day 7 of admission

Cause of death: Cardiac arrest and sepsis

Surgeon's Synopsis

The patient was admitted to outlying Hospital A on a Tuesday with abdominal pain and cholecystitis. After about 36 hours, she was noted to be anuric with tense abdomen and was transferred to Hospital B, under my care, in the middle of the night.

CT scan showed fluid around liver, and thick gall bladder. Inflammatory markers raised. Urinary output improved with IV Fluids. Admitted for resuscitation to ICU. Started on Tazocin and Flagyl and taken to theatre first thing in the morning, Day 2 of admission.

Laparoscopic cholecystectomy was performed. Patient taken back to ICU. Improved steadily from over the next 7 days, coming off vasopressors, with good urinary output, improving inflammatory markers. Urgent surgery was required when the patient became septic. He passed away on the operating table following cardiac arrest.

Independent Case Assessment

Admitted to a peripheral hospital, the patient goes into septic shock and anuria. He is transferred to a regional hospital for ICU care and surgery. The patient undergoes ICU resuscitation and then laparoscopic cholecystectomy on Day 2 of admission.

It was a difficult operation. He returns to ICU and is progressing well until Day 5 post-op when he goes into septic shock becoming tachycardic and febrile. Whilst on the way to CT, the patient became unwell enough for a decision to be made, which was appropriate and timely, to take him straight back to theatre. Laparoscope reintroduced and no evidence of bile leak, bowel injury or ischemia. Drains placed, but whilst pulling out of surgery, patient went bradycardic, then went into V-Fib arrest. Despite CPR, and cardiac resuscitation, there was no return of pulse.

Conclusion

Elderly patients with acute abdomen are prone to deteriorate quickly. It is important that consideration is given for treatment to occur at a hospital where HDU/ICU support is available. Discussion for palliation should be considered if the chances of death post-surgery are very high. This patient had high chance of death due to his age and co-morbidities.

CASE EXAMPLE 10 – GENERAL SURGERY

Emergency Admission to Hospital A, later transferred to Hospital B

Length of Admission: 7 days

Admitted for 3 days at Hospital A and transferred to Hospital B for a further 4 days

Age and gender: A female patient in her early 80s

ASA: 5 with co-morbidities listed as cardiovascular, respiratory and age

Diagnosis: Small bowel obstruction due to strangulated obturator hernia

Operative Procedure: Laparotomy, small bowel resection and repair of obturator hernia

Date of Operation: Day of admission at Hospital B

Cause of Death: Failure to recover from surgery due to comorbidities – Heart failure; respiratory failure and vascular insufficiency of the intestine

Surgeon's Synopsis

The patient was admitted to Hospital A for medical care for respiratory issues. Transferred to Hospital B with small bowel obstruction. The patient was seen in Hospital B at 18:35 hours and transferred under my care for operation by 20:06 hours. Ischaemic small bowel within obturator hernia. Small bowel resection same day and transfer to ICU.

Failure to recover from insurmountable insult of ischaemic bowel in setting of significant respiratory and cardiac disease.

Independent Case Assessment

The patient was transferred with an obstructed hernia and significant comorbidities. Pre-operatively the decision to operate was discussed with patient and family, the operation was timely and appropriate, as was the post-operative care.

The first line assessor questioned the decision to operate and how this was presented to the family. It is impossible to definitively answer this from a review of the medical notes and having not met the patient. However, given the patient's comorbidities and that she was immediately dialysed post-operating, it is likely she was never going to survive.

It may be that a longer discussion around palliation would have been appropriate, and it may be that this should have occurred prior to transfer. I was impressed at the consultant not delegating the family discussion to the fellow.

Conclusion

Timely manner of operation, and that post-operatively, when the patient did not thrive, she was appropriately palliated.

CASE EXAMPLE 11 – GENERAL SURGERY – MULTI-SURGEON

Emergency Admission to Hospital A, later transferred to Hospital B

Length of Admission: 4 days

Admitted to Hospital A for 1 day and transferred to Hospital B for a further 3 days

Age and gender A female patient in her mid-80s

ASA: 4 with no known co-morbidities (Hospital A)

ASA: 5 with co-morbidities listed as cardiovascular and age (Hospital B)

Diagnosis: Perforated peptic ulcer

Operative Procedure: Laparotomy, peritoneal lavage, over-sewing of perforated peptic ulcer

Date of Operation: Day of admission

Cause of death: Septicaemia / Overwhelming sepsis

Surgeon's Synopsis (Hospital A)

The patient presented to Emergency Department with diarrhoeal illness. Sudden deterioration whilst still in ED over 8-hour period. CT scan performed reporting perforated viscus. Patient rapidly deteriorated going into AF with septic shock.

Seen by myself, treating surgeon, at that time and urgent surgery organised. Laparotomy performed with findings of perforated duodenal ulcer and gross peritoneal contamination. Ulcer over-sewn and patched, and peritoneal cavity copiously lavaged.

Patient very unstable intra-operatively, requiring inotropic support, transfer to tertiary care facility organised with ICU bed.

Surgeon's Synopsis (Hospital B)

The patient transferred here in the early morning for post-op for ICU care. She continued to progress with MODS (multiple organ dysfunction syndrome) post-op. Decision made for NFR (not for resuscitation). Patient passed away on Day 3 post-op.

Independent Case Assessment

This patient presented to a major rural hospital Emergency Department with 5 days of diarrhea and abdominal pain. She had significant comorbidities including AF on Warfarin, also on Frusemide. She deteriorated quickly in emergency.

On her admission at 14:00 she was reviewed by ED quickly and she was hypotensive, temp. 37.7, dehydrated. Beta blocked. WCC 16.6, Neutrophils 13.8, raised lactate 1.79, decreased Alb 24, decreased K 3.4, raised INR 5.8.

She was appropriately rehydrated, however until her pain got worse after 17:30, she was reviewed and asked for CT abdomen. CT result was reviewed after 19:00 and surgical referral was done. She was operated at 21:00 then transferred to Hospital B ICU post-op (around 01:00). Unfortunately, she did not survive, even with all the efforts of the Hospital B ICU team.

Conclusion

This case highlights the importance of early intervention in an elderly patient when a serious condition may not be very obvious initially, until the disease has progressed to an extent where the patient may be on a pathway to irreversible organ damage.

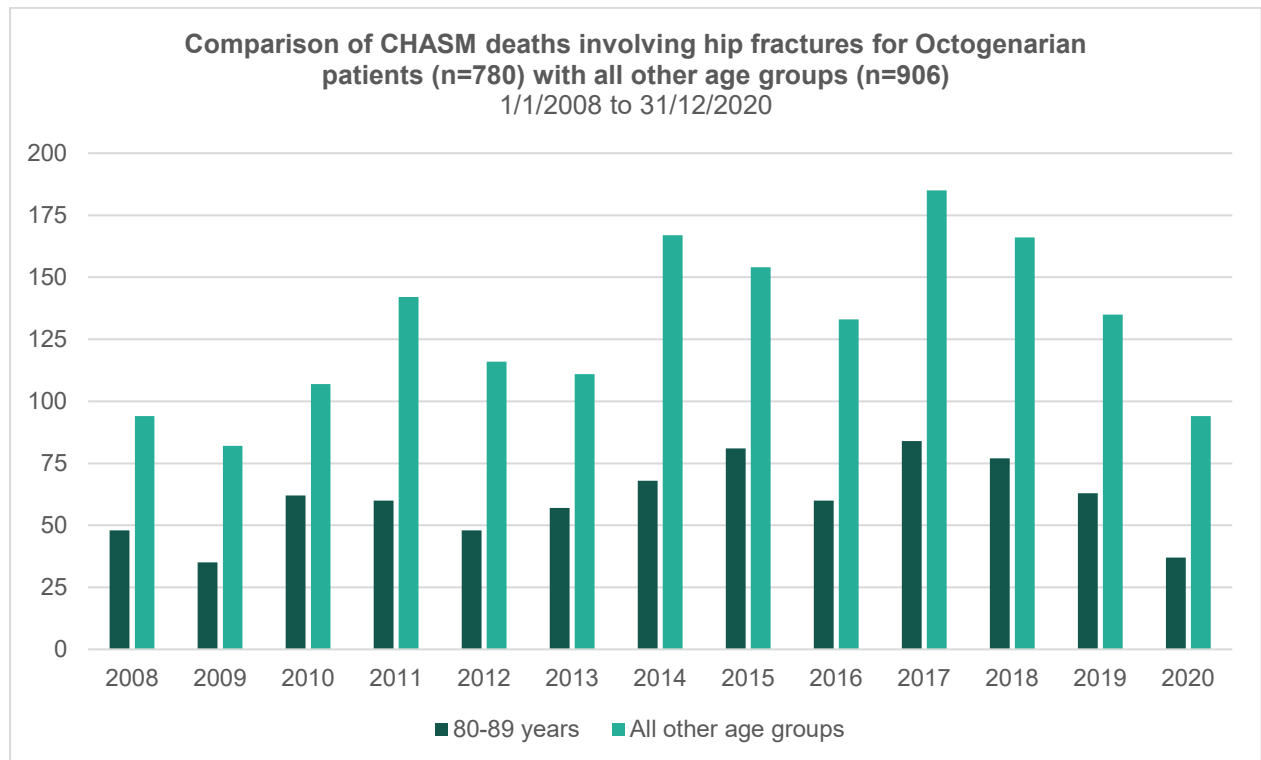
Repeated blood measurement should occur in ED to monitor decreased potassium, raised INR and CRP.

The importance of a simple X-ray, if done earlier, could have escalated intervention.

NSW MORTALITY DATA – HIP FRACTURES

Electronic data collection for the Collaborating Hospitals' Audit of Surgical Mortality (CHASM) program began on 1 January 2008. Data analysis from 1 January 2008 to 31 December 2020 identified that deaths for patients with hip fracture diagnoses (n=1,686) represent 9.6% of all closed CHASM cases, with the 80-89 year age band representing 46% (n=780) of total deaths with hip fracture diagnoses. The average age for hip fracture mortality is 85.80 years, with female mortality higher (n=442) than male (n=338).

Note: Deaths may not be directly related to the diagnosis as some patients may have other injuries or illnesses that complicate their recovery from the surgery related to their hip fracture.



Further analysis of the data shows that 34% (n=576) of deaths occurred in the 90-99 year age band and 15% (n=260) occurred in the 65-79 year age band, which translates to 95.8% (n=1,616) of all CHASM deaths involving hip fractures occur in patients 65 years and over.

These outcomes for hip fractures highlight the importance of the Falls Prevention Program¹ at the Clinical Excellence Commission and the need to provide safe mobilisation options for elderly patients both in hospital and at home.

¹ Falls Prevention Program <https://www.cec.health.nsw.gov.au/keep-patients-safe/older-persons-patient-safety-program/falls-prevention>