



# World Laparoscopy Hospital

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## Introduction of Laparoscopic Surgery:

Laparoscopic surgery, also called minimally invasive surgery, Minimal Access Surgery, band aid surgery, or keyhole surgery, is a modern surgical technique in which operations in the abdomen are performed through small incisions (usually 0.5-1.5 cm) as opposed to the larger incisions needed in laparotomy. Keyhole surgery utilizes images displayed on TV monitors to magnify the surgical elements. Laparoscopic surgery includes operations inside the abdominal or pelvic cavities, whereas keyhole surgery performed around the thoracic or chest cavity is called thoracoscopic surgery. Laparoscopic and thoracoscopic surgery fit in with the broader field of endoscopy. There are a variety of advantages to the individual with laparoscopic surgery versus a wide open procedure. These include reduced pain because of smaller incisions and hemorrhaging, and shorter time to recover. Use of body cavities in order to undertake surgical treatments by other means than making a large cut has been a technique waiting for its time.

Laparoscopic surgical techniques are being put on an increasing number of surgical treatments. Patients are attracted to the reduced pain and faster recovery associated with the procedures, and surgeons have found that laparoscopic surgery matches traditional open procedures in terms of effectiveness.

## What is laparoscopic surgery?

Translated from the Greek, "Laparoscopy" means examination of the abdomen having a scope, which is also known as an Endoscope. When the procedure is done within the chest it is known as Thoracoscopy. An Endoscope in the bladder is cystoscopy and in the uterus is hysteroscopy and so on. The other terms used are key-hole surgery and laser surgery.

Explaining laparoscopic surgery is best accomplished by comparing it to traditional surgery. With traditional or 'open' surgery, choices must make a cut that exposes the area of the body to become operated on. Until not too long ago, opening your body was the only method a surgeon could carry out the procedure. Now, laparoscopy eliminates the requirement for a sizable cut. Instead, choices use a laparoscope, a skinny telescope-like instrument providing you with interior views from the body.

Although laparoscopy has been utilized for several years by gynaecologists to evaluate pelvic pathology, most surgeons did not recognize its value until laparoscopic gall bladder operation was done. Ever since then, the use of laparoscopic instruments and methods has greatly

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improved, and new uses are being developed rapidly.

### **What is Minimal Access Surgery and Non-invasive Surgery?**

As utilization of telescope and fine instruments, spread with other areas of the body, a new terminology was necessary. Strictly speaking laparoscopy is only for that abdomen. Hence the above terms which mean exactly the same emerged as an umbrella name under which all endoscopic / telescopic along with other surgery might be done in today's world lowering the cuts and trauma towards the body wall.

How is laparoscopic surgery done?

During laparoscopic surgery, laparoscopic surgeon make a small 10mm cut in the skin at the belly button. Then a cannula is introduced among the muscle fibres without cutting any of the muscle. Through the cannula, the laparoscope is inserted in to the patient's body.

Laparoscope is equipped with a little camera and lightweight source that permit it to transmit images through a fibre-optic cord to some television monitor. The television monitor shows a higher resolution magnified image. Watching the monitor, choices are capable of doing the process. Acquire the best inside the patient, further 5mm or 3mm diameter cannulas are put in based upon the process e.g. yet another for a diagnostic laparoscopy, two more for groin hernia repairs and three more for any laparoscopic gallbladder operation. Instruments are introduced with the cannulas and the operation is conducted exactly as one would did exactly the same procedure at an open operation. All fundamentals of surgery are strictly followed during laparoscopic surgery.

Lately single incision laparoscopic surgery (SILS) originates up where all instruments are introduced using it. By single Incision laparoscopic surgery many but not all procedures can be achieved in selected patients that way. Recently robotic surgery is also been done by same incision as laparoscopy. In da Vinci robotic surgery precision of surgery is much better.

### **What are the advantages of laparoscopic surgery?**

One of the biggest advantage of laparoscopic surgery is that the recovery time in the immediate post-operative period is quicker. Patients often go home after only 24 hours to recover in the comfort of their own home. The small incisions tend to be less painful and patients often need less postoperative pain medication as a result. Fewer wound infections occur. The cosmetic results are also appealing as the scar is limited to three or four skin incisions that are less than one half inch long. The most typical question asked is whether laparoscopic surgery another cosmetic operation, the benefit of that is restricted to the bikini wearing public. There are lots of more advantages of this procedure:

1. There is no cut in the muscle because the holes are made in between your fibres.

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2. The pain is minimal like one would have following a skin cut.
3. Less possibility of hospital acquired infections.
4. Fewer post-operative chest complications.
5. Early return to work.
6. No residual weakness.
7. Minimal risk of incisional hernias.
8. Less disturbing to normal physiology.
9. During hernia operations, already weak muscles are not cut, as would have been the case in open surgery.
10. Exploratory 'open & close' look into the tummy operations are avoided and also the same information is gained on diagnostic laparoscopy like a day case patient with one or maximum two holes.

Avoidance of big cuts and rib removals and sternotomy in thoracoscopy when it comes to thoracoscopic surgery. In the case of diagnostic laparoscopy, quick details are gained and also the entire process could be documented on video and additional opinion can be obtained from other surgeons in case of a diagnostic dilemma.

Despite small holes, there isn't any compromise in neuro-scientific vision. Much more of the 'insides' is visible than can be done in an open operation. Unlike the 'mini-incision' operations, here the entire tummy could be visualised ensuring no abnormal anatomy or pathology is missed.

### **How would be the laparoscopic operations done?**

One of the most commonly performed surgery by laparoscopic cholecystectomy. Throughout a laparoscopic gallbladder operation, the assistant surgeon grasps the gallbladder and also the surgeon frees its duct and artery. These are then clipped or tied off and the gallbladder removed from the liver bed. After ensuring that there isn't any bleeding or injury, the gall bladder such as the stones is taken away and among the cannulas. Your skin is closed with absorbable sutures. Patient will be able to go home in 12 to 24 hours after laparoscopic surgery.

One of the other surgery performed by laparoscopic general surgeon. During a laparoscopic hernia repair, three holes are created in the level of the navel and also the hernia reduced. A non-reactive mesh is put over the hernia defect site and fixed in place. The approach to the hernia is not through already weak muscles as is the situation with open hernias hence chances of recurrence are less. The greatest advantage of laparoscopic surgery for hernias is in patients of recurrent hernias in which the anatomy has already been disturbed and also in patients of hernias on sides, as they can be repaired through the same three holes avoiding any further pain or trauma.

In many of the patient's pain abdomen where a cause cannot be found after a many investigations, a diagnostic laparoscopy can offer rapid answers. The individual with doubtful appendicitis is best evaluated laparoscopically and patients with suspected TB or Cancer abdomen could have a laparoscopic biopsy from the lymph nodes or perhaps an intestinal

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biopsy to make a quick and objective pathological diagnosis.

Another established laparoscopic procedures in present era include bariatric surgery, strategy to ovarian cysts, hysterectomy, hiatus hernia, peptic ulcer surgery, intestinal resections, direct vision liver biopsy, division of adhesions, laparoscopically assisted intestinal resections, myomectomy, radical hysterectomy, colorectal surgery, repair of vault prolapse etc. and some of the thoracoscopic procedures are for achalasia cardia, cysts, lung biopsies etc.

### **Few commonly asked Questions about laparoscopy:**

#### **Q. Would you only remove the stones from the gallbladder in laparoscopic cholecystectomy?**

A. No, the gall bladder is removed completely together with the stones the same as it would will be in an open operation.

#### **Q. How that much big gallbladder can it's removed from such a small hole?**

A. Human body includes a great capacity to stretch. The small 10mm holes during laparoscopic surgery can stretch quite easily without any injury to your body.

#### **Q. How's gallbladder is disconnected from the liver and ducts?**

A. The ends of gallbladder with liver are clipped with titanium clips or ligated, the titanium industry non-reactive element. The security and superiority of titanium continues to be proved over 50 years in the use for a number of purposes in the body in whole world.

It's also possible to tie these structures as it is performed during conventional open surgery. This procedure of suturing is a little more difficult technically and at present is being done by few experienced surgeons only who are doing advanced laparoscopic surgery, that is going to become the standard method these days.

#### **Q. What's the recovery period during laparoscopic surgery?**

A. The individual patient can begin drinking liquids right after few hour coming out of the anaesthesia that is about 4 hours after the operation. They are able to start eating soon thereafter. The individual is allowed to get off from the bed 4 hours following the surgery and walk towards the toilet to pass urine. They are usually allowed to go back home the next day, can climb stairs and the majority could possibly get back to routine activity in five days and to operate in about ten days.

#### **Q. Is laparoscopic operation safe in a fat patient?**

A. The laparoscopic or da Vinci robotic procedure is ideally suited for body fat patient as the

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thickness of the tummy wall is immaterial when investing in the telescope and instruments. This really is as opposed to an open operation where the fatter patient has a deeper and larger cut causing more bleeding, stitches, and pain.

**Q. Could laparoscopic surgery is more dangerous for patients along with other medical conditions like diabetes and blood pressure?**

A. No. On the contrary to open surgery, the lack of any major cuts towards the body causes minimal disturbance to the physiology in laparoscopic surgery. Even the early mobility and go back to normal diet makes it simple for the body to recover.

**Q. Is the any danger from the telescope within the body in laparoscopic surgery?**

A. No, the telescope can be used only to see and is not associated with the operation. Other instrument used in laparoscopic surgery always remain under vision of surgeon. Surgeon will take care that these other laparoscopic instrument should not harm the patient.

**Q. Can there be a heightened risk of infection in laparoscopic surgery?**

A. No, the small cuts mean that less of your body is subjected to infection. Infection in laparoscopic surgery is much less than open surgery

**Q. Why do you approach the hernia from the inside contrary to open surgery?**

A. The hernia is protrusion of the body contents through the weakness within the muscle. It is logical that something originating from inside is better dealt from the inside. Also by doing this one does not cut and weaken the already weak muscles at the hernia site. In laparoscopic surgery we use ultra light weight mesh and it is introduced with 10 mm small hole.

**Q. Is it safe to depart a mesh within the body during laparoscopic surgery?**

A. Use of mesh in hernia is standard procedure even in open surgery. The mesh used is equivalent to the main one employed for open operations over last 3 decades. Its safety and efficacy is certainly as proved through the numerous trials in the USA and Europe.

**Q. Is laparoscopic surgery very costly? How can a patient justify the cost of the equipment and laparoscopic surgery?**

A. The initial cost of setting up of laparoscopic instrument of high definition is about rupees twenty lakhs. Once the initial setting up expenditure of laparoscopic surgery is included, the cost of surgical treatment can be minimized by using re-usable laparoscopic instrument which is now being made in all the developing country.

**Q. What benefit is this towards the government institutions doing laparoscopic surgery?**

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A. Because of early discharge after laparoscopic surgery, it reveals beds of hospital will be available for other patients who would have otherwise need to wait for long time for their treatment in government hospital. The poor patients who are depending on their physical work, after laparoscopy they can return to their work early.

**Q. Which group of patient benefits the best from laparoscopic surgery?**

A. All the patients who get laparoscopic surgery are benefited. The working person who returns to work quickly has tremendous benefit for that self-employed. A poor labour can resume work or return to home soon and take control from the disrupted hand to mouth as may the situation be. Young children are in a position to return to school soon and do not lose out on studies or sport.

**Q. Can there be any benefit to the employers if their workers go for laparoscopic surgery?**

A. Employers are in great benefit, it means fewer sick leaves and early return back to work e.g. following a gallbladder operation, a worker finds it hard to resume work till about about six weeks to three months. Here, they can be back to work in a week or two.

**Q. What about the poor people who want laparoscopic surgery?**

A. In a developing country where manual labour may be the main income source towards the large majority, avoiding a huge cut in the muscles are only able to have long-term beneficial results. Imaginable the significance to some labour or perhaps a construction site worker who are able to resume his operates in two week after a laparoscopic hernia repair compared to 3 months after conventional open hernia repair. Keeping their social responsibility in mind many hospitals are providing free laparoscopic surgery for poor. World Laparoscopy Hospital, Gurgaon is one of those hospitals where free surgery is being performed for poor and needy.

**Q. What's new in Laparoscopic Surgery?**

A. With the advancement of technology, the engineers and manufacturers have responded with telescopes of smaller diameter like 5 mm and three mm as opposed to the 'conventional' laparoscopic 10mm telescopes. Also instruments are now being developed of 3 mm diameter. This advancement is known as mini/micro/needloscopic laparoscopic surgery. The other advancement is Single Incision Laparoscopic Surgery. Click here for details on SILS. This is going to be the technique of 21st century. While gallbladder and appendix operations can be achieved with similar equipment hence cost remains the same, advanced laparoscopic surgery like weight reduction bariatric surgery would want special instruments. Robotic surgery, computer-assisted surgery, and robotically-assisted surgery are terms for technological developments that use robotic systems to aid in surgical procedures.

Other advancement in laparoscopic surgery is robotically-assisted surgery was developed to overcome both the limitations of minimally invasive surgery or to enhance the capabilities of

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surgeons performing open surgery. In the case of robotically assisted minimally invasive surgery, instead of directly moving the instruments, the surgeon uses one of two methods to control the instruments; either a direct tele-manipulator or by computer control.

**Q. What are the draw backs of laparoscopic surgery?**

A. The risk comes from the inexperienced laparoscopic surgeon as there is rarely a more experienced person available for guidance in the event of difficulty. Unlike developed country there is no training program here and all sorts of depends upon individual enterprise. The safer surgeons don't contemplate it an insult for their ego if they have to transform a laparoscopic procedure to open in the event of difficulty. Aside from this, the only real other thing may be the decrease in sympathy levels from relatives as the hospital stay is so short. World Laparoscopy Hospital, Gurgaon is premier institute for laparoscopic and robotic training. The detail of these training program can be seen at <http://www.laparoscopyhospital.com/SERV01.HTM>

Unlike most other professions, changes within the profession of medicine are met with a few resistance and scepticism. Successful examples along with a positive approach are essential for that implementation of such programs. This figure should rise with rise in awareness amongst general practitioners and the public. The near future generations while reading a brief history of surgery will wonder why operations were ever done open.

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