Whole blood has potential indications other than that of trauma, although current studies and greatest interest are focused on trauma. The U.S. military continues to use whole blood for some combat injuries, but the road to the return for its use in civilian practice will require a concerted effort by interested clinicians, such as Drs. Pitkin and Rice.

Richard B. Weiskopf, M.D., University of California, San Francisco, San Francisco, California. rbw@lisa.ucsf.edu

References


(Accepted for publication June 18, 2012.)

‘Evidence’ for Practice Guidelines for Central Venous Access?

To the Editor:

Although we applaud the American Society of Anesthesiologists (ASA) in the development of evidence-based guidelines and the effort and expertise of esteemed leaders of our field in their preparation, we are concerned with several aspects of the guidance section in the recently published practice guidelines for central venous access.1

The prologue to the guidelines emphasize their application to “anesthesiologists or health care professionals under the direction/supervision of anesthesiologists” (in the Focus section) and intent “for use by anesthesiologists and individuals under the supervision of an anesthesiologist” (in the Application section). As such, the dearth of level 1 evidence presented by anesthesiologists is disconcerting.

For adults, only one of the three presented studies for static ultrasound use for internal jugular access, and only one of the eight presented for real-time ultrasound use, are from anesthesiologists, incongruent to the preceding admonishment in the preamble. Examination of the referenced adult studies and their subsequent meta-analysis is disturbing for their heterogeneity, which does not necessarily reflect the practice of average ASA members, and is apparent as such in the ASA member survey responses.

The majority of the referenced studies (all fewer than 100 subjects) include hemodialysis and central line access by both nephrologists and interventional radiologists and multiple studies by nonanesthesia critical care physicians, including...
Removal of Central Venous Catheters

To the Editor:
The recently published Practice Guidelines for Central Venous Access provide a valuable resource for anesthesiologists who insert and maintain central venous catheters (CVCs). We commend the members of the American Society of Anesthesiologists Task Force on Central Venous Access for their efforts.

Although the guidelines deal extensively with insertion and maintenance of CVCs, there is no discussion of removal of those CVCs. There is considerable anecdotal evidence and a plethora of published case reports highlighting the occurrence of adverse events during CVC removal, including bleeding and venous air embolism. Venous air embolism, which occurs as a result of entrainment of air when an open vein is above the level of the heart, has the potential to result in cardiorespiratory compromise, devastating neurologic sequelae, and death. A failure to appreciate the potential for, and cause of, venous air embolism may result in improper practices during CVC removal. In some circumstances, inexperience, unfamiliarity, and lack of education or training may play a role.

Although there are many steps in the process of CVC removal, essential elements of the procedure include (for internal jugular and subclavian CVCs), positioning of the patient in the head down (Trendelenburg) position, having the patient perform a Valsalva maneuver as the catheter is being withdrawn, application of pressure to the catheter-entry site as the catheter is being withdrawn, placement of an air-occlusive dressing over the site after removal, and a period of postprocedure monitoring. If VAE occurs, interventions should include placement of the patient in the head-down, left-side-down position, administration of 100% O2, and appropriate cardiopulmonary resuscitation.

As part of an initiative to optimize and standardize practice with a goal of improving patient safety, our institution – similar to other medical centers – has developed and implemented a policy for removal of CVCs. In addition to the placement of written practice guidelines in appropriate locations on our internal Web site, a mandatory educational module for those who remove CVCs has been developed. Furthermore, we have incorporated essential supplies and informational materials into a “CVC removal kit.” These initiatives are being incorporated into our institutional global “CVC educational module” targeted at those who insert CVCs, but are also independently directed at those who remove but do not insert CVCs.

We appreciate the efforts of those involved in the production of the Practice Guidelines. We respectfully suggest that, when the guidelines are revised and updated in the future, a section relating to safe removal of carefully placed and carefully maintained CVCs be included.

Mark T. Keegan, M.B., M.R.C.P.I., M.Sc.,* Jeff T. Mueller, M.D. Mayo Clinic, Rochester, Minnesota. keegan.mark@mayo.edu

References
4. Heckmann JG, Lang Cj, Kindler K, Huk W, Erbguth FJ, Neudörfer B: Neurologic manifestations of cerebral air-