

Laparoscopy

Laparoscopy, a subfield of endoscopy, is a minimally invasive surgical procedure used to examine and operate on the internal organs of the abdomen through a small incision in the abdominal wall. The term “laparoscopy” is derived from two Greek words: laparo, meaning the soft space between hips and ribs, and skopie, meaning to examine. Today laparoscopy has broad clinical applications including for diagnosis, fertility procedures, visual representation, and surgery.

The beginnings of laparoscopy came in 1901, when researchers Georg Kelling and Dimitri von Ott began publicly describing their separate abdominal explorations. Both researchers observed peritoneal cavities but Kelling used a cystoscope, a type of endoscope generally inserted into the urethra of patients for bladder inspection, to look inside the abdomens of dogs and humans while von Ott used a culdoscope, a vaginally inserted endoscope, to view the peritoneal cavities of pregnant women through a slit in the vaginal wall.

The development of a laparoscopic instrument was a gradual process that occurred during the early twentieth century. In 1923 researchers advanced the laparoscopic viewing technique by widening the viewing angle of the laparoscope. In 1938 a method of laparoscopic entry was introduced that used a spring-loaded needle to enable the safe admission of a small amount of air or gas into the abdomen during surgery. This method allowed carbon dioxide to be inserted into the abdomen of patients, pushing organs to the side and providing physicians with a less crowded area to perform surgery.

As the twentieth century progressed, laparoscopy became increasingly relevant to the study of women’s reproductive processes. In 1937 the first laparoscopic diagnosis of ectopic pregnancy was reported. Laparoscopic tubal sterilization by means of electro-cauterization of fallopian tubes was first documented in 1936 by German researcher P. F. Boesch. In 1978 physician Patrick Steptoe and embryologist Robert Edwards used laparoscopy to recover the first oocytes used for the purposes of in vitro fertilization. Tubal-pregnancy removal, in vitro fertilization, and hysterectomy are examples of twenty-first century laparoscopic surgeries related to women’s reproductive health.

Clinical laparoscopic advances were paralleled with improved observation techniques. Visual representations of laparoscopic procedures provided increased understanding of internal cavities and their corresponding functions. Permanent documentation of endoscopic procedures had begun in 1874 when the first bladder pathology images were recorded. Researchers Henning and Keilhack took the first color images of the inside of the stomach through a gastroscope in 1938 and the first laparoscopic movie recorded the exploration of liver disease in 1959. In the late twentieth century photographer Lennart Nilsson captured images of developing fetuses using laparoscopes during amniocentesis procedures. These images were published in Life magazine and were influential in shaping the way the public visualizes the process of human development.

The evolution of laparoscopy attributed to medical advances in how internal processes are perceived, treated and depicted. The benefits of laparoscopic procedures in comparison to open surgeries include reduced risk of infection, scarring, antibiotic treatment, and length of hospital stay.

Sources

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