

The Department of Human Services, Victoria

Risk Watch

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Lessons from the Sentinel Event Casebook

Possible Dehiscence Of A Large Bowel Anastomosis – Considerations From The Field.

An obese patient underwent a high anterior resection for a diagnosed colon adenocarcinoma. The procedure was performed on a Friday. The anastomosis was stapled and a leak test was performed at the time of surgery and prophylactic antibiotics were administered. On the third post operative evening (Sunday) the patient spiked a temperature of 38°C. The patient's condition began to deviate from the expected course of recovery. Despite being prescribed triple antibiotics and undergoing numerous tests, the source of the sepsis was not diagnosed.

On the fifth post-operative day (the following Tuesday) the patient was transferred to ICU for management of septic shock. The patient underwent an urgent laparotomy where faecal peritonitis was found secondary to an anastomosis leak. The patient had been reviewed on day one by the surgeon during a routine ward round and again on day five, without the surgical team. The patient had multiple reviews by the surgical registrar and HMO and the after-hours covering registrar. Following surgery the patient's condition deteriorated and the patient subsequently died.

What were the major contributing factors in this case?

- There was inadequate documentation of the communication between team members and the surgeon regarding the patient's medical care.
- No formal written guidelines existed to support medical officers contacting surgical consultants.
- There was a delay of 36 – 48 hours in recognition of the anastomosis leak by the treating team during two post-operative reviews and therefore the ability to treat the source of the sepsis was delayed.
- The difficulty of the surgery and the decision not to perform a temporary colostomy (due to the location of the anastomosis) increased the likelihood of the anastomosis leak occurring.
- The autopsy showed that the patient had lung metastases, an indicative of a poorer outcome particularly if complications eventuate.

How did the health service address these issues?

- A review was undertaken by the Surgical Audit Program and by the Surgical Unit.
- A formal handover tool including electronic register be implemented for medical officers to communicate information on unwell patients.
- Head of surgery in consultation with Head of ICU implemented a set of red flag criteria that if met require mandatory notification by medical officers to the treating surgeon.
- A retrospective audit and an ongoing audit of anastomotic breakdown following colon resection and other surgical complications of colorectal surgery benchmark against DHS clinical indicator number 5.
- The lessons learned are incorporated into future HMO education programs.

QUOTE OF THE MONTH

"Health services are striving to create the kinds of organisation where a passion for quality is instilled throughout the organisation. Where all staff have a curiosity, a drive, an enthusiasm for innovation and improvement. Where solving individual clinical problems is still vital but where seeing opportunities for better care for hundreds of patients captures the imagination of all staff."

Sir Liam Donaldson, 2003, *Clinical Governance*

Steal Syndrome In Arterio-Venous Fistula (AVF) Formation - What Are The Possible Issues And Consequences?

A 61 year old patient underwent a right arterio-venous fistula (AVF) formation to provide access for haemodialysis for the treatment of end stage renal failure. The patient's past history included insulin requiring type 2 diabetes mellitus, severe peripheral vascular disease (upper and lower limb), ischaemic heart disease and sick sinus syndrome. The patient's first language was not English.

The Anaesthetics Unit considered the patient's co-morbidities and agreed to undertake a brachial plexus block for the procedure. On return to the ward post-operatively the absence of radial/brachial pulses bilaterally made it impossible to record the blood pressure non-invasively. The absence of right arm movement and poor sensation, were consistent with a successful brachial plexus block.

On the third post-op day, the arterio-venous fistula flow was considered poor. The motor function and sensation were noted to be present in the right hand. Since AVF was considered poor, the patient required exploration and thrombectomy under a general anaesthetic of the occluded AVF. Following thrombectomy, movement in the right limb was observed. Routine neurological limb observations were undertaken but the patient's use of English limited the assessment.

On the sixth post-op day (Saturday), the renal unit registrar documented right hand pain and numbness, and attributed these to the brachial block performed on day 1. By the eighth post-op day, 'Steal Syndrome' (*stenosis or obstruction of subclavian artery near its origin**) was recognised, requiring AVF ligation. The patient subsequently experienced irreversible ischaemic neuropathy, palsy of the right arm and developed a gangrenous right finger.

The following websites provide information on Steal Syndrome:

<http://ndt.oupjournals.org/cgi/content/full/18/6/1045>

<http://www.emedicine.com/radio/topic663.htm>

http://ndt.oupjournals.org/cgi/search?andorexactfulltext=and&resourcetype=1&disp_type=&sortspec=relevance&a

What did the health service's root cause analysis identify?

- The utilisation of a long acting regional block, in the absence of palpable arm pulses reduced the ability to detect signs of Steal Syndrome following the formation of the AV fistula.
- The patient's use of English as a second language limited the assessment of neurological signs and symptoms in the arm postoperatively. This contributed to delay in the recognition of Steal Syndrome following thrombectomy.

What action did the health service undertake to address these issues?

- A brachial plexus block is not to be used in patients undergoing an AV fistula formation where a radial or ulnar pulse is not palpable during preoperative assessment.
- Regular monitoring of neurological signs and symptoms are mandatory following regional arm blocks for AVF procedures. Where signs of ischaemia develop, immediate Vascular Surgical Unit notification is required to discuss need for surgical exploration and management.
- Guidelines relating to AV fistulas incorporated in the Vascular Surgical Unit Handbook.
- Involvement of Interpreter Services to assist in the development of appropriate communication strategies for patients who do not have English as their first language.
- Reinforcement of the availability of the Interpreter Service with medical staff.

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POLICY PROWL PATCH

Gestational diabetes policy required –please send to W.Anthony@sdmh.org.au

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