

# Robotic Surgery Safe For Complicated Pancreatic Procedures

A study suggests that robotic-assisted surgery involving complex pancreatic procedures can be performed safely in a high-volume facility, according to a report posted online that will be published in the March print issue of *Archives of Surgery*, one of the JAMA/Archives journals.

Complex pancreatic surgery remains the final frontier for use of minimally invasive procedures, the authors write as background information in the article. These operations present two technical challenges: controlling bleeding from major blood vessels and reconstructing ducts in the liver and pancreas.

"Despite recent data suggesting that complex pancreatic operations can be performed laparoscopically at high-volume centers, the use of traditional laparoscopic instruments has required that critical technical principles of open pancreatic surgery be modified to overcome the limitations of current technology," they continue. "Examples include limited range of instrument motion, poor surgeon ergonomics, reliance on two-dimensional imaging and reduced dexterity," the authors note.

Robotic-assisted surgery may help to overcome some of these difficulties, allowing difficult pancreatic surgeries to be performed with the safety and efficacy of open surgery but with the potential benefits of laparoscopic procedures, note Amer H. Zureikat, M.D., and colleagues at the University of Pittsburgh School of Medicine and Cancer Institute. The authors report their experience with 30 patients who underwent robotic-assisted pancreatic resection between October 2008 and February 2010.

The surgeries took between 327 and 848 minutes, with a median of 512 minutes, and patients lost a median of 320 milliliters of blood. The median hospital stay was nine days. In the 90 days following the procedure, there was one postoperative death. Eight cases of pancreatic fistula, an opening between the pancreas and other organs, occurred, only three of which were clinically significant. This rate is consistent with that observed in large groups of patients undergoing open procedures, the authors note.

Severe 90-day complications developed in 23 percent of patients, while less severe complications occurred in 27 percent. According to the authors, these rates are similar to those reported among patients undergoing open procedures and compare favorably to those of minimally invasive procedures.

"Robotic-assisted pancreatic surgery continues to evolve, and newer technologies

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may reduce operative times by minimizing the time associated with docking the robot as well as loading and extracting needles from the abdomen," the authors write. "Although no specific complications (pneumonia or prolonged ventilator dependence) were attributed to long operative times in this cohort of patients, larger series of patients and shorter operative times may demonstrate the underlying benefits of robotic-assisted surgery more convincingly."

These include shorter hospital stays, fewer wound and lung-related complications and decreased recovery time in the short term, as well as reduced rates of hernia and bowel complications in the longer term.

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