Need for emergency airway surgery for hard-to-intubate patients reduced

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Be prepared, that old Boy Scout motto, is being applied with great success to operating room patients whose anatomy may make it difficult for physicians to help them breathe during surgery, Johns Hopkins researchers report in a new study.

When patients undergo general anesthesia, they stop breathing on their own and anesthesiologists must quickly insert a tube into the airway as a first step in machine-assisted breathing. The researchers showed that a comprehensive program designed to help physicians quickly identify and treat anesthetized patients in which placement of this tube is difficult has dramatically reduced the need for high-risk emergency surgical procedures to open obstructed airways.

At the heart of the program is a rolling cart armed with most any supply a physician would need to navigate a difficult airway and restart breathing, from flexible scopes and long catheters to medications and a surgical airway kit, just in case. While it may sound simple, the standardized cart cuts out the need for operating room staff to race here and there during a crisis to track down the gear needed to get oxygen flowing again, says Lauren C. Berkow, M.D., one of the study's leaders.

"It seems an obvious solution, but it's not what people are used to doing," says Berkow, an assistant professor of anesthesiology and critical care medicine at the Johns Hopkins University School of Medicine. "People had to run to five different places to get the right equipment.

"The stakes are pretty high. Oxygen is vital. Time is of the essence. You want to make sure you have everything you need and know how to use it when that patient with an emergency rolls through the door."

During the four years before Johns Hopkins put its difficult airway program into place, an average of 6.5 patients a year needed to have their airways opened surgically. Over the 11 years that followed — ending in December 2006 — an average of just 2.2 patients a year needed the emergency procedure. In the past year, Berkow says, no patients at Johns Hopkins have needed unplanned emergency airway surgery.

The findings are published online and will be in the December issue of the journal *Anesthesia & Analgesia*.

The cart is but one part of Hopkins' difficult airway program. Doctors have been educated how to spot someone with a potentially life-threatening obstruction and how to use the items on the cart to properly deal with it. When it is difficult to put a breathing tube in place for a particular patient, that information goes into the patient's electronic health record so future providers will be aware of and prepared to deal with potential problems.

The decrease in the number of surgical airway procedures at Hopkins occurred despite an increase in patients reported to have a "difficult airway" as well as an overall increase in the number of patients receiving anesthesia per year, Berkow says. Airway-related deaths also declined after the initiation of the program, but the difference was not statistically significant because of the small numbers.

More patients are appearing with difficult airways, she says, as the population gets older, sicker and larger — all signals that inserting a breathing tube could be tricky. Presently, only one to 10 percent of

patients have difficult airways, Berkow says. A miniscule number of those will require surgical intervention — an incision just below the Adam's apple or into the trachea — to ensure air is getting into the lungs.

"We took disorganization and created an organized, standardized system, which we've continued to adapt and update as new technology comes out. We keep all of our staff updated on the system," Berkow says, "and we found it improves outcomes."

More information: www.anesthesia-analgesia.org/c … 013e3181b2531av1.pdf

Source: Johns Hopkins Medical Institutions