Study cuts Whipple procedure wound infections in half with new measures

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Thomas Jefferson University Hospital surgeons found that a carefully-selected surgical care check list of 12 measures reduced Whipple procedure wound infections by nearly 50 percent.

Smoking cessation at least two weeks prior to surgery, gown and glove change prior to skin closure, and using clippers over razors to shave the surgical area are some of the measures that helped reduced infection rates, according to the study published in the October 26 online issue of the *Journal of Surgical Research*.

In a retrospective study, Harish Lavu, M.D., assistant professor in the Department of Surgery at Thomas Jefferson University, and colleagues analyzed clinical data from 233 consecutive Whipple procedures -- also known as a pancreaticoduodenectomy, an operation to treat cancerous tumors of the pancreas. -- from October 2005 to May 2008 on patients who underwent routine preoperative preparation (RPP). That preparation is less comprehensive than the 12 measure surgical care bundle. For instance, it uses a razor for hair removal and iodine skin preparation and does not include smoking cessation.

They compared those rates to 233 consecutive Whipple procedures performed from May 2008 to May 2010 following the implementation of the surgical care bundle.

The researchers found a 49 percent reduction in wound infections in the surgical care bundle group (15 percent) compared to the RPP group (7.7

percent). The difference was statistically significant.

"It is typically quite difficult to achieve a 50 percent reduction in an adverse outcome," Dr. Lavu says. "We can make a significant impact on lowering wound infection in patients undergoing this surgery by using this set of guidelines."

Wound infection rates for Whipple procedures are historically higher and more common than in other procedures. Infections can be painful and require reopening the incision, which can ultimately leave scarring. Also, if an infection is not identified quickly, it can spread and patients can become very ill.

Two standout measures, Dr. Lavu says, are the gown and glove change prior to skin closure and intraoperative wound edge protection, which separates edges of the incision from contact with visceral contents, instruments and gloves during the procedure. And, like past studies have shown, using chlorhexidine-alcohol for skin preparation, instead of iodine, helps lower the risk of wound infections.

"The preoperative and post operative briefings alone, which are now being instituted in many American hospitals, reduce complications simply by improving communication among members of the health care team," Dr. Lavu says.

While some procedures at certain hospitals include a similar surgical bundle care, Jefferson's is the first one, to the author's knowledge, that has been implemented for pancreatic surgery.

"Now it is the standard of care here, and we are trying to move the surgical care bundle as it applies to other kinds of surgery, even in other departments at Jefferson," Dr. Lavu says.

The 12 measures that were implemented at Jefferson in 2008 and include:

-- Absence of remote infection
-- Preoperative smoking cessation
-- Pre-admission chlorhexidine-alcohol skin preparation
-- Preoperative clipper hair removal
-- Preoperative chlorhexidine-alcohol skin preparation
-- Preoperative antibiotic administration
-- Intraoperative would edge protection
-- Intraoperative glycemic control
-- Intraoperative temperature control
-- Gown and glove change prior to skin closure
-- Deep venous thrombosis prophylaxis and beta-blocker administration
-- Pre and post-operative briefings

Provided by Thomas Jefferson University