Masks Optional?

Do you wear a surgical mask when performing spinal anesthesia?

Is everyone in the room during a procedure required to wear a surgical mask?

Two healthy, young women (Patients A and B) were admitted to a hospital in New York in active labor within the same hour. The same anesthesia professional (Anesthesiologist A) performed a combined spinal-epidural anesthesia on both patients, and each patient delivered a healthy baby. Within 24 hours after receiving anesthesia, each patient experienced headache, back pain, and nausea, and Patient A also experienced vomiting and disorientation.

*Streptococcus salivarius* was identified in Patient A’s cerebral spinal fluid by polymerase chain reaction. Facility personnel conducted a 6-month retrospective review of postpartum patients who had received combined spinal-epidural anesthesia and identified a third patient (Patient C) who had also received spinal anesthesia from Anesthesiologist A, and who experienced headache, lethargy, confusion, and a possible seizure approximately 19 hours after initiation of anesthesia. *S. salivarius* was also cultured from her cerebral spinal fluid.

The hospital and the New York State Department of Health conducted an investigation. A nasopharyngeal swab from Anesthesiologist A grew coagulase-negative staphylococci. Anesthesiologist A reported routine use of masks during spinal anesthesia procedures, but staff members reported that the presence of unmasked visitors in the room during spinal anesthesia was common.

In an Ohio hospital, two young, healthy women (Patients D and E) were admitted in active labor within 3 hours of each other, and each received spinal anesthesia from Anesthesiologist B. Both delivered healthy babies, but within approximately 13 to 15 hours after admission, both patients experienced fever, nausea, and severe headache. Patient E became unresponsive and later died. The cause of death was meningoencephalitis caused by *S. salivarius*. Cultures collected from both patients revealed *S. salivarius*.

The Centers for Disease Control and Prevention and the Ohio Department of Health conducted an investigation. Cultures obtained from the oropharynx, buccal mucosa, and tongue of Anesthesiologist B were positive for *S. salivarius*. Interviews with personnel revealed that anesthesiologists at the hospital did not wear masks while performing bedside spinal procedures.

**TAKEAWAY**

Four of the five patients in these reports were confirmed to have developed meningitis caused by normal mouth flora (ie, *S. salivarius*), which suggests a breach in aseptic technique. At least some personnel or visitors in all these cases were not wearing masks. A policy that all personnel and visitors must wear a mask when present for high-risk spinal procedures might have prevented these occurrences of meningitis.

**Reference**

Contaminated Instruments

Do you inspect surgical instruments for contamination before use?

Do you treat the sterile field as contaminated when surgical instruments are found to be contaminated?

An increased rate of postoperative anterior cruciate ligament reconstruction infections (5 of 41 cases, 12.2%) was noted at a 205-bed Army medical center during a 14-week period. Demographic variables showed no significant differences between infection and noninfection groups. The center conducted a retrospective review of all anterior cruciate ligament infections for the past 6 years and found that outside the timeframe of the outbreak, infection rates were 0.3%. There were no violations of sterile technique documented in operative logs or nursing records in any of the identified cases, and the perioperative team had administered cephalosporin antibiotics before the start of the procedures.

All five of the patients returned to the clinic for symptoms of increased pain, effusion, or erythema of the operative knee. The surgeons performed sterile aspiration on the patients’ infected knees and sent the aspirate to the laboratory. All sterile aspirates showed white blood cells. A positive culture for coagulase-negative *Staphylococcus* was found in one patient and *S epidermidis* was found in another. All the patients had elevated serum white blood cell, C-reactive protein, and erythrocyte sedimentation rate.

The surgeons had used hamstring autograft with the same tibial fixation for all five procedures. The investigative team examined all the instruments of the fixation system and found biomaterial inside the cannula of the tibial fixation hex driver. They cultured the instruments and grew rare coagulase-negative *Staphylococcus*, rare *S epidermidis*, and very rare *Streptococcus mitis*. The institution had recently begun using this new fixation system, and the sterile processing team did not have a brush that was small enough to clean the cannula. Biomaterial had remained in the equipment between uses, affecting the sterility of the system.

**TAKEAWAY**

Instruments should be considered contaminated when found with organic material (eg, blood, hair, tissue, bone fragments) on or in the instrument. Flushing lumens alone may not be adequate to remove debris from cannulas. Organic materials and other debris may act as barriers that interfere with sterilization. Education on how to clean and sterilize these new instruments and inspection for contamination before use might have prevented these surgical site infections.

Reference