

Risk Factors of Laparoscopy Surgery and its Types

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DESCRIPTION

A laparoscopy is a procedure that is carried out in the belly or pelvis utilising a camera and small incisions (about 0.5-1.5 cm). With a few tiny abdominal incisions, the laparoscope facilitates diagnostic or therapeutic procedures. Whereas thoracoscopic surgery is performed through a small incision on the chest or thoracic cavity, laparoscopic surgery involves operations in the abdominal or pelvic cavities. Obstetrical forceps, scissors, probes, dissectors, hooks, and retractors are a few of the specific surgical tools used in laparoscopic surgery. Surgery performed using laparoscopy and thoracoscopic techniques is a subset of endoscopy. German physician Georg Kelling performed the initial laparoscopic surgery in 1901.

Types

There are two types of laparoscope:

1. A system of telescopic rod lenses that is typically attached to a video camera (single-chip charge-coupled device or three-chip charge-coupled device)
2. A digital laparoscope without a rod lens system that is instead equipped with a tiny digital video camera.

The second type of mechanism is mostly employed to increase the image quality of flexible endoscopes, which take the place of traditional fiberscopes. Laparoscopes are rigid endoscopes, despite this. Clinical practise necessitates rigidity. Due to their fine optical resolution (50 m generally, depending on the aperture size employed in the objective lens), rod-lens based laparoscopes predominate significantly in practise. If necessary, the image quality can even surpass that of a digital camera. In both the laparoscope market and hospitals, the second kind of laparoscope is extremely uncommon. A fibre optic cable system that illuminates the surgical field using a "cool" light source (halogen or xenon) that is inserted through a 5 mm or 10 mm cannula or trocar is also attached. Carbon dioxide gas is often inhaled into the abdomen. In order to create a space for working

and seeing, the abdominal wall is raised over the internal organs. Because it occurs naturally in the human body, tissue can absorb it, and the respiratory system can expel it, Carbon dioxide is used. Also, it is non-flammable, which is crucial because laparoscopic surgeries frequently involve electrosurgical devices.

Risk factors

Some of the risks are briefly described below:

- The major issues during laparoscopic surgery are related to the cardiopulmonary effect of pneumoperitoneum, systemic carbon dioxide absorption, venous gas embolism, unintentional injuries to intra-abdominal structures, and patient positioning.
- Some patients have suffered electrical burns that surgeons are oblivious to because they are using electrodes that leak current into the surrounding tissue.
- As a result of increased exposure to chilly, dry gases during insufflation, about 20% of patients have hypothermia during surgery and peritoneal trauma. It has been demonstrated that using surgical humidification treatment, which involves inhaling heated and humidified Carbon dioxide, lowers this risk.
- During surgery, not all of the Carbon dioxide that is injected into the abdominal cavity is expelled through the incisions. Gas has a tendency to ascend, and when a pocket of Carbon dioxide rises in the abdominal cavity, it presses against the diaphragm (the muscle that divides the abdominal from the thoracic chambers and aids in breathing) and may put pressure on the phrenic nerve. For example, in 80% of women, this causes a discomfort sensation that may spread to the patient's shoulders. The Carbon dioxide will be absorbed by the body tissues and expelled by respiration, therefore the pain will always be momentary.
- Coagulation issues and extensive adhesions (scar tissue) from prior abdominal surgery are relative contraindications to laparoscopic surgery and may increase risk.

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