

Victorian Audit of Surgical Mortality



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Royal Australasian College of Surgeons

**Guidelines for
First-Line and Second-Line
Assessors**

ROYAL AUSTRALASIAN COLLEGE OF SURGEONS

Introduction

Thank you for agreeing to be an assessor in the Victorian Audit of Surgical Mortality (VASM).

The audit process is designed to highlight system and process errors in the management of surgical patients. The review process is a peer assessment of events that led to the death of a patient.

All reviews should be carried out in a spirit of empathic enquiry. This peer review is intended as an educational rather than a punitive exercise.

Assessors should ask themselves whether the management of the case they are assessing adhered to a reasonable care pathway.

If the assessors feel the case was not reasonably managed, then they must ask whether the deviation from the accepted care pathway was significant, and whether there was any justification for the deviation.

There is a degree of subjectivity in the assessment process. To enhance the objectivity of the outcome of the case review, VASM has specified a range of predefined case outcomes that the assessor can choose from.

Assessment Criteria

In the assessor's view:

- *No area of consideration, or concern, or adverse event exists*
The assessor believes there were no facets of the patient's management that might be considered inappropriate and/or might have negatively contributed to the patient outcome.
- *An area for consideration exists*
This is where the assessor believes an area of care **could** have been improved or different, but recognises that it may be a current area of peer debate.
- *An area of concern exists*
The assessor believes that an area of care **should** have been better managed.
- *An adverse event occurred*
This is defined as an unintended injury or event that was **caused** by the medical management of the patient rather than by the disease process, and which was sufficiently serious to lead to prolonged hospitalisation, or to temporary or permanent impairment or disability of the patient at the time of discharge, or which contributed to or caused death.

Automatic inclusion as adverse event:

- Anastomotic leaks
- Aspiration pneumonia
- Falls in hospital resulting in significant morbidity or mortality.
- Iatrogenic perforation of a viscus
- Post operative hemorrhage
- Pulmonary embolus
- Wound dehiscence

First-line assessments

Deaths are notified to VASM either by the treating surgeon or the hospital in which the patient died.

All eligible cases require a first-line assessment.

We ask that assessors review the case record form submitted by the treating surgeon and then complete the first-line assessment form. The conclusions of the assessment should present a clear view of the assessor's perception of all phases of management leading to the outcome.

Points should be made in a detached manner and any opinions expressed should be objective and reasonable.

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Conclusions should reflect current approaches to patient management.

There are two possible results of a first-line assessment:

- The information on the case record form provided by the treating surgeon is adequate for the assessor to reach a conclusion about the management of the case and identify any areas of consideration, or concern, or adverse events.

Note: A case note review need not be requested when obvious deficiencies of care, including adverse events, are identified from the case record form. If the first-line assessor feels no further useful information could be gained from a case note review, then a second-line assessment is not necessary.

- A second-line assessment (case note review) is necessary to clarify issues of patient management identified or suspected in the first-line assessment.



Indications for a second-line assessment

Case note reviews provide more information on, and allow greater scrutiny of, events leading to the patient outcome.

Some triggers for second-line assessment:

- Relevant information is missing and it is suspected that significant errors may have been made by the surgical team or others that contributed to the death of the patient.
- A more detailed review of the case could better clarify any lessons to be learned from the case under review.
- Death is quite unexpected, for example in a young fit patient with benign disease or day surgery case.

Second-line assessments (case note review)

Where a second-line assessment has been recommended, VASM staff will obtain the case notes from the relevant hospital or surgeon. VASM will ensure the case notes are de-identified and will deliver all relevant materials to the second-line assessor.

A second-line assessment involves the review of the case record form and comments from the first-line assessor and the patient's case notes.

VASM staff will provide a reply paid envelope for the assessor to send their report and all case notes back to VASM.

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Preparation of second-line assessments

In addition to completing the assessment form, please provide a brief *typed* case report outlining the management issues you perceive to be most relevant to the patient outcome.

An electronic file of this report would be greatly appreciated rather than paper alone.

Please indicate if you think the level of care indicated is in line with current practice.

It is important that you complete all sections of the form. This will enable VASM staff to accurately code the case and reliably inform state and national trends in mortality.

Suggested format for a case report

1. Provide a brief history and factual account of the clinical events.
2. Comment on the quality of record keeping in the case notes.
3. Provide constructive comments on how the outcome might have been improved.
4. Divide comments into:
 - “areas for consideration” (possible alternative approaches to management)
 - “areas of concern” (management considered to be suboptimal)
 - “adverse events” in management according to the definition provided earlier.
5. Suggest any changes in future practice that you feel might avoid repetition of any identified areas of deficient care.



Examples of second-line case reports

Case 1: Second-line assessment request due to insufficient detail on retrospective bleed.

Summary

The case is that of an elderly patient who underwent elective laparoscopic reduction of a very large hiatus hernia, posterior hiatal repair, partial fundoplication and cholecystectomy.

The patient suffered a hypotensive collapse on the ward on the 6th day postoperative after apparently uneventful progress to that point.

The patient died, still on the ward, approximately 5 hours after the initial collapse. There is strong clinical evidence that the collapse and subsequent death were due to internal bleeding, the recognition and management of which was grossly delayed.

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Case notes

The hospital case notes provided are adequate and document the sequence of events and the measures taken with reasonable clarity. Not provided, however, is the post-mortem information. Telephone enquiry by VASM staff has indicated that this is still unavoidable. The results of the post-mortem would reasonably be expected to: provide confirmation that death was due to internal bleeding; identify the site and extent of such bleeding; determine whether there was any avoidable failure in operative technique that contributed to the occurrence of such bleeding, and whether there were significant comorbidities, previously known or unknown, contributing to the final collapse.

Continued efforts should obviously be made to obtain this information. When, and if, it is provided, a further supplementary VASM assessment would be appropriate.

Preoperative assessment, decision to proceed, choice of surgical procedure and conduct of surgery

Documentation shows an appropriate and thorough pre-anaesthetic assessment. This patient had very significant medical problems, including ischaemic heart disease, hypertension, permanent pacemaker, respiratory impairment, severe renal impairment and controlled pernicious anaemia. The patient was certainly a moderate preoperative risk.

The notes indicate appropriate consideration was given to performing a cholecystectomy only, but both the patient large hernia and the gall bladder were significantly symptomatic and the decision to proceed with the more extensive surgery to deal with both problems simultaneously was made after appropriate anaesthetic and cardiac assessment and consultation with the patient. This decision appears quite reasonable. The notes indicate a technically satisfactory operation without surgical or anaesthetic problems.

The patient was nursed initially in HDU and returned to the general surgical ward in an apparently satisfactory and stable condition. The patient progress was then quite satisfactory until the sixth post-operative day, at which stage the patient was apparently ambulant, reasonably independent and tolerating a fluid diet. Consideration was being given to the patient discharge in the coming days. DVT prophylaxis was given as s/c heparin 5,000 units b.d. This was carried through until, and including, the evening of the patient final collapse on the 6th day.



Adverse event

At approximately 6.00 pm on the 6th post-operative day the patient felt light-headed and collapsed when ambulating to the toilet. A Medical Emergency Team (MET) call was made. The patient was found to be hypotensive. The patient was given intravenous fluids, morphine and antiemetics. The notes indicate the patient was complaining of upper abdominal pain and was tender in the upper epigastrium. Although internal bleeding is recorded as a differential diagnosis, it appears the patient was simply regarded as having had a vasovagal event without further immediate investigation, vigorous volume replacement or close observation. A second MET call was made at approximately 10.00 pm. The patient was found to be severely hypotensive, very unwell and very pale.

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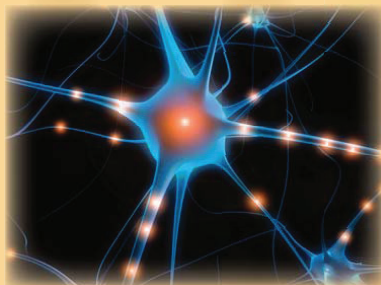
Further resuscitation was commenced with intravenous fluids, inotropes and eventual intubation. Haemoglobin was recorded at 2.8g/L. The surgical registrar was notified (the exact time of that notification is not clear) but it is apparent that the patient was, by then, in extremis. The surgical consultant was apparently first notified of the patient deterioration at approximately 11.00 pm and then notified of the extremely low haemoglobin a short time later. An urgent return to theatre was planned, but the patient continued to deteriorate rapidly and died at approximately 11.30 pm.



Areas of concern

The major area of serious concern in this case is obviously the failure to recognise and report probable internal bleeding when the patient first suffered a hypotensive collapse. Appropriate investigation and resuscitation at that time may well have influenced the outcome. The administration of morphine at this time and the scheduled dose of 5,000 units of heparin at 8.00 pm were inappropriate.

When the patient collapsed at approximately 11.00 pm, five hours after the original incident, the fatal outcome was unavoidable.



Comments

The standard of ward care, investigation, observation and management of this patient following an abrupt unexpected deterioration 6 days after major laparoscopic surgery was inadequate. Protocols should be reviewed with the staff concerned, and generally within this hospital. It is noted that the hospital documentation carries the advice "If this patient has more than two MET calls in 24 hours the ICU and treating consultant MUST be notified". It might be more appropriate if the treating consultant were notified of any MET calls.

Case 2: Earlier transfer, earlier contrast studies and urinary catheter for better fluid balance

Case Notes

An elderly patient was admitted to hospital A on 16th September with 3 days of nausea, vomiting, left iliac fossa pain, and no bowel action. The patient was a patient with religious beliefs, refusing all blood transfusions. The patient had a known history of abdominal aneurysm repair, berry aneurysm surgery and subsequent ataxia, hypertension, congestive cardiac failure, ischaemic heart disease, T10 crush fracture and gout. The medication taken was Anginine, Aspirin, Dilatrend, Lanoxin, Lasix, Nexium, Nitro-dur patch, paracetamol and Tritace. The patient was allergic to morphine.

Investigations showed the patient was anaemic Haemoglobin was 107 and had decreased renal function urea 17.5 and creatine 189. Plain abdominal x-ray on 17th September a report showed subacute, mechanical small bowel obstruction. There is no record of an electrocardiogram (ECG) in the notes forwarded to me or in the hospital transfer letter to hospital B from Hospital A, nor is there a record of the patient past history of chronic renal failure, myocardial infarction in several years earlier, and paroxysmal atrial fibrillation.

The patient was treated with intravenous fluids, fasting and antibiotics for diverticulitis. The patient deteriorated, and the notes report a second x-ray which showed a worsening picture of small bowel obstruction. The patient was transferred to Hospital B on 20th September. The patient was assessed as having a small bowel obstruction and a gastrograffin contrast study was arranged, which confirmed distal small bowel obstruction with marked distension of small bowel loops. The patient was treated and renal function improved, but a urinary catheter not inserted until 9.30 am on 21st September. During the morning ward round on that day, pulse 90/min, atrial fibrillation (AF) noted, and medical review requested.

There was ongoing clinical evidence of obstruction and peritonitis. A laparotomy was arranged and anaesthetic commenced at 4.30 pm on 21st September. One to two minutes after induction the patient became hypotensive, and required adrenaline to correct this. Surgery commenced, but ventricular fibrillation occurred and the patient died at 4.55 pm.

Comments

At Hospital A the initial diagnosis of diverticulitis is reasonable. However, the absence of a fever and rise in white cell count after three days of symptoms, the appearance of a small bowel obstruction on x-ray and absence of bowel function, should trigger doubt and indicate the need for further investigation by gastrograffin follow through. Although an intravenous drip was commenced, insufficient attention was taken of nasogastric loss, leading to insufficient intravenous replacement and worsening renal function. In the notes I was given from Hospital A, there is no record of a history or examination by a doctor, and the absence of an ECG is of concern. In the hospital transfer letter, there is no mention of the patient severe past history of cardiac disease or chronic renal failure, and no pathology & x-ray reports were enclosed. At hospital B a urinary catheter should have been inserted on admission. Findings of a raised jugular venous pressure, basal lung crepitations, and ankle oedema suggest cardiac failure. Mild anaemia was confirmed, poor renal function was shown on pathology tests, but had improved, and adequate intravenous replacement was commenced. An ECG at 2.03pm on 20th September shows sinus rhythm with evidence of inferior and anterior infarction of indefinite age. An ECG on 21st September shows atrial flutter with anterolateral ST elevation and old infarct. On surgical ward round, AF is noted, a medical referral and a urinary catheter are requested. The informed consent form for operation uses abbreviations, and the writing is very difficult to read.

There is a subsequent note on 21st September from a medical registrar stating that as the patient is about to go to the operating theatre, and will be reviewed later. A preoperative ECG at 3.10 pm is reported as AF with rapid heart rate, left anterior hemiblock and possibly an old inferior infarct. The anaesthetist notes AF and pulse 108/min and blood pressure (BP) 167 at the start of induction. The patient had an epidural catheter inserted at T10,11. After initial hypotension, BP was stabilised at 95/45 after multiple doses of adrenalin, with pulse 100/min, atrial fibrillation and laparotomy commenced.

Area of consideration

Medical assessment notes and transfer letter at Hospital A were inadequate, and staff needed to consider other causes of small bowel obstruction earlier and investigate with gastrograffin (which can lead to resolution of the obstruction in some cases), and consider a urinary catheter. There was also deficient history of renal and cardiac disease, and absence of ECG. Hospital B's earlier assessment of ill patient following transfer (not phone contact), by treating surgeon, rather than just prior to operation. Possible effect of thoracic epidural on BP at induction in patient with cardiac disease.

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Area of concern

Hospital A's inadequate intravenous fluid replacement, possibly by not noting volume of nano gram loss. Hospital B's insufficient attention to the severity of the patient's cardiac disease. Not insisting on medical assessment prior to surgery. The cardiac factors impacting on surgery were the past history of two myocardial infarctions, coronary artery stenoses, atrial flutter and atrial fibrillation with tachycardia, stable angina, anaemia, chronic renal failure and electrolyte abnormalities, and debility from 7 days of illness.

Conclusion

Earlier adequate management and referral of the patient for treatment of bowel obstruction might not have prevented surgery, but may have decreased the risk of it, and allowed more time for full medical assessment.

Suggestion

This elderly patient had known severe cardiovascular disease, and renal failure, and was considered by the patient surgeon to be at a high risk of complication or death during the surgery, or in the post-operative period; in addition there was a likelihood of a protracted operation due to adhesions from previous aortic aneurysm surgery. In such a case preoperative assessment by a cardiologist, and the provision for a coronary care bed or intensive care bed post operatively, would be prudent.

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Acknowledgments

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