

QUEENSLAND AUDIT OF SURGICAL MORTALITY

SECOND-LINE ASSESSMENT



The Royal Australian
and New Zealand
College of Obstetricians
and Gynaecologists
Excellence in Women's Health

Guidelines for Second-line Assessors

Second-line assessors should consider the key areas listed below when writing their second-line assessment reports. These key areas are supported by the research cited below.

- Appropriate and timely diagnostic and therapeutic measures
- Correct indication and timing of:
 - operations
 - interventions
 - intensive care
 - resuscitation orders
 - palliative care treatment orders
- Consideration and adherence to guidelines
- Monitoring of the treatment process
- Effective interdisciplinary co-operation
- Accurate documentation of patient management and patient records

Research Outcomes: Peer Review

The goal of peer review is to add to your learning. It aims to identify challenges in clinical management so as to improve future treatments.

Some of the challenges which may affect treatment quality include:

- inadequate interdisciplinary co-operation
- delayed transfer from ward to the intensive care unit
- misdiagnosis of complications

Other areas of consideration for peer review may include:

- unclear responsibilities in emergency cases
- structural issues that impede access and cause delays

The results of three studies conducted on peer review on the effect of hospital mortality rates suggest that:^{[1][2][3]}

- combining outcome measures and peer review can identify deficient processes
- implementing evidence-based protocols can help to lower mortality rates

Further, detecting adverse events through retrospective patient record reviews is more effective than voluntary reporting systems.

1. W. Krahwinkel, E. Schuler, M. Liebetrau, A. Meier-Hellmann, J. Zacher, R. Kuhlen, For the HELIOS Medical Board and HELIOS Working Group on Peer Reviewing, The effect of peer review on mortality rates, *International Journal for Quality in Health Care*, Volume 28, Issue 5, 10 October 2016, Pages 594–600. DOI: 10.1093/intqhc/mzw072 <https://academic.oup.com/intqhc/article/28/5/594/2499471> Accessed 17 April 2019
2. Chi-Wai Lui, Frances M. Boyle, Arkadiusz Peter Wysocki, Peter Baker, Alisha D'Souza, Sonya Faint, Therese Rey-Conde, John B. North. How participation in surgical mortality audit impacts surgical practice. *BMC Surgery*. 2017;17:42 DOI:10.1186/s12893-017-0240z: <https://bmcsurg.biomedcentral.com/articles/10.1186/s12893-017-0240-z>
3. Crebbin W, Beasley S, Tobin S, Guest G, Duviver R, Watters D. Judgement – Clinical Decision Making as a core surgical competency. *ANZ Journal of Surgery*. 2019 Jan. <https://doi.org/10.1111/ans.15098>

Example report - Renal insufficiency in a patient with a severely ischaemic right foot

Background

This 83 year old man was admitted to hospital for further treatment of a severely ischaemic right foot. He had a nine month history of rest pain in the foot and had also developed septic arthritis in the right fourth toe some time before admission. He was an overweight man with a past history of diabetes and polymyalgia for which he was on steroids.

Sequence of events

His admission blood sugars were of the order of 15.0 mmol/L and there was mild renal insufficiency with a CGFR of 45 mL/min and a creatinine of 0.18 mmol/L.

Initially angioplasty the day following admission was cancelled, as the patient was not adequately hydrated. On the second day after admission, he proceeded to angioplasty, though unfortunately the procedure was complicated by a tibio-peroneal artery dissection. Further anterior tibial subintimal angioplasty was attempted and a dorsalis pedis pulse was recorded at the end of the procedure though it faded quickly. The patient was then managed conservatively but on the second day post angioplasty developed diarrhoea, worsening renal function and became septic. There had been a suggestion of a UTI on admission.

Three days post angioplasty it was decided that the patient's leg required amputation and he underwent a below-knee amputation. According to the anaesthetic notes however, the patient was 'in extremis' on presentation to theatre. He managed to survive the procedure and was subsequently managed in ICU for a few days. He then went back to the ward where his condition deteriorated and he died fairly quickly from renal failure, cardiac insufficiency and sepsis.

Areas of good practice (or deficiencies of care)

While it is difficult to tell from the notes the critical nature of the limb and whether in fact muscle ischaemia was severe, I think it is unlikely, given this elderly man's co-morbidities as mentioned above, that an angioplasty alone would have salvaged his leg. Given the fact that he had pre-angioplasty mild renal insufficiency, one would have been more tempted to offer him primary toe or below-knee amputation as a first-line measure of treatment so as to get rid of one of the septic foci. The UTI may well have contributed to his ultimate demise with systemic sepsis.

Also from the notes it appears that despite a second angioplasty procedure achieving some benefit angiographically, the patient was still in severe foot pain and required morphine for this. In view of this, it became quite clear that revascularization was not going to be helpful and therefore I would have recommended earlier below-knee amputation.

Summary

The main issues arising from my assessment of this case are related to:

1. Proper hydration prior to any angioplasty procedure in a patient with renal insufficiency
2. When the angioplasty failed, further earlier amputation in all probability would have been beneficial.

Learning points

I think this case highlights the importance of hydration before any radiology procedure involving contrast, especially in patients with pre-existing renal insufficiency. There did not appear to be communication between the vascular staff and the radiologists (who did the angioplasty) concerning this problem. Hence the radiologist quite rightly cancelled the first procedure until such time as hydration had been improved.