Risk factors associated with visual loss after spinal fusion surgery

One of the most devastating complications of spinal fusion surgery is visual loss, frequently caused by ischemic optic neuropathy (ION). The risk factors for ION have not been systematically evaluated with detailed perioperative data.

In this multicenter, case-control study, researchers with the Postoperative Visual Loss Study Group sought to identify risk factors for this complication. This is the first multicenter study to identify risk factors for ION patients compared with patients without ION.

The researchers compared 80 patients with ION with 315 control patients without ION after spinal fusion surgery.

Multivariate analysis revealed 6 significant, independent risk factors:
- male gender
- obesity
- use of a Wilson frame that places the head lower than the heart
- longer anesthetic duration
- greater blood loss
- decreased percent of colloid administration to replace lost blood.

The researchers concluded that prediction tables based on this study may help inform patients, surgeons, and anesthesiologists of the risk for patients developing ION, and guide decision making.


Performance of preop consults varies greatly among hospitals

Patients scheduled for surgery frequently undergo a preoperative consultation by internal medicine specialists. However, factors that determine which patients undergo a consult and the extent of interhospital variation are unclear.

Canadian researchers conducted this study to identify patient and hospital predictors of preoperative consultation.

A total of 204,819 patients 40 years or older who underwent major elective noncardiac surgery at 79 hospitals were included.

Results showed 38% underwent preoperative consults, and rates of consults varied considerably between hospitals—from 5% to 90%. These differences were not linked to the patient’s illness, risk of the surgical procedure, surgery volume, or hospital teaching status.

The researchers concluded that the hospital is the major determinant of whether patients undergo preoperative consultation. More research is needed to determine the basis for the substantial interhospital variation and which patients benefit most from the consults.

An accompanying editorial noted that as these variations are identified and compared to patient outcomes and complications, practitioners will begin to understand the optimal preoperative process for major surgical procedures.

Infection prevention

Higher bacteria counts on home-laundered OR scrubs

As a cost-saving measure, hospitals are allowing OR staff to launder their scrubs at home. The relative contribution of contaminated scrubs in the spread of nosocomial infections is not known. Few studies have compared the microbial flora or decontamination effectiveness of hospital-laundered and home-laundered attire.

The aim of this study from the University of Arizona, Tucson, was to identify and quantify types of bacteria found on unwashed, hospital-laundered, home-laundered, new cloth, and new disposable OR scrubs. Hospital-laundered scrubs were all processed in an industrial laundry facility. No details were known about home-laundering conditions.

Nearly 80% of unwashed scrubs were positive for some type of gram-positive cocci. Home-laundered scrubs had a significantly higher level of bacteria than hospital-laundered scrubs. There was no statistical difference in the total number of bacteria on hospital-laundered scrubs and on unused new and disposable scrubs.

The study did not test whether microbes were transferred to patients.

The researchers concluded that home-laundered scrubs had significantly higher bacterial counts than hospital-laundered scrubs.


http://www.ajicjournal.org

Verifying lumen claims of the Sterrad 100NX sterilizer

Low temperature H$_2$O$_2$ gas plasma sterilizers, such as the Sterrad 100NX, are being proposed as a new generation of sterilizers for thermolabile materials. According to the manufacturer, the Sterrad 100NX can adequately process single channel stainless steel lumens with an inside diameter of 0.7 mm or larger and a maximum length of 500 mm using standard cycle sterilizing conditions.

The aim of this Austrian study was to qualify the performance of the Sterrad 100NX under experimental settings representing worst case conditions.

Carriers inoculated with spore preparations of Geobacillus stearothermophilus were placed at the midpoint of specified lumens and submitted to flex scope (half cycle) sterilizing conditions. To simulate insufficient cleaning or crystalline residues, organic and inorganic challenges were added to the inoculated carriers.

For the unchallenged carriers, quantitative analysis reached a log$_{10}$ reduction rate of 5.71 or more, whereas qualitative results showed no growth in 24 of 30 biologic indicators tested in the flex scope cycle. All additional challenges significantly impaired the sterilization outcomes.

The researchers concluded that the findings emphasize the importance of

- a thorough validated cleaning process
- timing for cleaning and decontamination before a device is exposed to H$_2$O$_2$ sterilization
strict adherence to the manufacturer’s recommendations as specified in their user guide regarding the correct cycle (standard or flex scope) and permitted dimensions for the processing of medical devices with lumens.


http://journals.elsevierhealth.com/periodicals/ymi

OR efficiencies

Factors that influence length of surgery time

Extended length of surgery time can undermine patient flow in the OR, increase workload, and lead to inefficiency, increased costs, and length of stay for patients.

The goal of this study from Australia was to prospectively identify and describe factors that contribute to extending the length of operating time. A total of 160 planned and unplanned surgical procedures across 10 specialties during a 6-month period were included. Bivariate correlations and a standard multiple regression model were developed to describe associations between unplanned surgical procedures, interruptions, prebriefings, team familiarity, communication failures, and patient outcomes and deviation from expected operating time.

The mean expected length of operating time was 63.7 minutes, and the mean deviation from expected length of time was 22.4 minutes.

Of the variables entered into the regression model, the only significant predictor of deviation in expected length of time was the number of communication failures. Communication failures occurred in 91 of the 160 (57%) surgeries. The highest numbers of failures were observed in vascular surgery and neurosurgery (13.7%), while the fewest were in ophthalmology (4.6%).

The results have the potential to inform evidence-based interventions aimed at reducing the effects of miscommunication in the OR environment, the researchers concluded.


http://qualitysafety.bmj.com

Patient safety

Influence of experience on surgeon performance

Though complication rates can vary greatly during a surgeon’s career, the potential decline in performance
among very experienced surgeons remains unclear. In this multicenter study from France, researchers examine the association between surgeons’ experience and postoperative complications in thyroid surgery.

The study involved 3,574 thyroidectomies by 28 surgeons at 5 hospitals during a 1-year period. Patients were at higher risk of permanent complications when operated on by inexperienced surgeons and those in practice for 20 years or more. When surgery was performed by surgeons in practice for 20 years or more, the probability of permanent complications increased considerably.

Surgeons between 35 and 50 years of age had better outcomes than their younger or older peers.

The researchers concluded that surgeons’ performance varies over the course of their careers, and optimum performance cannot be achieved or maintained passively by accumulating experience. Factors contributing to poor performance in experienced surgeons should be studied further with larger populations of surgeons, in various settings, and other surgical specialties to corroborate a link between experience and performance.


Registries enhance safety monitoring of orthopedic devices

Reporting systems for adverse events and problems associated with medical devices have important weaknesses, such as incomplete, inaccurate, or nonvalidated data; reporting biases related to event severity; concerns that reporting may result in adverse publicity or litigation; and general under reporting of events.

Acknowledging the lack of credible data, the Food and Drug Administration (FDA) organized the International Consortium of Orthopaedic Registries. A May 2011 organizational meeting included representatives from 27 orthopaedic registries from 14 nations as well as stakeholders from other federal agencies and payers.

The combined registries will include data on more than 3,500,000 orthopaedic surgical procedures and will capture all implantable devices on the market.

Two major collaborative efforts are already in existence: the Nordic Arthroplasty Register Association and a collaboration between the Kaiser Permanente National Total Joint Replacement Registry and the Norwegian Arthroplasty Register for knee arthroplasty.

These collaborations serve as important pilot programs and showcase the potential of the Consortium to facilitate and further enhance existing collaborations.

Thirteen manuscripts from presentations at that meeting as well as an overview and summary and editorial are published in a supplement to the Dec 21, 2011 Journal of Bone and Joint Surgery.


Bariatric surgery linked to reduction in cardiovascular events, deaths

Studies show that obesity is associated with increased cardiovascular morbidity and mortality. Weight loss improves diabetes and other risk factors for cardiovascular disease, suggesting that weight loss might protect against cardiovascular events. However, solid evidence is lacking.

In this study, researchers with the Swedish
Obese Subjects (SOS) study examined the association between bariatric surgery, weight loss, and cardiovascular events. SOS is an ongoing, nonrandomized, prospective, controlled study conducted at 25 public surgical departments and 480 primary health care centers in Sweden. The study includes 2,010 obese patients who underwent bariatric surgery and 2,037 matched obese controls who received usual care, with a median follow-up of 14.7 years.

Compared with the control group, patients in the surgery group had lower rates of cardiovascular deaths (28 vs 49) and lower rates of first-time fatal and nonfatal cardiovascular events (199 vs 234).

The researchers concluded that compared with usual care, bariatric surgery was associated with a reduced long-term incidence of cardiovascular events and deaths.

An accompanying editorial notes that with the advances in understanding of pathophysiological mechanisms underling obesity, increasing evidence of links between obesity and outcomes, and progress and refinements in bariatric surgery, it may be time for the National Institutes of Health to convene an expert panel to provide updated recommendations for treatment of obesity.


Association of periOperative Registered Nurses

Recommended practices for medication safety. In its newly released “Recommended practices for medication safety,” AORN recommends against the use of multidose vials because of evidence that they pose a risk for cross-contamination. The guideline also recommends that IV solution containers be punctured as close as possible to time of use.

Both recommendations may be controversial because multidose vials are a cost-saving measure and not puncturing IV bags in advance may impact efficiency.

Endocrine Society

Management of hyperglycemia in hospitalized patients in non-critical care settings. All patients should have their blood glucose levels tested on hospital admission under a new guideline from the Endocrine Society. Observational studies report that 32% to 38% of patients in community hospitals are hyperglycemic. Hyperglycemia is linked to an increased risk of complications and mortality and is found even in nondiabetic patients.

The guideline has recommendations for practical and safe glycemic targets plus protocols and system improvements to achieve glycemic goals.
**Food and Drug Administration**

*Steris System 1 (SS1) Processor: Second 6-Month Extension for Health Care Facilities to Replace STERIS System 1 with a Legally-Marketed Alternative.* The Food and Drug Administration says customers currently using the Steris System 1 reprocessor may continue to receive SS1 sterilant and other support after Feb 12, 2012, but only if those customers have ordered replacement products for all remaining SS1s in their possession and have a completed a Certificate of Transition.

Requirements for the extension include:

- Complete and sign the Steris Certificate of Transition form.
- Provide the date the purchase order was placed for a replacement product and the proposed installation date.
- Return the completed Certificate of Transition to Steris.

All programs and support for the SS1, including sale of sterilant and accessories as well as service support, will expire no later than August 2, 2012. Steris will discontinue support for SS1 in the US on Feb 2, 2012, for customers who do not provide the completed Certificate of Transition.

[http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/ucm284779.htm?source=govdelivery](http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/ucm284779.htm?source=govdelivery)

**FDA collaboration to monitor rare eye condition associated with cataract surgery.** The Food and Drug Administration on Dec 20 announced a program to monitor devices used in cataract surgery to stem outbreaks of toxic anterior segment syndrome (TASS). The FDA is collaborating with the Centers for Disease Control and Prevention and the American Academy of Ophthalmology on the program, which includes:

- setting up a registry with AAO to collect information about cataract surgery devices and patient outcomes
- standardized methods to test for TASS-related contaminants
- an agreement with the CDC to collect and send samples from suspected TASS outbreaks to the FDA for analysis.

[http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm284239.htm](http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm284239.htm)

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**Health and Human Services Office of Inspector General**

*Hospital Incident Reporting Systems Do Not Capture Most Patient Harm.* Hospital staff didn’t report 86% of adverse events to incident-reporting systems, partly because they didn’t perceive the events to be reportable, according to a report by the Health and Human Services Inspector General released January 6, 2012. Examples of events not reported were deaths caused by health care-acquired infections such as septic shock and by excessive bleeding because of blood-thinning medications.

Among the report’s recommendations are that government agencies should develop a list of potentially reportable events, assist hospitals in using the list, and provide guidance to accreditation surveyors on assessing hospital efforts to track and analyze events.

Hospitals are required to track and analyze instances of patient harm as a Medicare condition of participation.


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