



New Study Finds Robotic-Assisted Lung Surgery Offers Improved Patient Outcomes Compared to Open Surgery

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SUNNYVALE, Calif., Nov. 4, 2013 (GLOBE NEWSWIRE) -- A new study comparing open surgery, video-assisted thoracic surgery (VATS), and robotic-assisted surgery to remove diseased lung tissue found that robotic-assisted surgery is associated with significantly lower death rates, lower overall complication rates, and shorter hospital stays compared with open surgery. Researchers also concluded that robotic-assisted surgery is an appropriate alternative to VATS.¹

The study was published in the October issue of *The Annals of Thoracic Surgery*, and evaluated different techniques for performing lobectomy (removal of a lobe of the lung) and segmentectomy (removal of a section of a lobe of the lung). These are common surgical procedures to remove portions of the lung that contain non-small cell lung cancer. Eighty-five to 90 percent of all lung cancer cases in the United States involve non-small cell lung cancer.² Lung cancer is the most common cancer worldwide.³

In a traditional open thoracic surgery, the surgeon makes a long incision in the patient's chest or side and spreads the ribs apart. In contrast, robotic-assisted and VATS procedures are minimally invasive and require only a few small incisions made between the ribs. Data presented by the authors shows that during the study period only 38 percent of patients received a minimally invasive VATS procedure, with the majority of patients receiving an open procedure.

Dr. Kent and his colleagues reviewed State Inpatient Databases and identified 33,095 patients in eight states who underwent open surgery, VATS, or robotic-assisted surgery. Compared to traditional open surgery, robotic-assisted surgery was associated with:

- Significantly reduced death rate (0.2 percent vs. 2.0 percent, $p = 0.016$)
- Shorter hospital stays (5.9 days vs. 8.2 days, $p < 0.0001$)
- Lower overall complication rate (43.8 percent vs. 54.1 percent, $p = 0.003$)

The results also indicated that the death rate, length of hospital stays and overall complication rate for robotic-assisted surgery were similar to or better than VATS.

Researchers noted the rise in use of robotic-assisted thoracic surgery in recent years. Robotic-assisted surgery increased over the study period, growing from 0.2 percent of all procedures in 2008 to 3.4 percent of procedures in 2010.

About Intuitive Surgical, Inc.

Intuitive Surgical, Inc. (Nasdaq:ISRG), headquartered in Sunnyvale, Calif., is the global leader in robotic-assisted, minimally invasive surgery. Intuitive Surgical develops, manufactures and markets the *da Vinci*[®] Surgical System. Intuitive Surgical's mission is to extend the benefits of minimally invasive surgery to those patients who can and should benefit from it.

About the *da Vinci* Surgical System

The *da Vinci* Surgical System is a surgical platform designed to enable complex surgery using a minimally invasive approach. The *da Vinci* Surgical System consists of an ergonomic surgeon console or consoles, a patient-side cart with three or four interactive arms, a high-performance vision system and proprietary *EndoWrist*[®] instruments. Powered by state-of-the-art technology, the *da Vinci* Surgical System is designed to scale, filter and seamlessly translate the surgeon's hand movements into more precise movements of the *EndoWrist* instruments. The net result is an intuitive interface with improved surgical capabilities. By providing surgeons with superior visualization, enhanced dexterity, greater precision and ergonomic comfort, the *da Vinci* Surgical System makes it possible for skilled surgeons to perform more minimally invasive procedures involving complex dissection or reconstruction. For more information about clinical evidence related to *da Vinci* Surgery, please visit www.intuitivesurgical.com/company/clinical-evidence/.

The friable nature of pulmonary tissue enhances the risk of vascular, bronchiolar, or other injury that will be difficult to control when using this device. Published clinical experience, as well as clinical studies performed to support this marketing clearance have demonstrated that even surgeons considered expert in laparoscopy/thoracoscopy have substantial learning curves of 10 to 12 cases.

All surgery presents risk, including *da Vinci* Surgery. Results, including cosmetic results, may vary. Serious complications may occur in any surgery, up to and including death. Examples of serious and life-threatening complications, which may require hospitalization, include injury to tissues or organs, bleeding, infection, and internal scarring that can cause long-lasting dysfunction or pain. Temporary pain or nerve injury has been linked to the inverted position often used during abdominal and pelvic surgery. Patients should understand that risks of surgery include potential for human error and potential for equipment failure. Risks specific to minimally invasive surgery may include: a longer operative time, the need to convert the procedure to other surgical techniques, the need for additional or larger incision sites, a longer operation or longer time under anesthesia than your surgeon originally predicts. Converting to open surgery could mean a longer operative time, long time under anesthesia, and could lead to increased complications. Patients who bleed easily, have abnormal blood clotting, are pregnant or morbidly obese are typically not candidates for minimally invasive surgery, including *da Vinci* Surgery. Other surgical approaches are available. Patients should review the risks of all surgical approaches and the risks of *da Vinci* procedures to decide if *da Vinci* Surgery is right for them. It is important to talk to your doctor about his/her surgical experience. For complete information on surgical risks, safety and indications for use, please refer to www.davincisurgery.com/safety.

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, including statements comparing robotic-assisted thoracic surgery to traditional open thoracic surgery and VAT surgery. These forward-looking statements are

necessarily estimates reflecting the best judgment of our management and involve a number of risks and uncertainties that could cause actual results to differ materially from those suggested by the forward-looking statements. These forward-looking statements should, therefore, be considered in light of various important factors, including those under the heading "Risk Factors" in our annual report on Form 10-K for the year ended December 31, 2012, as updated from time to time by our quarterly reports on Form 10-Q and our other filings with the Securities and Exchange Commission. Statements using words such as "estimates," "projects," "believes," "anticipates," "plans," "expects," "intends," "may," "will," "could," "should," "would," "targeted" and similar words and expressions are intended to identify forward-looking statements. You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this press release. We undertake no obligation to publicly update or release any revisions to these forward-looking statements, except as required by law.

¹ Kent M, Wang T, Whyte R, Curran T, Flores R, Gangadharan S. Open, Video-Assisted Thoracic Surgery, and Robotic Lobectomy: Review of a National Database. *Ann Thorac Surg*. 2013 Oct 1.

² American Cancer Society. "Lung Cancer (Non-Small Cell)". Available from: www.cancer.org.

³ World Cancer Research Fund International. "Worldwide Cancer Statistics". Available from: www.wcrf.org.

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