VICTORIAN SURGICAL CONSULTATIVE COUNCIL TRIENNIAL REPORT 2008-2010
INTRODUCTION

The Victorian Surgical Consultative Council (VSCC) was established in October 2001 under the Health Act 1958 and now functions under the Public Health and Wellbeing Act 2008. The VSCC is the advisory body to the Minister for Health on the quality and safety of surgery in the state of Victoria.

The council’s terms of reference are summarised as follows:

- To monitor, analyse and report on key areas of potentially preventable surgical mortality and morbidity within the Victorian hospital system.
- To liaise with other consultative councils on issues of mutual interest, including the development of appropriate systems for reporting of relevant cases by practitioners.
- To improve surgical practice by publication and dissemination of relevant information and practical strategies identified during deliberations of the council.
- To report regularly to the Minister for Health and the Victorian Quality Council.
- To respond to specific matters referred to the council by the minister, for investigation and reporting as required.

The VSCC continues as a prescribed consultative council under Sections 33-43 of the Public Health and Wellbeing Act.

The inaugural Chairman of VSCC, Mr Jonathan Rush, AM, MBBS, FRACS, retired in February 2010 after guiding council’s growth and activities throughout the decade. Mr Peter Field, MBBS, FRACS, was appointed chairman in February 2010.
ACKNOWLEDGEMENTS

The council would like to thank:

- all the individual medical practitioners who have contributed cases on a voluntary basis
- the various health services and their clinical risk management coordinators who have contributed cases on behalf of the treating surgeon
- the various colleges for their interest, help and support over the past three years
- the Royal Australasian College of Surgeons (RACS), the Royal Australian College of Obstetricians and Gynaecologists and the Royal Australian and New Zealand College of Ophthalmologists for their ongoing support
- the Victorian State Committee of the RACS and, in particular, its successive Chairmen Mr Andrew Cochrane (to June 2008), Mr Michael Dobson (to June 2010) and currently Mr Ian Faragher, for their great assistance to the Chairman and members of this council
- the Victorian Managed Insurance Authority for its interest in the VSCC, and financial assistance with the universal Victorian hospitals post-operative orders form project
- the health services and individual hospitals collaborating on the development and deployment of the universal Victorian hospitals post-operative orders form
- the Department of Health and, in particular, Ms Alison McMillan, Director; Statewide Quality, Safety and Patient Experience Branch, for her ongoing support, Ms Anne-Maree Szauer, Manager, Clinical Councils Unit, and Ms Katharine McAlpine and Ms Christina Gya, successive project officers of the VSCC
- the Director of the Victorian Audit of Surgical Mortality (VASM), Associate Professor Colin Russell, and VASM Project Manager Ms Claudia Retegan, for their dedication to continuing strong links between VASM, the Australian and New Zealand Audit of Surgical Mortality (ANZASM) and the VSCC.
SUMMARY

Over the three years from 2008 to 2010, the VSCC continued with its work aiming to improve the already high standard of surgical care in Victoria’s hospitals. We detect a growing surgical enthusiasm for knowing our surgical results, improving patient safety, and communicating professionally with the community.

Members of the council include surgeons, an operating room nurse, anaesthetist, pathologist, and management members, representing considerable expertise and experience across the surgical specialties and hospitals, both rural and urban. With the facilities of the State Department of Health (the department), and in collaboration with the Fellows of the Royal Australasian College of Surgeons (RACS), we are able to monitor surgical outcomes, advise on mandatorily-reported sentinel events, and assess de-identified referred cases. The participation of surgeons themselves reporting and assessing cases, with VSCC’s feedback to surgeons and trainee surgeons, offers a major opportunity for improving surgical awareness, safety and performance in the state’s hospitals. We trust surgeons receive such feedback in the constructive spirit in which it is offered. Knowing one’s own outcomes and striving to improve them are now professional obligations for all RACS Fellows.

In 2008 the monitoring of mortality under surgical care was transferred from VSCC to the Victorian Audit of Surgical Mortality (VASM), at the RACS, with a new three-year contract successfully negotiated in 2010. Many of these deaths are assessed as unavoidable, but in a small proportion there are issues requiring careful consideration and peer review to establish if the death was preventable or the care improvable. VSCC reviews de-identified cases and promulgates practice guides in the clinical areas requiring surgeons’ attention. VASM parallels the bi-national Australian and New Zealand Audit of Surgical Mortality (ANZASM).

As seen in this report, VSCC liaises with relevant stakeholders, and also undertakes a number of projects. A handy manual for interns, now into its 3rd edition, is distributed to the new interns around Victoria each January, and guides them in the immediate management of surgical emergencies. It is also popular with undergraduate medical students. The universal Victorian hospitals post-operative orders form has been developed at the Coroner’s recommendation, with wide consultation, and has now been offered to all health services.

The Surgical Outcomes Information Initiative (SOII) is a subcommittee, chaired by Mr Stephen Clifforth, which allows VSCC to look at data about selected operative procedures to compare the performance of de-identified health services with the state average. Feedback is provided to any hospital with an apparently outlying performance, inviting its examination of the circumstances and affording the opportunity for it to tackle any problems, and for VSCC to advise others of the risks and remedies.

Once again VSCC thanks all those surgeons who voluntarily report cases and events, who volunteer as assessors, and who contribute to their various specialty audits. As Chairman of VSCC, I especially thank my predecessor, Mr Jonathan Rush, AM, FRACS, who prepared the 2008–9 part of this report. The members of this consultative council work hard at meetings, studying reported cases and preparing practice guides, and I truly appreciate their help and expert guidance.

Surgeons’ continued interest and participation in VSCC’s activities are earnestly encouraged, as is frank discussion with peers, trainees and students about adverse events, problem areas and avenues to improvement.

Peter L. Field, FRACS
Chairman,
Victorian Surgical Consultative Council

Contacts:
Project Officer: Ms Christina Gya, email: vscc@health.vic.gov.au
Phone: 03 9096 1382
Postal address: GPO Box 4923 MELBOURNE VIC 3001
**COUNCIL MEMBERSHIP AS OF 30 DECEMBER 2010**

<table>
<thead>
<tr>
<th>Member</th>
<th>Specialty</th>
<th>Nominated by</th>
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<tbody>
<tr>
<td>Mr Peter Field (Chairman)</td>
<td>Vascular Surgeon</td>
<td>Melbourne Health</td>
</tr>
<tr>
<td>A/Prof David Allen</td>
<td>Gynaecologist</td>
<td>Mercy Health</td>
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<tr>
<td>A/Prof Richard Cade</td>
<td>General Surgeon</td>
<td>Eastern Health</td>
</tr>
<tr>
<td>Dr Heather Cleland</td>
<td>Plastic and Reconstructive Surgeon</td>
<td>Bayside Health</td>
</tr>
<tr>
<td>Mr Stephen Clifford</td>
<td>General Surgeon</td>
<td>Western District Health Service</td>
</tr>
<tr>
<td>A/Prof Bruce Davis</td>
<td>Cardiothoracic Surgeon</td>
<td>Australasian Society of Cardiac and Thoracic Surgeons</td>
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<tr>
<td>Dr Jane Fox</td>
<td>General/Breast Surgeon</td>
<td>Southern Health</td>
</tr>
<tr>
<td>Mr Tony Heinz</td>
<td>General Surgeon</td>
<td>Goulburn Valley Health</td>
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<tr>
<td>A/Prof Michael Henderson</td>
<td>General Surgeon</td>
<td>Peter MacCallum Cancer Centre</td>
</tr>
<tr>
<td>Ms Eleanor Hughes</td>
<td>Nurse Manager</td>
<td>Austin Health</td>
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<tr>
<td>A/Prof Rodney Judson</td>
<td>General Surgeon</td>
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<td>A/Prof John Mackay</td>
<td>Colorectal Surgeon</td>
<td>Epworth Eastern Healthcare</td>
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<td>A/Prof Ian McInnes</td>
<td>General Surgeon</td>
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<tr>
<td>Mr Peter Mortensen</td>
<td>Urologist</td>
<td>Goulburn Valley Health</td>
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<tr>
<td>Mr John Owen</td>
<td>Orthopaedic Surgeon</td>
<td>Northern Health</td>
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<tr>
<td>Dr Robert Rattray</td>
<td>Anaesthetist</td>
<td>Australian and New Zealand College of Anaesthetists</td>
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<tr>
<td>Dr Andrew Rosengarten</td>
<td>Emergency Physician</td>
<td>Australian College of Emergency Medicine</td>
</tr>
<tr>
<td>Prof John Royle</td>
<td>Vascular Surgeon</td>
<td>Royal Australasian College of Surgeons</td>
</tr>
<tr>
<td>A/Prof Colin Russell</td>
<td>General Surgeon</td>
<td>Peninsula Health</td>
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<tr>
<td>Dr Kevin Siu</td>
<td>Neurosurgeon</td>
<td>Neurosurgical Society of Australasia</td>
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<tr>
<td>A/Prof Dominic Vellar</td>
<td>General Surgeon</td>
<td>St Vincent’s Health</td>
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<tr>
<td>Dr Arlene Wake</td>
<td>Medical Administrator</td>
<td>Western Health</td>
</tr>
<tr>
<td>Dr Noel Woodford</td>
<td>Forensic Pathologist</td>
<td>The Victorian Institute of Forensic Medicine</td>
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</tbody>
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The following council members retired during the 2008–2010 triennium:

Mr Jonathan Rush, Orthopaedic Surgeon, Chairman
Nominated by the Royal Australasian College of Surgeons

Mr Ian Jones, Colorectal Surgeon, Deputy Chairman
Nominated by Melbourne Health

Prof Christopher Christophi, Hepatobiliary Surgeon
Nominated by Austin Health/University of Melbourne

Mr Roy Fink, Colorectal Surgeon
Nominated by St Vincent's Health

Prof Michael Grigg, Vascular Surgeon
Nominated by Eastern Health

Dr Kevin Holwell, ENT Surgeon
Nominated by Albury Wodonga Health

Mr John Laidlaw, Neurosurgeon
Nominated by the Neurosurgical Society of Australasia

Dr Heather Mack, Ophthalmologist
Nominated by the Royal Australian and New Zealand College of Ophthalmologists

Ms Marilyn Schroeder, Senior Nurse
Nominated by Mercy Health

Prof Bruce Waxman, General Surgeon
Nominated by Southern Health
OPERATION OF COUNCIL

Establishment

The VSCC was established in 2001 under the Health Act 1958, and is now a prescribed consultative council under Sections 33-43 of the Public Health and Wellbeing Act 2008. It functions within the Victorian Department of Health’s Quality, Safety and Patient Experience Branch, alongside the other two consultative councils on mortality and morbidity, in anaesthetics (VCCAMM) and obstetrics and paediatrics (CCOPMM). Since January 2008, the reporting and initial assessment of surgical deaths has passed to VASM, from which VSCC receives de-identified cases of concern or potentially improvable care to be reviewed.

Council meetings

Council meetings occur monthly, and involve discussion and planning of major projects undertaken in response to problems reported to council. Council’s major subcommittee, SOII also meets monthly.

In the three-year period 2008–2010, the council received cases of morbidity that surgeons voluntarily reported, as well as mortality notified to VASM and assessed as having potentially improvable care or outcomes. These cases were de-identified by the Chairman, discussed by members in council and followed up if necessary.

Council also considered cases that were reported to it through the:

- Sentinel Event Program,
- State Coroners Office and Clinical Liaison Service
- The Consultative Council on Obstetric and Paediatric Mortality and Morbidity

Data collection

Direct voluntary reports of significant adverse events or morbidity are received from surgeons and health services. Reports are received via a completed Confidential Initial Report – Form 1 (in Appendix 1, and available on the VSCC website: www.health.vic.gov.au/vscc. Case notification can also be e-mailed or sent via registered post.

Since the start of 2008, VASM has been notified of all deaths in surgical care, either by the surgeon or hospital team, or through the coroner’s office. Second-line assessments of cases where there are areas of concern in care, an adverse event or a potentially improvable outcomes are de-identified before scrutiny by VSCC.

Data from the mandatory reporting of surgical sentinel events is received in the form of root cause analyses made by the health services. These are considered at council meetings, to provide the department with clinical opinion on the conclusions and recommendations.

Existing data from the Victorian Admitted Episodes Dataset (VAED) is used to examine health service performance in relation to selected procedures. Clinical performances across the (de-identified) health services are compared, to allow identification of apparent outlying performers in comparison with the average across the state.

Reporting

All cases notified to us are de-identified before discussion by the VSCC, and all such information is protected by legislation. The quality and safety committees of various health services have continued to assist the reporting mechanism by coordinating the completion of Report Form 1 and VASM case notification forms, always with the permission of the treating surgeon.

All resulting information and advice is communicated to Victoria’s surgeons, including gynaecologic and ophthalmologic surgeons, and their trainee surgeons, health services and hospitals in a deidentified and educative way. VSCC uses regular bulletins and clinical practice advisory statements (informal clinical guides) posted on its website www.health.vic.gov.au/vscc and sent to surgeons and trainees. VASM also publishes case note booklets of illustrative case reports, to help surgeons with their non-technical, as well as technical skills, in patient management through the complexities of modern hospital care.
REPORTED CASES

Mortality

VSCC regularly receives cases identified by VASM assessors as involving an area of concern, an adverse event or a potentially improvable outcome. After VSCC review, a short report is sent to the VASM board who provides feedback to the treating/notify surgeon. Single cases or a cohort of cases allow the development of a clinical practice statement.

These reports are received in all the surgical specialties, and enthusiasm exists for gynaecologic surgery reporting and private hospital mortality reporting to be included in the next triennium.

Examples of identified issues, often occurring in combination, are shown here, and were used to generate VSCC clinical practice advisory statements. Those issued in 2008–2010 appear in Section 2 of this report.

Examples include:

- clinical handover
- time of day and its effects on surgery
- issues of peri-operative anticoagulation and venous thromboprophylaxis
- delayed diagnosis
- medical non-attendance
- delayed or inadequate therapy
- under- or over-zealous fluid therapy
- patient evaluation and selection for operation
- theatre unavailability and the separate scheduling of emergency surgery
- operative technique
- supervision of residents/registrars
- management of severe sepsis
- inappropriate patient transfer between hospitals
- retained swabs and packs
- misinterpretation of imaging
- failure to do patient observations
- malpositioned endovascular prostheses.

Surgical morbidity

The VSCC continues to receive voluntarily reported cases of surgical morbidity including serious adverse events and ‘near-misses’. The number of case reports remains very small and council seeks to improve this information gathering.

In line with the corrective value of near-miss analysis in airline systems, we believe reports from the operating surgeons and their hospital morbidity meetings are important. The lessons learnt could be made available for sharing with the wider surgical community.

A limited number of surgeons used the prescribed Form 1 (see Appendix 1) for directly reporting or referring morbidity, adverse events or near misses. Council agreed this form should remain available, despite the current preference of many surgeons to email their own report of case details.

Examples of identified issues are shown here, some of which have generated practice advisory statements to be found in Section 2 of this report.
Examples include
1. Case of a missed torsion of the testis requiring removal of the testis, in a five-year-old boy who had previously lost the other testis following an inguinal hernia repair operation.
2. Gauze swab retained in the pharynx following anaesthetic for tonsillectomy and adenoidectomy operation.
3. Central venous catheter insertion guidewire not removed, and embolised into the circulation.
4. Dislodgement of an endovascular stent graft following its implantation to repair an aortic aneurysm.

Other referred cases
Some mortality cases were reported to the VSCC as well as to VASM or to VCCAMM, for further consideration of their surgical component.

Examples include:
1. A patient who died following an abdominal hysterectomy, from respiratory failure due to an undetected proximal congenital muscle dystrophy.
2. Death due to an aortic dissection from the insertion of a Veress needle during a laparoscopy.
AUDITS OF MORTALITY UNDER SURGICAL CARE – VSCC VASM, AND ANZASM

In 2008 the monitoring of mortality under surgical care was transferred from VSCC to VASM, at the RACS. This is now in line with mortality audits in other states, now under the bi-national body – ANZASM. VASM’s further three-year contract between the department and RACS was successfully negotiated in 2010. VSCC looks to maintain the close relationship of our two bodies, in which the chairman of each contributes to the other’s meetings and activities.

VASM has a high level of participation by Victorian surgeons, as notifiers and assessors of case reports. Many of these cases are assessed as unavoidable deaths, but in a small proportion there are issues requiring careful consideration and peer review, to establish if the death was preventable or the care improvable. VSCC receives these assessments, and confirms their classification (see VSCC Classification Proforma, Appendix 2).

From reviewing such cases, de-identified, VSCC develops and promulgates practice guides in the clinical areas appearing to need surgeons’ attention (see Section 2 of this report).

VSCC also monitors the quality of second-line assessments by VASM volunteers, both in the course of our regular council reviewing, and in the annual audit of the assessments process which VASM conducts. This involves many council members invited blindly to conduct another second-line assessment of a case in their specialty, with full access to the hospital files, to ensure reasonable concordance and reliability of the VASM process.

VSCC values the cooperation of VASM Chairman, Prof Colin Russell, and Manager, Ms Claudia Retegan, and their staff, in providing appropriate case report material which informs this council. In general the VASM assessments received are of high quality and diligence. The absence of adequate detail in hospital notes, in particular notations by the surgeon, and the alarmingly low rate of autopsy to establish the precise cause of death in the surgical cases, continue to concern VSCC.
QUALITY IMPROVEMENT OPPORTUNITIES CONSIDERED BY VSCC

These included:

- recognition and handling of surgical emergencies in emergency departments
- cosmetic procedures
- live video transmission of surgery
- podiatric surgeons in hospital teams
- infant circumcision to reduce later heterosexual transmission of HIV
- after-hours surgery and its risks
- open discussion (disclosure)
- standard of medical notes in the hospital record
- inadequate fluid therapy
- the separate scheduling of emergency surgery (elective streaming)
- surgeon supervision of and communication with residents/registrars
- antibiotic and antithrombotic use
- documenting of family consultation
- wrong side/site operations
- retained swabs and packs
- lack of imaging reports in records, and misinterpretation of imaging
- failure to recognise and respond to patient deterioration
- consultant surgeon availability and handover.
The Sentinel Event Program has been in place since 1 July 2001. Health services must notify the department within three days of the event being reported within their service. From the date of notification, the health service involved has to investigate the event and prepare a root cause analysis within two calendar months. The report identifies causal and contributing factors, and a risk-reduction action plan to prevent further occurrence.

The department defines a sentinel event as a relatively infrequent, clear-cut event that:

- occurs independently of the patient's condition
- commonly reflects hospital system and process deficiencies
- results in unnecessary outcomes for patients.

More information can be found on the department’s website (http://www.health.vic.gov.au/clinrisk/sentinel)

In the past three years the VSCC has continued to comment on a number of sentinel events that were referred from the Sentinel Event Program for review and consideration. The majority of cases referred to the VSCC for opinion fell into the following categories:

- Procedures involving the wrong patient/body part
- Retained instruments or other materials after surgery requiring reoperation or a further surgical procedure, usually despite ‘correct’ intra-operative check counts
- Other catastrophic event
- Lacerated aorta during laparoscopic ventral hernia repair.

During the three-year period, a total of 59 sentinel event reports were referred for VSCC opinion:

<table>
<thead>
<tr>
<th>Year</th>
<th>Wrong place or part</th>
<th>Retained material</th>
<th>Other catastrophic event</th>
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</thead>
<tbody>
<tr>
<td>2008</td>
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<tr>
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<td>2010</td>
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GUIDELINES AND CLINICAL PRACTICE STATEMENTS – SUMMARY

The following clinical practice statements were developed, approved and promulgated on the VSCC website together with other periodic advice, previous publications and links. New statements are also mailed to all Victorian surgeons and trainees.

2008
- Key principles for the management of specimens for pathological diagnosis
- Correct site/side guidelines
- Acute mesenteric ischaemia
- Guidelines for emergency gastrostomy replacement with balloon tube
- VICNISS report summary for orthopaedic surgeons
- Diverting end stomas
- Nursing staff concerns over retained instruments
- Adverse events: immediate counselling for surgeons
- The use and care of quivers in the surgical setting – laparoscopic surgery
- Patients who self-discharge or refuse treatment

2009
- Code Crimson – A life saving measure to treat exsanguinating emergencies in trauma
- Incorrect Intraocular Lens (IOL) implantation
- Hand ischaemia associated with upper limb arterial procedures
- The use of trans-oesophageal echocardiography in cardiac surgery
- Soft tissue injury of the cervical spine
- Inter-hospital transfer of unstable surgical patients
- Correct level in spinal surgery
- Retained Raytec swab (gossypiboma)
- Venous thrombo-embolism prophylaxis
- Comment on post-operative bleeding and anti-coagulants
- Bariatric surgery
- Case of fat embolism following total knee replacement
- Documentation in the medical record

2010
- Clean hands save lives – hand hygiene in hospitals
- Clinical handover
- Laparoscopic vascular injuries – the Veress debate
- Endograft repair of abdominal aortic aneurysms
- universal Victorian hospitals post-operative checklist

These clinical guides are included in Section two of this report. They are also freely available on the VSCC website.
MAJOR PROJECTS

Surgical Outcomes Information Initiative (SOII)

This important subcommittee of VSCC uses existing administrative data for statistical analysis, leading to an opportunity to study selected procedures for variations in outcome across the state. Hospitals with apparently outlying performance are asked to validate their data, investigate their results and report their conclusions, and their action taken to improve patient care and outcomes of procedures. This novel use of discharge coding in the VAED serves as a model for other states.

During 2010, Mr Andrew Clarke from the SOII published ‘Investigating apparent variation in quality of care: the critical role of clinician engagement’ in the Medical Journal of Australia (193: S111-S113) citing the clinician-driven processes of SOII. He describes the critical nature of clinician engagement in the investigation of apparent variation in care, and in leading changes in care that arise from clinical outcome measures. Following one such study, as an example of apparent outlying performance, the hospital’s own investigation prompted action to improve surgeons’ practice and patient safety in their day surgery operating suite.

Discharge coding data of admissions to private hospitals are now also able to be compared, and their level of performance communicated to them for information.

For example, in 2010 the SOII subcommittee looked at the following:

- Haemorrhage following dacrocystorhinostomy
- Removal of wrong intraocular lens and replacement
- Mortality following repair of subcapital fractured femur in 80+ year olds
- Mortality following elective bariatric surgery
- Orchidectomy following admission with torsion of testis
- Colectomy: mortality, wound infection and transfer to a different hospital.

This work has enabled the council to identify the state mortality rate for each of the selected procedures as well as the mortality rate (in a de-identified manner) for each of the health services that have undertaken these procedures. It is pleasing to know that Victoria’s surgical outcomes are in accord with published world standards and clinical indicators.

Victorian hospitals post-operative orders form

This medical record page was promulgated to hospitals throughout the state, as an important surgical safety measure. It was recommended by the Coroner, to make it safer for nursing, surgical and anaesthetic staff working at several hospitals, or HMOs rotating to several hospitals, to prompt their writing and locating of vital orders. VSCC undertook to develop a universal post-operative order form and this work was carried out in conjunction with VCCAMM, the Alfred and other hospitals.

In 2010 the final version of the form was approved and introduced with a workshop and instructions for its adoption. The form is a structured checklist, and complements the WHO theatre checklist which has been fully endorsed by the department, the VSCC and RACS. It is important to minimise variations by individual hospitals since the essence of the form’s success is its standard, recognisable and instantly accessible format between hospitals. Specific requirements of a specialty, unit, procedure or anaesthetic are catered for on the reverse side of the page. (see Appendix 3).

It is anticipated that hospitals will take time to introduce the form, and that there may be modifications suggested. VSCC hopes to study the uptake of the form after 18 months.
Intern manual – The immediate management of surgical emergencies, 3rd edition

One of VSCC’s important projects is the production and distribution of this intern manual, and subsequently its evaluation. It has been generally well received by interns working in hospitals throughout the state. During 2010 a 3rd edition was prepared with some revisions and new topics. This will be available to all interns in January 2011, as a pocket-sized, green cover hard copy funded by the department and presented to the interns through the Post-Graduate Medical Council of Victoria (PMCV).

The intern manual is also available electronically on most hospital intranets and can be downloaded on to the intern’s PDA. It is used by both interns and students. VSCC plans to release the manual in a PDA version from next year, but also to continue to provide the handy printed version.
VSCC INTERACTION WITH OTHER AGENCIES

NHMRC Guideline Developers Network
VSCC is aligned with this body. Both seek to improve appropriateness of care, maintenance of professional knowledge and standards, and methods to monitor the uptake of guidelines. VSCC offers experienced clinical specialist perspective.

State Coroner
Justice Coate is considering more-timely access to preliminary autopsy findings of the coroner’s pathologist, to enlighten case evaluations by VSCC and the other clinical councils. Hospital surgical teams would also benefit from receiving such educative findings in time for their regular M&M meetings. VSCC supports e-depositions to the Coroner.

Victorian Quality Council, Standards Australia, AVANT, RACS and ACSQHC
These groups receive our input and support in areas of mutual clinical concern. For example, they are well equipped to explore, develop and promote risk management strategies for effective communication among healthcare professionals, handovers and disruption-related risk, and adoption of new technologies. VSCC has strongly supported the WHO operation checklist, Time-Out safety procedure in operating theatres, and WHO hand hygeine programs.

Department of Health’s clinical councils
The Public Health and Wellbeing Act now governing VSCC affords protection of council’s deliberations and information. This enables productive exchange of information between the VSCC, Anaesthetic, and Obstetric and Paediatric Councils.
APPENDIX 1: INSTRUCTIONS AND VSCC FORM 1 FOR REPORTING INCIDENTS OF SURGICAL MORBIDITY

Please complete and return to:

The Chairman
Surgical Consultative Council
GPO Box 4923
Melbourne 3001

Report forms may be accessed by contacting the consultative council’s secretariat on 9096 1382 or from the website www.health.vic.gov.au/vssc

Identifying information on this document is confidential to the Chairman of the Surgical Consultative Council. This enables the chairman to contact the reporting clinician should additional information on a reported incident be required.

Subsequent review by the full council is by case number only, as all identifying information is deleted prior to the full council reviewing an individual case of surgical morbidity.

Surgical morbidity refers to injury in association with or as a result of surgery. The Council encourages reports of any significant morbidity.

PLEASE COMPLETE DETAILS REQUESTED IN THE REPORTING PROFORMA OVERLEAF.
CONFIDENTIAL INITIAL REPORT – FORM ONE

On receipt of this preliminary report, a member of the council may either contact you for further information or send you a more detailed form for completion (Form two).

Date of report:   Case no (SCC use only):

IDENTIFYING INFORMATION IS CONFIDENTIAL TO COUNCIL CHAIRMAN

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<thead>
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<th>Patient’s name:</th>
<th>Hospital/health service:</th>
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<tr>
<th>Hospital UR no:</th>
<th>Name of person reporting:</th>
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<tr>
<th>Contact phone number of person reporting:</th>
<th>Qualification of person reporting (please circle one):</th>
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<tr>
<td></td>
<td>Consultant  Registrar  Other</td>
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EVENT SUMMARY

Date of admission:   Date of operation:

Date of recognition of morbidity:

Type of hospital: (circle appropriate category):

- Major teaching hospital
- Major suburban/regional hospital
- Country hospital
- Private hospital
- Other (please specify)

Age of patient:   Sex of patient:

ASA risk classification: (circle appropriate category):

- ASA 1 (A normal healthy patient)
- ASA 2 (A patient with mild systemic disease)
- ASA 3 (A patient with severe systemic disease)
- ASA 4 (A patient with severe systemic disease that is a constant threat to life)
- ASA 5 (A moribund patient who is not expected to survive without the operation)

Type of incident (circle appropriate categories):

- MORBIDITY
  - Pre-operative
  - Operative
  - Post-operative

- Nature of procedure:  Nature of event (tick appropriate box):
  - Elective  Expected
  - Emergency  Unexpected

Please specify procedure -

EVENT DETAILS

(please provide a narrative summary of the incident – use back of form if more space is required):

Opinion as to cause of incident:

Recommendation for prevention of similar incident:
A. Potentially avoidable (improvable) outcome

- Failure of communication
- Lack of timely involvement of experienced staff
- Inadequate resources
- Protocol breach
- Other (must be specified)

1. Preoperative
   1.1 Inadequate preoperative general investigations
   1.2 Inadequate preoperative specific condition investigation
   1.3 Incorrect or untimely diagnosis
   1.4 Inappropriate preoperative preparation
   1.5 Inappropriate treatment delay
   1.6 Other (specify)

2. Intraoperative
   2.1 Personnel issue
   2.2 Facility/equipment issue
   2.3 Other (specify)

3. Postoperative
   3.1 Deficient postoperative care
   3.2 Failure of problem recognition
   3.3 Other (specify)

B. Unavoidable outcome

- Expected
- Unexpected
APPENDIX 3: VICTORIAN HOSPITALS POST-OPERATIVE ORDERS FORM (2010) FOR UNIVERSAL USE

Victorian Hospitals Post-Operative Orders
Surgeon & Anaesthetist to complete

### Alerts: Patient Co-morbidities &/or Operative Events

<table>
<thead>
<tr>
<th>Yes (See Patient History for details)</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>List:</td>
<td></td>
</tr>
</tbody>
</table>

### Escalation of Care

- Make DIRECT contact with junior medical staff of the managing unit if reportable limits are met
- If no response, contact the unit registrar
- If no response, contact the consultant
- Discussion & outcome must be documented in the patient history
- If the patient's condition declines rapidly or meets MET criteria phone: for the MET team

### Managing Unit

Please tick ✔

### Patient Specific Reportable Criteria

If left blank default to met criteria

<table>
<thead>
<tr>
<th>Standard</th>
<th>Example MET criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovery as per hospital protocol</td>
<td>WARD: Every 30 minutes until stable Then Hourly for next 4 hours 4 Hourly for the next 24 hours</td>
</tr>
<tr>
<td>Oxygen</td>
<td>Commence NP L/min Mask L/min Report &lt; %</td>
</tr>
<tr>
<td>SaO2</td>
<td>Reporting SpO (&lt;90%) on Oxygen Systolic BP (&lt;90) Heart Rate (&lt;40) or (&gt;140) as above</td>
</tr>
</tbody>
</table>

### Specific Observations

- Neurological (MR - _ _ _ _)
- Vascular (MR - _ _ _ _)
- Chest Drain (MR - _ _ _ _)
- Other

### Surgical Care

<table>
<thead>
<tr>
<th>N/A</th>
<th>Wounds/Dressings: Leave intact until review Complex (see over)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Drains type/site Free Drainage</td>
</tr>
<tr>
<td></td>
<td>Suction Free Drainage</td>
</tr>
<tr>
<td></td>
<td>NGT Free drainage Aspiration (/24) Other</td>
</tr>
<tr>
<td></td>
<td>Unrestricted Spinal precautions (see over)</td>
</tr>
<tr>
<td></td>
<td>Restricted (see over) Head up: Degrees</td>
</tr>
</tbody>
</table>

### DVT Prophylaxis

- Compression stockings Pneumatic Calf Compressors Nil

### Medication prescribed per medication chart

- Antibiotics Steroids Regional analgesia Anticonvulsant
- Analgesia Antiemetics Recomence pre-op anticoagulant

### IV Fluids

- As per IV Fluid Chart

### Nutrition

- Full diet Nil by mouth /24 then
- Feeding tube TPN Oral fluids
### Specific orders

<table>
<thead>
<tr>
<th>Post Operative tests/referrals ordered</th>
<th>Please tick √</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Pathology</td>
<td>☐ Radiology</td>
</tr>
<tr>
<td>☐ Allied Health</td>
<td></td>
</tr>
</tbody>
</table>

### Specific surgical orders

<table>
<thead>
<tr>
<th>Completed by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation:</td>
</tr>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Time:</td>
</tr>
</tbody>
</table>

### Specific anaesthetic orders

<table>
<thead>
<tr>
<th>Completed by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Designation:</td>
</tr>
<tr>
<td>Date:</td>
</tr>
<tr>
<td>Time:</td>
</tr>
</tbody>
</table>

### Day Procedure Discharge Planning | Please tick √

<table>
<thead>
<tr>
<th>Discharge Prescription</th>
<th>Outpatients Appointment</th>
<th>Medical Certificate</th>
<th>Written Instructions</th>
</tr>
</thead>
</table>
When published or promulgated, these clinical practice statements contain the disclaimer:

VSCC guidelines/practice statements are intended to provide some broad statements of principle to facilitate the improvement and safety of surgical practice. They are not legally binding, nor do they provide a comprehensive analysis of every situation.
ADVERSE EVENTS: IMMEDIATE COUNSELLING FOR SURGEONS

Unfortunately all surgeons may experience adverse events occurring in patients under their care, or may be the subject of complaints or medico-legal claims. These disruptive life events are a significant source of stress.

Surgeons experiencing an adverse event or litigation may experience many emotions including guilt, distress, and anger. Surgeons’ thinking and behaviour can be affected to the point of erosion of self-confidence and wanting to give up medicine.

One of the means of coping with stress is immediate social support. This is often difficult to put into action at short notice. The surgeon may not know where to turn.

Options for a surgeon distressed by an adverse event to immediately obtain social support include:

- the head of unit
- a mentor
- a trusted colleague
- the Australian Medical Association Victoria Peer Support Service
- the Victorian Doctors’ Health Program
- the Royal Australasian College of Surgeons’ relevant specialty society
- the medical indemnity organisation to which the surgeon belongs
- the hospital chaplain.

Council believes that every surgeon should think about this now before a serious adverse event occurs and work out in advance who they would approach for support or advice.

VSCC Approved: May 2008

References


ACUTE MESENTERIC ISCHAEMIA

Acute mesenteric ischaemia is an uncommon but catastrophic acute surgical emergency. It carries a high morbidity and mortality. It represents a diagnostic challenge, and therefore a high index of suspicion is required, as patients often present with a paucity of physical signs despite severe abdominal pain. Suspicion should be heightened where risk factors exist – cardiac arrhythmias, past history of thrombotic events, B.M.I. 30+, smoker, thrombotic medication. Prompt diagnosis and aggressive management is required. If the diagnosis is suspected and there are signs of peritonitis or there is suspicion that some other urgent abdominal condition exists, urgent laparotomy is indicated. If these abdominal signs are absent further urgent investigations may help to establish the diagnosis before irreversible changes occur.

It is hoped that the following suggestions may help some patients to be treated successfully, although it is recognised that the majority of patients will be diagnosed too late for any successful intervention.

1. In a patient with symptoms of severe abdominal pain, vomiting, and/or diarrhoea, who on physical examination has few signs – suspect mesenteric ischaemia (bowel sounds are often present in the early stages).

2. When mesenteric ischaemia is suspected as a cause of the abdominal symptoms, obtain an urgent angiogram/CT angiogram.

3. When an angiogram confirms the diagnosis, undertake a vascular reconstruction urgently. Involvement of a vascular surgeon is indicated if available.

4. When a vascular correction (embolectomy or bypass) has been performed, obviously dead bowel can be resected and the ends brought out as stomata. Bowel of doubtful viability should be returned to the abdomen and a ‘second look’ laparotomy performed within 24 hours.

5. If angiography reveals venous thrombosis or non-occlusive mesenteric ischaemia, consider the use of anticoagulants or vasodilators.

Note: Acute mesenteric ischaemia is usually due to obstruction of the superior mesenteric artery. Access to the origin of this vessel is difficult, but is not necessary. Access can be obtained beyond the transverse mesocolon, that is, distal to the origin of the middle colic artery. An arteriotomy here can enable the passage of embolectomy catheters proximally and distally, or the attachment of a vein bypass from the aorta or a common iliac artery.

References


VSCC Approved: February 2008
A recent death in a patient undergoing bariatric surgery in regional Victoria was reviewed by VSCC. The discussion process raised questions as to the quality and safety aspects of bariatric surgery. As a document addressing some of these issues was being prepared by the Department of Human Services it was decided to await that document. The document has now been released and this is a critique of some aspects of that document.

The document, *Surgery for morbid obesity* was developed to provide a framework for the provision of bariatric surgery in the Victorian public sector. Although it is not an exhaustive review of techniques and outcomes of bariatric surgery it is however an excellent overview of what is required to provide a bariatric surgery service. This statement is not intended to critique the entire content, but rather to comment on the role of the document in setting standards for bariatric surgery in Victoria.

The VSCC would encourage all interested surgeons to read the document carefully including its appendices. There is an excellent bibliography.

The document has three main sections:

**Part A: Background and context**

The high prevalence of obesity in Australia is noted along with the predicted rise in that prevalence. The comorbidity associated with severe obesity (BMI > 35) and its impact on health care and life span are recorded.

It also noted that those with most severe forms of morbid obesity are often refractory to conservative management. Bariatric surgery has been shown to offer the best chance of significant and sustained weight loss in this group.

The demand for bariatric surgery has risen in Australia. Much of this occurs in the private sector due to limitations on public funding. It is acknowledged that the public sector has to increase the availability for, and provision of bariatric surgery.

**Part B: Framework for bariatric surgery program**

Bariatric surgery should be a part of, and supported by a multidisciplinary weight loss program. The need for a team containing physicians interested in obesity, dieticians, psychologists, anaesthetists and a surgeon skilled and experienced in bariatric surgery is stressed.

There are infrastructure requirements recognising the unsuitability of standard hospital equipment like operating tables, trolleys and toilets for coping with patients well over 100 kg. These requirements are listed in the document.

The indications for bariatric surgery in the public sector are addressed. These would seem to be standard and not controversial.

**Part C: Further research and evaluation**

Some limitations in the current evidence base on efficacy are acknowledged. Much of the data comes from overseas. There is little information on long-term outcomes. For this reason the Department of Human Services plans to ‘commission a formal evaluation of the implementation, appropriateness, usefulness and impact of the framework’.

It is also stated that ‘selected health services will be supported to strengthen their bariatric surgery programmes’. This implies that bariatric surgery will be focused in certain institutions with proven expertise.
Safety, quality and excellence in bariatric surgery

This is the primary interest of VSCC. This is not well covered in the document but reference is made to guidelines issued by the International Federation of the Surgery of Obesity and Metabolic Disorders. The guidelines list the institutional requirements and the necessary credentials for surgeons performing these procedures.

There are further requirements to be recognised as a (international) ‘centre of excellence’ for bariatric surgery. This has particular significance in the USA in regard to funding issues. It does seem likely that the Victorian Government may seek a similar model.

The VSCC supports the document published by the department and hopes that adequate credentialing of all surgeons undertaking bariatric surgery occurs through the Royal Australasian College of Surgeons (http://www.surgeons.org) or the Obesity Surgery Society of Australia and New Zealand (http://www.ossanz.com.au).

References


CASE OF FAT EMBOLISM FOLLOWING TOTAL KNEE REPLACEMENT (TKR)

The VCCAMM reviewed a case of a 61-year-old woman who suffered profound neurological deterioration after bilateral total knee arthroplasty. An MRI brain the next day showed changes pathognomonic of diffuse cortical fat embolism. The neurological deterioration occurred following the commencement of re-infusion of her blood using the Bellovac ABT system. The opinion was that the re-infusion of unwashed blood was the cause of the fat embolism.

Fat embolism complicating bilateral total knee replacement has been described in the orthopaedic literature especially in the 1980s. Dorr et al (1989) reported an incidence of 12 per cent and one death. They stated the usual manifestation of embolism was neurological change. Ozelzel et al (1998) reported two patients post hip arthroplasty who progressively lost consciousness some hours after initial satisfactory recovery from anaesthesia. One eventually died and post mortem showed embolic insult to the brain. In the second, MRI scans showed diffuse small changes in cerebral tissues consistent with fat embolism. This patient developed ARDS. She was also transfused intra-operatively with 300ml of washed, salvaged blood. Trans-cranial Doppler studies of patients undergoing hip and knee arthroplasty have shown all patients had intra-operative micro emboli (presumably lipid emboli). Cognitive decline after arthroplasty can occur in 30 per cent of patients. Fat embolism syndrome is only one of a number of factors causing cerebral dysfunction post operatively.

The aetiology of fat embolism syndrome remains elusive. Whether the trigger is embolic or a biochemical cascade has not been determined.

Having studied the literature, the fact that this patient succumbed to fat embolism after bilateral total knee replacement is perhaps not unexpected. The aetiology of the embolic insult could therefore be related to the surgery and not the re-infusion of her autologous blood.

There is a powerful logic to use autologous blood in orthopaedic surgery in particular with large volumes of blood collected in drains post-operatively. Re-infusion of autologous blood is effective in reducing the need for bank blood.

There is a powerful logic to use autologous blood in orthopaedic surgery in particular with large volumes of blood collected in drains post-operatively. Re-infusion of autologous blood is effective in reducing the need for bank blood.

The question as to the relative safety of washed blood compared to unwashed re-infusion has been studied extensively. Both have been considered safe with the unwashed blood systems being more cost effective. There are no reports of fat embolism syndrome related to the re-infusion of unwashed autologous blood.

There is only circumstantial evidence to implicate the ABT system in this case. The protocols for re-infusion require the use of a special re-infusion set (incorporating two filters (80 and 40 microns) and stipulate timing and maximum volume for re-infusion. There is no information that these protocols were adhered to or that the supplier was notified of the problem.

Recommendations

Surgeons remain vigilant to the potential of post-operative neurological deterioration from fat embolism syndrome.

Care should be taken with autologous un-washed blood re-infusion that protocols regarding timing, volume and correct giving are strictly followed

Future action

1) Monitoring autologous blood

Currently the only resource for surgeons and nursing staff to report problems with re-infusion is the company supplying the ABT set. Given the serious nature of this case and the implication that it was caused by re-infusion of unwashed blood, it seems appropriate to have an independent body collate and monitor problems. The blood bank has a reporting mechanism overseen by a medical panel to audit problems with bank blood. It seems reasonable to ask them to widen their monitoring role.
2) Research into fat embolism syndrome

Consider research into the use of trans-cranial Doppler monitoring of patients receiving un-washed autologous re-infusion. Research into cognitive disorders after arthroplasty is currently under way in at least one tertiary teaching hospital. It would be interesting to know if follow-up of such a group of patients includes MRI brain. Animal models of fat embolism have been used to assess the efficacy of venting the intramedullary canal on the incidence of emboli. Perhaps this model could be used to assess intra-cranial pathology in this syndrome especially given its worst effect is neurological rather than pulmonary.

References


VSCC Approved: November 2009
CLEAN HANDS SAVE LIVES – HAND HYGIENE IN HOSPITALS

Don’t be a vector, be an example! Ever since scrupulous Semmelweis, hospital infections remain a clinical challenge, and hand washing needs repeated encouragement.

The VSCC unreservedly supports recent campaigns such as the Clean Hands Save Lives program endorsed by the Clinical Excellence Commission of NSW. The series of articles in the MJA supplement (19 October 2009, Vol 191 Number 3) should be compulsory reading for all surgeons.

The World Health Organisation 5 moments for hand hygiene campaign is also applauded by this council, and by Hand Hygiene Australia. It aims to introduce a standard hand hygiene culture change program throughout all Australian public and private hospitals. The 5 moment’s poster is attached, and may also be found on the WHO website, together with the background and instructions for its use.

Such campaigns rely heavily on you, the surgeon, taking the lead, stimulating and supporting your hospital in introducing and validating its own program of hand hygiene compliance. The 5 moment’s poster is already in use in many wards and theatres. Enlist the help of your own quality and infection control staff.

And of course there is no point in using hand cleansers and hand washbasins only when a campaign is on. It must become our habit, visible to all students and staff, for them to emulate and develop as a lifelong habit.

Selected references:

2. MJA supplement (19 October 2009, Vol 191 Number 3)

VSCC Approved June 2010
5 Moments for Hand Hygiene

1. BEFORE TOUCHING A PATIENT
   When: Clean your hands before touching a patient and their immediate surroundings.
   Why: To protect the patient against acquiring harmful germs from the hands of the HCW.

2. BEFORE A PROCEDURE
   When: Clean your hands immediately before a procedure.
   Why: To protect the patient from harmful germs (including their own) from entering their body during a procedure.

3. AFTER A PROCEDURE OR BODY FLUID EXPOSURE RISK
   When: Clean your hands immediately after a procedure or body fluid exposure risk.
   Why: To protect the HCW and the healthcare surroundings from harmful patient germs.

4. AFTER TOUCHING A PATIENT
   When: Clean your hands after touching a patient and their immediate surroundings.
   Why: To protect the HCW and the healthcare surroundings from harmful patient germs.

5. AFTER TOUCHING A PATIENT'S SURROUNDINGS
   When: Clean your hands after touching any objects in a patient's surroundings when the patient has not been touched.
   Why: To protect the HCW and the healthcare surroundings from harmful patient germs.

Adapted from Hand Hygiene Australia www.hha.org.au

World Health Organization
CLINICAL HANDOVER

The VSCC commends clinical handover to surgeons as an essential component of care in the hospital system. Especially in need of our encouragement is the effective ‘shift-to-shift’ handover between junior medical staff.

Surgical outcomes considered by VSCC often involve improvable communication about new admissions, unstable patients, pending critical results and other patient updates.

**Face-to-face meeting allows the best handover**, including written or electronic memos. Having dedicated handover time and location works well for nursing shifts, but is seldom allowed for in surgical rosters and daily schedules. Establishing and supporting a handover culture will take commitment by surgical unit heads and hospital administrators. The approach will need tailoring to the individual unit or department.

VSCC believes that a well-structured clinical handover system is essential for the smooth running of a surgical unit, and for appropriate patient care. Surgical units should discuss the best mechanism for them. Ideally each shift hands over at least twice daily, scheduled before operating sessions, clinics or meetings. Senior surgeons must be involved: brief new junior staff about their obligations, allow them to take part at the dedicated times, and regularly ensure that shift change handovers are occurring satisfactorily.

The Australian Commission on Safety and Quality in Healthcare (ACSQHC) shares our concerns, and to help hospitals tackle the task it has developed the OSSIE handover guide. This stands for organisational leadership, simple solution development, stakeholder involvement, implementation and evaluation and maintenance. Don’t be deterred by the title, it will guide you in convincing your administrators!

The ACSQHC is also our ally in its aims to improve several other hospital areas, impressively outlined in its current update: preventing infection, communicating (open discussion/ disclosure), central IV line and medication safety, observation charts, recognising and responding to clinical deterioration. VSCC also plans to consider communication with consultant clinicians and during patient transfers.

**References**

1. ACSQHC Update, Issue 11, July 2010: www.safetyandquality.gov.au

*VSCC Approved July 2010*
CODE CRIMSON: A LIFE SAVING MEASURE TO TREAT EXSANGUINATING EMERGENCIES IN TRAUMA

The bottom line message from this article is ‘to facilitate the rapid transfer to operating theatres of massive exsanguinating trauma or vascular emergencies’. The authors – from St. Vincent’s Hospital in Sydney – aim for 20 minutes from arrival at the hospital to operating theatre.

The point is made that although resuscitation, monitoring and simple chest x-ray in the emergency department, any or each, take only a few moments, the combined affect can be significant.

Code Crimson is an emergency call and involves four steps:
1) Pre-hospital notification – by paramedics, ambulance etc.
2) Major trauma ‘page to trauma team’
3) The most senior clinician in emergency upgrades to a Code Crimson on arrival of the patient
4) Code Crimson relayed to surgical and anaesthetic team and operating theatres.

The authors quote six cases in the last 12 months where Code Crimson was called. The average time to theatre was 20 minutes 20 seconds. Two patients died and four lived – three of which were stab wounds to the abdomen and chest.

Directors of two major trauma centres in Melbourne were consulted and revealed that neither used Code Crimson but were aware of it. However, they did have appropriate call systems in place, which they used in instances of exsanguinating haemorrhage – sometimes with varying success.

This is not new and was introduced to Nepean Hospital and further popularised at Westmead in 1999.

This article highlights an important principal – that there is a group of patients that benefit from immediate (20 minute) transfer to a fully equipped operating theatre. There are practical considerations – size of hospital, availability of staff, availability of trauma teams and theatre accessibility but in major hospitals it must be worth consideration.

The situation needs not be confined to trauma – other vascular emergencies such as ruptured aortic aneurysm would be included, which would overcome the frustration of many surgical units regarding what they see as unnecessary delays in resuscitating a patient and investigating them in the emergency department.

In short it would be used for shocked patient with exsanguinating wounds or conditions.

Liaison with the College of Emergency Medicine and The Royal Australasian College of Surgeons would be worth consideration if it was considered that formalising such a process would be appropriate – keeping in mind that at least the two major trauma centres do have similar protocols although not under the Crimson Code.


VSCC Approved: February 2009
COMMENT ON POST-OPERATIVE BLEEDING AND ANTICOAGULANTS

VSCC receives reports of difficult to control postoperative bleeding in association with anticoagulant or antiplatelet therapy.

The introduction or resumption of such therapy before surgical haemostasis is secure remains a delicate balance of risks. Risks will be patient-specific, surgeon-variable, epidural anaesthetic- and operation-specific.

Short periods without anticoagulant may be reasonably safe even for some patients with cardiac arrhythmias, prostheses or stents, or for patients with past minor venous thromboses.

However some conditions represent a highly thrombotic state, such as recent pulmonary embolism, arterial embolectomy and thrombectomy, drug-eluting coronary stents, where the need for early anticoagulation may outweigh the bleeding risks.

In bridging therapy for such patients it may be safer to use titrated sodium heparin by intravenous infusion; which is shorter-acting, measurable, and reversible should haemorrhage require; or to introduce smaller and graded doses of the ‘easier to use’ low molecular weight heparins.

Surgeons should consult with the cardiologist, haematologist or intensivist to discuss the particular proposed operation, as well as the timing and indications for prophylactic or therapeutic anti-thrombotic drugs and other measures. The plan may then be modified in the light of the operation findings, procedure and daily patient progress.

References


VSCC Approved: November 2009
CORRECT LEVEL IN SPINAL SURGERY

The VSCC has recently reviewed a number of cases where the operation occurred at the incorrect level, mainly at the lumbar spine level, but also in the cervical spine.

Neurosurgical cases continue to top the list of malpractice suits in the USA, in particular spinal surgery. In a recent study by Mody et. al. a survey was sent to all members of the American Academy of Neurological Surgeons. Of the respondents, 50 per cent reported one or more wrong level surgeries during their career. Fifteen per cent had prepared the incorrect site at the beginning of the operation but rectified the problem prior to making the incision.

A prospective study (Ammerman et. al.) examined a single surgeon’s technique with 100 consecutive patients. The expected spinal level for surgery was prepared and draped. Intra-operative imaging was then utilised to correlate the spinal level. The wrong level was prepared 15 per cent of the time.

Factors predictive for incorrect site of surgery include increasing patient age and pathology above the L5/S1 level. Other factors identified in the literature include the surgeon’s experience, fatigue, unusual anatomy (e.g. lumbarised sacrum) and emergency theatre.

Guidelines for ensuring correct site surgery have been in place for many years. The recommendations from Mody et. al. are:-

- direct pre-operative communication between the surgeon and the patient
- marking of the intended site
- use of an image intensifier.

Multiple studies have identified intra-operative x-ray as the gold standard for preventing wrong level surgery. However, intra-operative x-ray has its limits, including:-

- congenital malformations, for example, lumbarised sacrum
- incorrect counting of relevant vertebral levels
- inadequate radiological visualisation (especially in large patients)
- failure to recognise the absence of the expected lesion at operative level.

Mohanial et. al. audited the use of pre-operative localisation of spinal level in lumbar microdiscectomy. Placement of a pre-operative marker and the use of intra-operative lateral fluoroscopy to identify this marker is the gold standard for lumbar microdiscectomy.

The following recommendations are made:-

1) Images available in operating theatre: MRI is not sufficient. Plain X-rays of the spine should be available in the theatre to clarify congenital abnormalities. CT scans can be confusing in this regard.

2) The spine should be marked before surgery commences, preferably with the patient positioned and the area prepared and draped but before the incision is made.

A needle is placed into the most likely spinous process (in the lumbar spine) and a lateral image intensifier used to confirm the level.

Some surgeons prefer pre-operative marking by the radiologist to identify the spinous process of the lumbar vertebra in question using methylene blue or other marker.

In the cervical spine with an anterior approach it is recommended that a needle be placed in the disc at the presumed correct level and an image intensifier used to check it is the correct level.
Similarly, in the thoracic spine, it is advised to use the image intensifier intra-operatively as well as counting up from the 12 thoracic vertabrae.

Whatever technique is used, mistakes will continue to occur – especially in the upper lumbar spine and thoracic spine region and it is important that the surgeon discusses this issue with the patient during the informed consent process.

References
CORRECT SIDE/SITE SURGERY

The council recognises the paramount importance of patient safety. Where surgery is performed, the surgeon is the team leader, and this is the ideal time to foster collaboration and teamwork.

There are many steps that lead to the performance of a successful surgical operation but the most important step, immediately before an operation commences, is the ‘time out’. This is the ideal time for surgeons, anaesthetists and nurses to check on standard matters such as correct patient, correct side and correct site but also to explain to other team members any expected or possible variations which may occur during the surgery and how they may be dealt with. The execution of the time out is the surgeon’s responsibility and they should view it as an ideal team-building exercise rather than a bureaucratic imposition.

The routine standard checklist may be dealt with on a whiteboard, slideboard, a printed form handled by the scout nurse, or some other means. The details of what should be on such a checklist will vary from one institution to another and from one specialty to another, for example, the size and side of a joint prosthesis is vitally important to an orthopaedic surgeon but totally irrelevant to a cardiac surgeon.

The checklist may be divided into three sections (sign in, time out, sign out) as recommended by the World Health Organisation. The use of this WHO checklist has been shown to reduce mortality and inpatient complications.

The checklist may be extended in individual specialities and individual hospitals to include additional items but must include, as a minimum, the items on the WHO checklist.

The checklist should contain checking of:

• consent and documentation
• marking of the site of the procedure
• others such as implants, images, antibiotic prophylaxis, VTE prophylaxis as appropriate to the particular specialty.

The time out (a final verification) may occur before induction of anaesthesia, but must occur before any incision is made.

A second time out may be called during the course of the operation if difficulty is being experienced or anticipated by surgeon, anaesthetist or nurse.

In emergencies all attempts to identify the correct side, site and person should still be made.

Surgeons and other staff are advised to take particular care with the details of the protocol when the order of an operating list is changed.

Trainees (surgical, anaesthetic, nursing) are often nervous about a time out, particularly if inexperienced in the procedure to be performed. Consultant surgeons should make an effort to stress to trainees the importance of time out as a team building exercise as well as an educational opportunity.

References

1. In Delta learning systems
DIVERTING END STOMAS

The use of a diverting end stoma is sometimes required for palliation in advanced pelvic malignancy, and occasionally for uncontrollable perineal sepsis, complex fistulas or faecal incontinence. The procedure may be done by open laparotomy or by a laparoscopic technique.

A potential hazard of the laparoscopic procedure is the inadvertent closure of the proximal instead of the distal segment of bowel with resultant mechanical bowel obstruction.

Confusion as to the orientation of the bowel is more likely in the presence of adhesions, which may lead to rotation of the segment selected for the formation of the stoma, though the presence of adhesions is not necessarily a contraindication for the laparoscopic approach.

In forming a sigmoid colostomy (which is likely to give the best functional result in this situation) the orientation of the bowel can be confirmed by tracking the colon distally to the recto-sigmoid junction. If doubt still exists the introduction of a colonoscope or inflation of air via a rigid scope can clearly identify the distal segment. With formation of a transverse colostomy or ileostomy tracking of the bowel towards the ileo-caecal junction should ensure proper orientation.

It is possible for the bowel to become twisted as it is withdrawn through the stoma opening and the risk of this can be reduced by prior marking of the proximal and distal segment with diathermy. A further check can be made by re-introducing the laparoscope. The bowel can then be divided and the distal segment dropped back into the abdomen, or alternatively the bowel divided prior to withdrawal of the proximal segment.

If there is any doubt as to the anatomy using the laparoscopic technique this should be abandoned and the procedure completed by performing a laparotomy.

This potential hazard should be kept in mind if the stoma fails to function post-operatively and the situation clarified by imaging after introducing contrast into the stoma.

VSCC Approved: March 2008
The VSCC has been concerned about the standard of documentation in the medical record made by all attending medical officers whether they be junior or senior. The problem is seen by those who look at the medical record for research reasons, for review of a case by the second line assessors for VASM and especially by those looking at the case notes when there are medico-legal issues. But even more importantly, it is seen on a daily basis by all those who read the medical record as they are involved in the routine ongoing care of the patient in hospital.

There needs to be a minimum standard for documentation in the medical record for all patients (in both public and private hospitals) in a concise and contemporaneous manner.

Accordingly, the following RECOMMENDATION is made to all medical officers when they make an entry in the medical record:

- The first line of the entry must contain FOUR (4) pieces of information:
  - the date
  - the time (24-hour clock)
  - the medical officer’s name (in capitals)
  - the medical officer’s position in the institution (e.g. OCT 27, 2009 20.43 hrs J.BLOGS: consultant surgeon).

- The medical details are then written in a concise manner with detail about the problem, the clinical findings, investigations to be undertaken, a possible diagnosis and a recommended treatment plan (if indicated).

- After making the entry, the medical officer must add their signature.

It should be stressed that this is not just a recommendation of the VSCC but is in both the RACS Code of Conduct and the ISBAR doctrine1.

References

ENDOGRAFT REPAIR OF ABDOMINAL AORTIC ANEURYSMS

When endograft procedures for abdominal aortic aneurysms first became available, an audit was carried out by ASERNIP-S for MSAC. Australian data released in 1999 confirmed the comparative safety of endografting. A longer-term follow up audit was published in 2006, followed by public funding. The 961 endovascular aneurysm repair (EVAR) patients showed 1.8 per cent procedural mortality and 60 per cent five-year survival. Patients with a pathological configuration, which made the available endovascular methods unsuitable, were treated by open operation. In patients with serious co-morbidities, the endovascular procedure was selected as it offered considerable advantages: their swifter recovery was balanced by seven per cent technical failures, and a five per cent need for re-interventions.

Whether to repair electively or to monitor?
The risk of rupture rises with increasing size. With a 5 cm diameter abdominal aortic aneurysm, in a relatively fit patient with a good prospect of living several years more, the patient is correctly advised that the risk of an operative procedure is less than the risk of leaving alone. Therefore, intervention is advised. With increasing aneurysm size, the risk of rupture rises. When there are significant co-morbidities, the risk of intervention may rise even more, particularly when the configuration of the anatomy presents technical problems. The correct advice to the patient may be NOT to intervene, but to monitor while the aneurysm diameter remains stable. The advice given to a patient will depend on the judgement of the surgeon in any individual patient. The VSCC wishes to remind surgeons that intervention in an abdominal aortic aneurysm of 5 cm or more should not be automatic, but that non-operative management should be considered.

Complex endografting involves extra risks
In recent years it has become possible to use modified endografts in circumstances where previously open operation was deemed necessary (for example, when there is visceral branch involvement or no neck to the aneurysm below the renal arteries). The placement of fenestrated or branched endografts in such patients and in vessels which are very tortuous requires greater skill and experience than in straightforward cases, such as those originally analysed in the ASERNIP-S study. The VSCC has recently considered two deaths which occurred when the endovascular graft covered and occluded both renal arteries. The VSCC therefore wishes to advise vascular surgeons that the insertion of such grafts should only be performed by surgeons experienced in their introduction. Where a less experienced vascular surgeon is to perform such a procedure, it should be done under the supervision, and with the assistance, of a vascular surgeon already experienced in this technique.

References

VSCC Approved June 2010
GUIDELINES FOR EMERGENCY GASTROSTOMY REPLACEMENT – REPLACEMENT WITH BALLOON TUBE

If an existing gastrostomy tube has fallen out, or been accidentally pulled out, the stoma will close quickly, often in the space of a few hours. The appropriate clinician should be contacted immediately and they may delegate the reinsertion of the tube. It is important that a tube is reinserted as soon as possible to prevent the stoma closing. If a gastrostomy tube is not available a urinary catheter can be used.

How long has the gastrostomy been in situ?
If this is less than six weeks a mature track may not have formed and the risks of inadvertently placing the replacement tube in the peritoneal cavity are high. A mature track can take many weeks to form in a malnourished patient. If there is a mature gastrostomy track, reinsertion of a balloon tube can be attempted.

Assessment of the removed tube and length of the track
If the removed tube is available:

a. What French gauge is the tube?
b. From the position of the external retaining piece on the tube, or the change in texture or colour of an older tube, it should be possible to estimate the length of the track.
c. If the tube was the first tube placed it may have a button end which, if forcibly removed, could have resulted in separation of the stomach from the abdominal wall. Any replacement tube should be checked radiologically or with a gastroscopy.

Tube reinsertion
1. Place the patient in a lying position or straight with the bed tilted head up.
2. Clean the external site with saline.
3. Lubricate the track with local anaesthetic gel.
4. Gently insert the tube through the track (Do not use any force). The track is often not perpendicular to the skin and the tube will not pass easily into the stomach. The direction of the track can be reassessed using a much narrower urinary catheter. Do not force it in. It should go easily into the track for at least 4 to 5 cms or at least the length of the track as assessed on the removed gastrostomy tube. For example, if the retaining piece on the old tube is at 3 cms the new catheter should be easy to insert to about 4 or 5 cms.
5. Once the direction of the track has been identified, insert an appropriate size replacement tube using gentle pressure in the direction of the track.
6. If the stoma has started to close you may need to use a narrower tube to keep the stoma patent in the short term.

If the track needs dilatation this should only be done by appropriately trained medical or surgical staff.

Inflation of the tube
Once the tube has been passed into the stomach it should rotate freely. The tube should be advanced at least 2 to 3 cms further in than the position of the displaced tube.
1. Inflate the balloon with water according to the instructions on or with the tube. Inflation should not cause pain.
2. Gently pull the tube back until there is resistance (when the internal balloon comes up against the stomach wall). The tube should still rotate freely.
3. Secure the tube in this position either with the external retaining piece on a gastrostomy tube or with tape to the skin if a temporary urinary catheter is used. Externally fixing the tube prevents the internal balloon being pulled into the pylorus or duodenum. If this happens it can result in gastric secretions or feeds being vomited or leaking around the tube.
Check tube position

If there has been any difficulty reinserting the tube, particularly in patients who cannot communicate well, its correct position should be checked with a gastrographing study or gastroscopy. Water or a test feed should be instilled into the stomach before the patient leaves the hospital.

Because of problems retaining a urinary catheter in the correct position a urinary catheter is not appropriate for long-term use as a gastrostomy tube. If a urinary catheter has been used, arrangements should be made for this to be changed to a gastrostomy tube as soon as possible.

VSCC Approved January 2008

(Prepared in collaboration with Dr Grace Chapman, Gastroenterology Department, Concord Hospital, NSW).
HAND ISCHAEMIA ASSOCIATED WITH UPPER LIMB ARTERIAL PROCEDURES

Over recent years, two cases of hand ischaemia following arterial surgery in the upper limb have been considered by the VSCC and the council felt it was appropriate to report these to all surgeons in the state.

(1) In 2005, a sentinel event was reported. The case concerned a 61-year-old female patient who required renal dialysis. The patient had diabetes and a number of co-morbidities. She did not speak English. An arterio-venous fistula was put in for dialysis. This was performed under regional anaesthesia. The patient developed significant ischaemia in her hand which was not initially recognised. The patient then required a thrombectomy but without success and ligation of the fistula was then performed. The patient subsequently developed ischaemic neuropathy, weakness of the right arm and developed a gangrenous ring finger.

(2) A more recent case was reported in a letter to the Editor of the ANZJS. The case involved a 53-year-old man admitted for elective drainage of the pancreatic pseudocyst. An arterial cannula was inserted in the radial artery. The cannula passed through the posterior wall of the artery at the first pass and the patient then developed a burning sensation and paraesthesia in the hand. The cannula was removed, pressure was applied and then thrombectomy was performed.

In the first case, a brachial AV fistula caused a steal syndrome and subsequent hand ischaemia.
In the second case, radial artery cannulation caused damage and thrombosis of the radial artery, fortunately corrected by thrombectomy.

Comments:-

• In reviewing the first case, Professor David Francis stated that the literature indicates that steal occurs in one to eight per cent of brachial fistulae and is more likely to occur in diabetics and elderly people more than others because of the presence of vascular disease.

• Radial artery cannulation should only be performed if non-invasive monitoring is considered insufficient.

• Care should be taken with patients with known vascular disease, smokers and those with coagulopathies

• Allen’s test should be carried out if possible.

• It is important to obtain full informed consent. This should be obtained by the person performing the procedure: that is the anaesthetist or radiologist. Sometimes arterial lines are inserted as a matter of urgency and no consent can be obtained.

VSCC Approved: Feb 2009
INTER-HOSPITAL TRANSFER
OF UNSTABLE SURGICAL PATIENTS

The VSCC was recently forwarded a report of a patient needing to be transferred to another hospital as there were no ICU beds available at the first hospital.

The patient had major intra-abdominal sepsis and a surgical opinion had not been requested at the first hospital. An urgent laparotomy was performed at the receiving hospital. Both pancreatic debridement and a right hemi-colectomy for ischaemia were required. The surgeon at the receiving hospital was of the view that the patient would have been better served had the laparotomy been performed prior to transfer.

The VSCC supports the view that any surgical patient requiring inter-hospital transfer for ICU support should be seen by a surgeon prior to that transfer. Where the patient has major intra-abdominal sepsis, bleeding or ischaemia it is often preferable to operate prior to transfer.

It is not possible though to be prescriptive about such matters as it will depend on the time critical nature of the problem at hand, the availability of surgical skills and theatre facilities, and the anticipated delay in transferring the patient.

Currently the VSCC is attempting to obtain local data as well as national data to support this view.

VSCC Approved: June 2009
INCORRECT IOL IMPLANTATION

A case of wrong intraocular lens (IOL) implantation during cataract surgery was recently reported to VSCC. The planned IOL was decided on the day of surgery, using the other eye biometry calculations, resulting in IOL of incorrect power being implanted in the operated eye.

Recommendations:

• A-scanning and keratometry are critical in lens calculations. Any previous refractive surgery must be considered. Biometry calculations should be performed on both eyes simultaneously and repeated if an asymmetric or unexpected result is obtained.

• Plan refractive outcomes pre-operatively. Ideally, the decision of which type and power of intraocular lens in each eye is made in conjunction with the patient, depending on their visual needs and preferences, at the time of informed consent. Informed consent is particularly important when there is a planned deviation from emmetropia or if a multifocal or accommodative IOL is to be used.

• It is the surgeon’s responsibility to follow RANZCO Correct Site and Side Guidelines, and to ensure IOL for implantation is included in time-out checks, preferably checking against original biometry calculations. Only the current patient’s checked IOL should be in the operating room during the procedure.

Vigilance and accurate documentation is required throughout the process of A-scanning, keratometry, IOL calculation, selection, ordering (if necessary), storage and implantation. Wrong IOL can occur at any of these stages.

VSCC Approved: April 2009
KEY PRINCIPLES FOR THE MANAGEMENT OF SPECIMENS FOR PATHOLOGICAL DIAGNOSES

1. Facility policy or procedure

1.1 All facilities should have a documented policy or procedure for the management of specimens. This document should reflect standards consistent with the professional colleges and Australian standards including the Royal Australasian College of Surgeons, Australian College of Operating Room Nurses, the National Health and Medical Research Council and Australian Standard 4187.

1.2 Orientation for all facility staff should include an introduction to this policy.

2. Protection of the handler

2.1 The handler should wear protective attire appropriate for the type of specimen.
   This may include but may not be limited to:
   
   - gloves
   - mask
   - protective eyewear
   - protective clothing

2.2 Where formaldehyde 10 per cent is used, it is desirable that the handler use this product in an area that has downward venting to minimise the effect of fumes. Small specimen containers may be pre-filled. Larger containers for specimens should be filled from a ‘wine-cask’ type container, which is fully and correctly labelled as containing formaldehyde 10 per cent. A chemical spill kit should be held in the area of use. All handlers should be familiar with the chemical spill protocol.

3. Handling and protection of the specimen

3.1 Specimens should be handled appropriately to avoid destruction of the tissue or fluid. Some specimens may be damaged by the use of forceps or similar instrumentation.

3.2 Raytec swabs have been commonly used by many facilities to protect tissue for pathology. In surgical procedures, Raytec swabs are accountable items and should not be permitted to be removed from the operative field. Where this practice continues, the facility should ensure that there is a procedure in place for documenting the inclusion of the Raytec swab in the specimen.

3.3 The handler should ascertain the need for the inclusion or absence of a protective medium for the transport of the specimen. This should never be assumed. There may be protocols in place for this in some clinical settings where the medical practitioner is not actively involved. Where the medical practitioner is present, the handler (nurse or technician) and the medical practitioner should confirm this.

3.4 Where formaldehyde 10 per cent is used, it should fully cover the specimen, a 1:3 ratio (specimen 1, medium 3).

3.5 An appropriate container should be selected for the transport of the specimen. This will be of sufficient size to avoid damage and if required, contain medium such as formaldehyde 10 per cent. The container should be properly sealed if containing formaldehyde 10 per cent to avoid leaking or spillage. The specimen may also be placed in a protective ‘hazard’ plastic bag designed for transport purposes.
4. Documentation

4.1 The specimen container should be fully labelled with patient details not limited to, but including: (if available, an adhesive hospital generated patient name label may be used)

- patient’s name
- date and time of collection
- full description of specimen (including laterality [fully written] if appropriate).

4.2 A process should be implemented to ensure that the correct patient details are attached to the specimen container and that they match the specimen request form. This may take the form of the circulating nurse checking this information with the instrument nurse either at the time of collection or prior to transfer to pathology.

4.3 A pathology request form should be fully labelled (as with the specimen) and completed by a medical practitioner.

4.4 A permanent record of the specimen collection should be maintained by the clinical facility, preferably at the point of specimen generation. Record details may include:

- full patient details
- full specimen details
- site of collection (e.g. ‘theatre 2’).

4.5 A record of the specimen collection should be recorded in the patient health information record. In the operating suite, this will include the perioperative or count record and should include as a minimum:

- number of specimens
- management/medium used for specimen (e.g. fresh, frozen, formaldehyde 10 per cent).

4.6 It is recommended that the operating surgeon also record details of the collection of specimens for pathological diagnoses.

5. Responsibility for the specimen

5.1 The facility should determine who will have responsibility for ensuring the specimen is transferred to the site for collection by the pathology service. (In some facilities this may include delivery arrangements.)

6. Storage

6.1 The specimen should be placed in, or taken to a dedicated area (as appropriate for the storage of the specimen [i.e. fridge or specimen trolley]) for collection by the pathology service. Where immediate transport/collection should occur (such as frozen section) this arrangement would be managed accordingly.

VSCC Updated: October 2008
LAPAROSCOPIC VASCULAR INJURIES –
THE VERESS DEBATE

In 2009 two cases with laparoscopic vascular injuries were reported to VSCC. In the first case, a 27-year-old woman had laparoscopy by a specialist gynaecologist using a Veress needle to establish the pneumoperitoneum. Major injury to the aorta and vena cava resulted, and despite prompt surgical intervention by the gynaecologist and a general surgeon, the patient died.

A second case was reported through the Sentinel Event Program. The patient had laparoscopy for ventral hernia repair. Instead of using the Hasson technique, the surgeon used a bladeless optical trocar, and injuries resulted to the inferior mesenteric artery and vein, and a lacerated aorta. This patient survived.

Azevedo’s 2009 meta-analysis of diagnostic or therapeutic laparoscopy found 42 major vascular injuries caused by the Veress needle in 696,502 procedures, and 17 major hollow viscera injuries. In 2005 Larobina and Nottle reported a series of 5,900 laparoscopies using the Hasson cannula, with no major vascular injury.

In 2002 the RACS’s ASERNIP-S (Australian Safety and Efficacy Register of New Interventional Procedures - Surgical) reported that, on then available evidence, it was not able to recommend one entry technique to be more complication-free than another. An ASERNIP-S ‘evidence essential’ update in 2010 includes Ahmad’s Cochrane review, and also concludes there is insufficient high-level evidence regarding the safety of the Veress needle and other entry techniques to determine the benefit of one over another. In lower-level studies, reports and consensus documents it is generally believed that the incidence of bowel injury is similar, and major vessel injury less frequent, with the Hasson or other open methods.

The Veress needle has long been used by many gynaecologists, while many surgeons prefer the Hasson or other open entry techniques. The obstetric and gynaecological colleges have recent guidelines on use of the Veress needle, and on preventing entry-related injuries. A randomised clinical trial of bladeless optical trocar versus the Veress needle is identified (XCEL). Meanwhile, for all surgeons due care remains appropriate with all entry methods, especially after previous abdominal surgery, and in very thin or morbidly obese patients. As ever, it is not just the instrument, it is how it is used.

Selected references:

7. Opilka et al. Open versus closed laparoscopy entry – which are the evidences. 2009 Hepato-Gastroenterology

Note: Veress 1903-1979: born Janos Veres, used both spellings, but his first publication on his needle was as Veress, and his memorial medal bears the inscription Veress.
NURSING STAFF CONCERNS OVER RETAINED INSTRUMENTS

The VSCC has recently studied a number of sentinel events involving retained instruments and issues with regard to the communication between the scrub nurse, scout nurse and the surgeon.

Council believes that it is important that all surgeons appreciate that nurses do not always feel empowered to speak up if they suspect an item has been retained in the patient.

Nurses should be thanked for alerting surgeons of their concerns, not criticised.

VSCC Approved: June 2008
PATIENTS WHO SELF-DISCHARGE OR REFUSE TREATMENT

The VSCC has had two recent cases for review where a patient has refused to remain in hospital for treatment, discharged themselves on their own volition, and subsequently died.

One example involves a male, who may have been a narcotic addict, admitted to hospital with a severe infection. After a short time in hospital as an in-patient, he discharged himself. He returned two days later with an overwhelming septicaemia and died.

Cases where patients refuse recommended treatment, or self-discharge, raise both professional and legal issues. Doctors may not force retention of patients in hospital for vital medical treatment, although it may seem, at an altruistic level, a good idea. Forced retention, either physically or pharmacologically, against the wishes of a competent patient, would be unlawful.

What is the doctor’s obligation? What can be done?

A competent patient is entitled to make decisions about their own medical treatment. If the mental competence of the patient is in doubt, then a professional assessment may be warranted.

Just as a patient is entitled to be told of the material risks of the treatment proposed, it is important that the doctor convey the material risks of not having the treatment. A patient who refuses recommended treatment, or seeks to discharge themselves from hospital, should be warned and advised of the risks they face in doing so. The patient should sign an appropriate discharge form (refusal of treatment certificate), and detailed notes should be made by the doctor as to the advice provided by the doctor, and the decision made by the patient. If the patient, despite the explanation, insists on discharging themselves from hospital, then they should sign the relevant discharge form and acknowledge that they are aware of the risks. If they refuse to sign a discharge form, then all details of the explanatory conversation should be recorded in the hospital record (and preferably signed by the doctor and a witness).

Despite the patient insisting on discharging themselves against medical advice, the patient must still be given appropriate medications and instructions, including instructions for return for review.

VSCC Approved: October 2008
RETIRED RAYTEC SWAB (GOSSYPBOMA)

Recently the VSCC reviewed a sentinel event where a Raytec swab had been left in the thorax at the time of aortic valve replacement surgery. Three months later the patient required emergency aortic arch replacement surgery for the removal of the retained Raytec swab and repair of an aortic pseudoaneurysm.

There is a small and developing body of literature on the issue of ‘surgical counts’ and ‘retained foreign bodies’. The problem of discrepancies in the surgical count is relatively common. In a recently reported series of 148 elective general surgical operations, more than 12 per cent had an intra-operative discrepancy in the count of which 50 per cent were due to sponges. Most discrepancies were due to a misplaced item (59 per cent) as opposed to a miscount (30 per cent) or a documentation error (38 per cent). This study found that each discrepancy took an average of 13 minutes to resolve. This issue of discrepancy in the surgical count is one that a number of hospitals are looking at as much from a patient safety perspective as improving efficiency and throughput.

In a review of the characteristics of retained objects, sponges were responsible for 68 per cent of the retained foreign objects and in 62 per cent of cases the count had been recorded as correct. Surprisingly intra-operative imaging found the missing object in only 67 per cent of cases. The study concluded that the surgical count was an inefficient way of detecting retained foreign bodies.

More recently in 2009, Wan et. al. estimated that retained foreign bodies occurred as infrequently as one in 5,500 operations. On reviewing methods of detecting foreign bodies it was found that CT scanning was the best method. It is clear from the literature that the radio-opaque band in swabs and packs can be overlooked on plain x-rays and mistakenly attributed to external sutures, pacing wires, valve rings and naso-gastric tubes. Sponges and their radio-opaque markers may be folded and twisted into unusual configurations that can be difficult to recognise even by trained radiologists. With time these markers get distorted or can disintegrate making recognition difficult. Factors that have been associated with retained foreign bodies include emergency procedures, lengthy procedures or an unexpected change in the procedure, multi-cavity cases, patients with a high BMI and prolonged operations. The operating room environment is also a potential risk factor including poor communication, inexperienced/untrained staff, a lack of co-operation between members of the team, interrupted counts, different nursing teams completing the pre and post operative procedure count and lack of a clear standardised count process.

It is clear that the surgical count involves time and effort and discrepancies are common. There are a number of technologies under evaluation to support surgical teams in performing counts and reducing the incidence of lost/retained sponges and count discrepancies. Bar-coding of the packs/swabs has been investigated in the only randomised trial of surgical counts. Another technology that is being evaluated is embedding electronic chips (radiofrequency identification devices (RFID)) such as the chips that are placed in books and clothes to prevent shoplifting and which are increasingly used within industry to monitor stock movements. Although an interesting concept, there are potential problems such as electronic interference, mechanical failure and failure to hold the scanner close enough to the pack containing the RFID.

It must be stressed that the surgeon is ultimately responsible for the safety of the patient. Good leadership and maintaining a professional and cooperative environment is a very important responsibility of the surgeon in ensuring the patient's safety.

To minimise the incidence of retained surgical foreign bodies and time wasted by count discrepancies, the VSCC makes the following recommendations:

1) There must be a clear policy on the performance of the surgical count, with appropriate documentation.
2) The operating room environment should encourage communication in a co-operative spirit between all members of the team.
3) Consideration should be given to foregoing the use of small Raytec or gauze swabs in favour of large packs which are less likely to be misplaced or miscounted.
4) The organisation of the operating room should included minimising the number of staff changeovers during prolonged procedures.
References


VSCC Approved: November 2009
Safe practice trauma guidelines recommend that all blunt trauma patients with a mechanism of injury having the potential to cause cervical spine injury should be immobilised at the scene with a hard collar and this should be continued during transport to emergency care.

Over the past 10 years, two different ‘decision rules’ have been independently developed successfully and trialled in prospective studies to aid clinicians in the selection of patients for cervical spine radiography and more rapidly rule out injury to the cervical spine using clinical assessment.

Both these decision rules relate to AWAKE, ALERT and COOPERATIVE patients who are able to participate in a clearance guideline.

The two different decision rules are:

1. NEXUS – National Emergency X-radiography Utilisation Study
2. CCR – The Canadian Cervical Spine rules

(Please see the VSCC website for more details about these two sets of rules or algorithms. Also see references below).

If after radiograph examination (including helical CT of the cervical spine), necessary under the decision rules, the cervical spine is ‘cleared’ of any significant bony injury (that is fracture, dislocation or ligamentous injury) the patient may be discharged home if there are no further injuries that need evaluation and treatment.

Hard collars should be used for all immobilisation with or without supports until cervical spine injury is excluded either clinically or radiologically.

Soft collars should NEVER be used in cervical spine trauma.

If, in the alert patient, radiographs or CT of the cervical spine show no significant abnormality but pain persists (depending on the location and severity) then delayed flexion/extension films or MRI may assist with the diagnosis.

In the interim period, a hard collar (e.g. Philadelphia collar) will be necessary until the neck can be comprehensively cleared. If these rules are strictly adhered to and these patients are NOT sent home in a soft collar because they have a sore neck it is believed the incidence of non-specific soft tissue sprain of the cervical spine will be minimised.

VSCC Approved: May 2009

References

THE USE AND CARE OF QUIVERS IN THE SURGICAL SETTING – LAPAROSCOPIC SURGERY

To eliminate the risk of generating an electrical burn to the patient through the inadvertent activation of an electrosurgical device intra operatively, the following approaches are recommended:

- The risks of housing electrosurgical devices and laparoscopic instrumentation together in one quiver should be discussed and acknowledged by all members of the surgical team.
- Where both an electrosurgical device and laparoscopic instrumentation are required to be located within easy access for surgeon use, separate quivers or compartments should be provided.
- The instrument (scrub) nurse must carefully monitor the placement of each instrument following use, to ensure separate housing of each.

The Australian College of Operating Room Nurses Standard 2008 (Electrosurgical Equipment Standard 5) provides guidance for the use of electrosurgical equipment with the following standard statements:

- All personnel shall be aware of the risks associated with use of electrosurgical equipment.
- An education program shall be established for the instruction of medical and personnel involved in the application and use of electrosurgical equipment.
- Equipment shall be routinely checked before use and undergo planned preventative maintenance.
- Use of electrosurgical equipment shall be documented.

Each standard statement heads further detailed advisory points for the use of electrosurgical equipment.

References


The Australian College of Operating Room Nurses Standards 2008.


VSCC Approved: August 2008
USE OF TRANSESOPHAGEAL ECHOCARDIOGRAPHY IN CARDIAC SURGERY

Over the past few years the VSCC has received reports of complications occurring as a result of the use of transoesophageal echocardiography (TOE) in cardiac surgery.

It was decided to refer the issue to the VCCAMM, which undertook a detailed study on the matter, briefly summarised here. The work has recently been published in the Journal of Cardiothoracic and Vascular Anaesthesia (reference listed below).

Conclusion from VCCAMM

A handful of international studies had defined the incidence of TOE-related complications as very low, of the order of three to four per 10,000 cases. Using the Australian Society of Cardiac and Thoracic Surgeons database between 2001 and 2007 financial years, the authors sought to define the local incidence and outcome from major oesophageal injury (tear or perforation) related to the intraoperative use of TOE, and assess any possible risk factors, such as age or sex.

The above figure summarises the key findings. Overall, the incidence of TOE-related complications was higher, at nine per 10,000, with a mortality rate of two per 10,000. Patients aged over 70 years had a relative risk of 3.7 compared to those under 70 (95 per cent CI 1.2-11.7). Women had a relative risk of 6.5 compared to men (95 per cent CI 2.0-21.1). Females over 70 had a relative risk of 22 compared to men under 70 (95 per cent CI 2-182).

It was concluded that older women have a substantially greater risk for TOE-related injury.

Reference:

VSCC Approved: June 2009
VENOUS THROMBO-EMBOLISM PROPHYLAXIS


The VSCC have reviewed the document and, in general, supports its contents. The guidelines are intended to assist clinicians in balancing the risks of death and serious morbidity from venous thrombo-embolism (VTE) against its complications and disadvantages of prophylaxis.

A VTE risk assessment should involve the following steps:

1. Assess the patient’s baseline risk of VTE, taking into account inherited and acquired risk factors.
2. Assess the patient’s additional risk of VTE, taking into account the reasons for hospitalisation.
3. Assess the patient’s risk of bleeding.
4. Formulate an overall risk assessment with consideration of VTE risks and bleeding risks.
5. Appropriate methods of thrombo-prophylaxis based on risk assessment.

This assessment can be carried out using a specific form which can be included in the hospital record or by use of an electronic risk assessment tool for VTE.

VSCC Approved: November 2009
Orthopaedic Surgeons are commended for their results in this 2007 report on hospital-acquired infections, VICNISS Hospital Acquired Infection Project Year 5 report–September 2007. N= Nosocomial, or hospital acquired. Key information for orthopaedic surgeons is extracted from the VICNISS report in this summary.

The report highlights Victoria’s surgical site infection rates for 2003-6, which are low. Of interest to orthopaedic surgeons, the report presents data on infection rates for over 18,000 total hip and total knee arthroplasties: 1-3% for knee arthroplasty (see Figure 10), 1-4% for hip arthroplasty. Figure 12 reveals the pattern of causative organisms, staphylococcus aureus still being most frequent.

The VICNISS project is based on an American model, and provides data on all Victorian Public Hospitals and maintains a 98 per cent participation rate. The coordinating centre for this data provides quarterly feedback to hospitals. Should infection rates, compared to the state average, be high the infection control staff will be contacted. If confirmed, the coordinating centre will also inform the hospital CEO and the Department of Health.

**Figure 10. Annual knee arthroplasty surgical site infection rates by risk category**

Figure 10 displays the knee arthroplasty surgery SSI rates since 2003. As can be seen and represented by ‘n’, most patients having knee arthroplasty fall into risk category 0 or risk category 1. The 2006 rate for risk category 0 has increased since 2005, but decreased in risk category 1. The more volatile rates in risk category 2 may be influenced by the smaller number of patients in this category, which is supported by the wider confidence intervals. Seventeen hospitals submitted data for this procedure.
The figures for hip arthroplasty are similar with surgical site infection rate of 3.5 per 100 procedures in low-risk category up to 4.3 in high-risk patients. Staph. aureus accounted for 55 per cent in 2006 but down from 75 per cent in 2003.

**MRSA**

Methicillin resistant staphylococcus aureus (MRSA) rates where stratified using the time the infection was detected within 48 hours or after 48 hours and by hospital size. In smaller hospitals there was a low rate of acquisition of MRSA and many of the MRSA infections were acquired elsewhere prior to admission.

**Surgical antibiotic guidelines**

The Therapeutic guidelines (revised 2006) general principles are used to assess appropriate choice, timing and duration of antibiotic (cephalothin 2 g, cephalozin 1 g or di/Flucloxacillin 2 g), at time of induction or within one hour of incision and with a duration of less than 24 hours.

The aggregate surgical antibiotic prophylaxis six-monthly rates of compliance with the Guidelines have improved in all specialty groups (except for hysterectomy). Compliance with antibiotic choice considered optimal or adequate for the specific operation is shown in Figure 18 (below), and antibiotic duration in Figure 20.

Figure 12 displays the frequency of causative organisms in SSIs following knee arthroplasty. Clearly, the most common organism is *Staphylococcus aureus*, and this has remained reasonably constant over the four years.
Figure 18. Surgical antibiotic prophylaxis compliance with guidelines: choice of antibiotics appropriate

Note: Total number of procedures: cholecystectomy (1629), Caesarean section (13,814), colon surgery (2115), orthopaedic surgery (13,155), cardiac surgery (4917), hysterectomy (1310).

Figure 18 shows the aggregate surgical antibiotic prophylaxis six-monthly compliance rates for 2003 to 2006. The compliance rates are based on the choice of antibiotics being considered optimal or adequate for the specific surgical procedure. As is demonstrated in this figure, there has been an improvement in compliance with guidelines for choice for all groups except hysterectomy.
Figure 20. Surgical antibiotic prophylaxis compliance with guidelines: duration of antibiotics appropriate

Note: Total number of procedures: cholecystectomy (1629), Caesarean section (13,814), colon surgery (2115), orthopaedic surgery (13,155), cardiac surgery (4917), hysterectomy (1310).

Figure 20 shows the aggregate surgical antibiotic prophylaxis six monthly compliance rates for 2003 to 2006. There has been an improvement in compliance with duration in all groups of surgery since 2003. However, for the last half of 2006, the compliance rate decreased for hysterectomy.
The future

This project team has an important role to play in international collaboration and research in this area. Surely the matter of arthroplasty infection requires the best brainpower and cooperation to protect one of the major surgical advances of our time. New software will enable data retrieval from existing hospital systems, minimising manual data input and allowing hospitals to write their own reports. Orthopaedic surgeons should work with VICNISS to identify specific risk factors.

For more information, or to read the VICNISS Hospital Acquired Infection Project, Year 5 report—September 2007), go to the Department of Health website at http://www.health.vic.gov.au/ideas/infcon/publications/vicniss or visit the VICNISS website at www.vicniss.org.au

2010 Update: VICNISS 2009 report further commends Orthopaedic and Cardiac surgery as generally showing best compliance rates for antibiotic prophylaxis, and Orthopaedic compliance with guidelines for appropriate choice of antibiotic stands out as superior to that for any other procedure group.