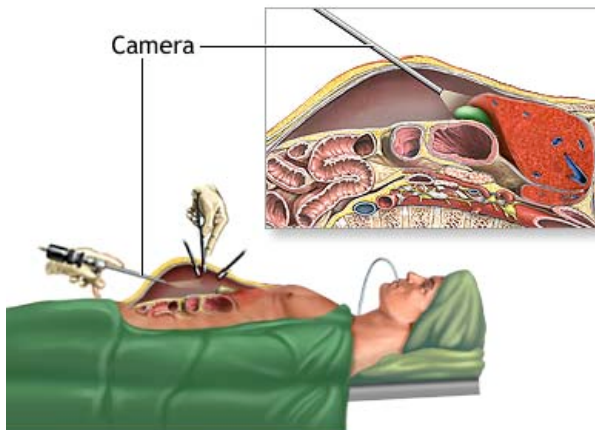


# Laparoscopic Surgery

David Pancarowicz  
University of Rhode Island  
ELE 282 Biomedical Engineering Seminar I  
September 30, 2007

Laparoscopic surgery is a medical procedure that incorporates a laparoscope, a telescopic instrument that has a camera attached to the end and is inserted into a patient through small incisions. Operations using this method are regarded as minimally invasive surgery due to its ability to utilize small incisions that range from 5mm to 15 mm. . After an incision is made the camera is inserted along with a second instrument that will inflate target area with CO<sub>2</sub> to create a large visible working area. The camera allows for a surgeon to enter the body of a patient without fully opening the abdomen creating a large amount discomfort.

Instruments involved in this procedure are all specialized to perform in the body. The light source for the camera is considered to be “cold” light for its ability of high intensity used to illuminate the work area.



ADAM.

Multiple other tools are used avoid a large scale surgery that would be required if this technology was not available. A surgeon can use “graspers” to position inside tissues and organs. Other implements are a clip applicator, scissors or a “fan like” implement to manipulate large organs to reach a desired work area.

This procedure can be used in multiple medical settings. Lung surgery benefits from this greatly because of its ability to pass in between the ribs rather than opening up the chest cavity. Gastric bypass surgery risks are lowered due to the minimally invasive nature of this procedure. Cysts, kidney stones, and biopsies of internal specimens can be accessed with laparoscopic tools with out the surgery being overly risky.



The advantages of laparoscopic surgery are what give the patient the lower risks in the operating room. Internal organs are exposed less to the outside preventing contamination and infection. Due to the less invasive measure of the surgery recovery time is greatly shortened and patient discomfort is much more bearable. Blood loss is more preventable and since the incisions are smaller scars are going to leave less of a long term impression on the patient.

Sources:

- <http://www.cts.usc.edu/faq-videoassistedthoracoscopicsurgery.html>
- <http://www.cts.usc.edu/videoassistedthoracoscopicsurgery.html>
- <http://healthguide.howstuffworks.com/laparoscopic-surgery-picture.htm>