



Common Gynecologic Procedures: Laparoscopy versus Laparotomy

Dr.Hani Abuhalmeh

Learning Objectives

By the end of this lecture, students should be able to:

- Define laparoscopy and laparotomy.
- Understand indications for each surgical approach.
- Compare advantages and disadvantages.
- Recognize contraindications.
- Describe common gynecologic procedures performed by each method.
- Understand perioperative management.
- Identify potential complications.
- Apply evidence-based decision-making in choosing the appropriate surgical approach.

Introduction

Gynecologic surgery has undergone tremendous evolution over the past several decades. The introduction of minimally invasive surgery (MIS) has revolutionized patient care by reducing postoperative pain, shortening hospital stay, improving cosmetic outcomes, and accelerating recovery.

Today, most benign gynecologic diseases are managed laparoscopically whenever feasible. However, laparotomy remains indispensable in selected complex, emergency, and oncologic situations.

The choice between laparoscopy and laparotomy depends on:

- Patient factors
- Disease characteristics
- Surgeon experience
- Equipment availability
- Emergency versus elective surgery

Definitions

Laparoscopy

A minimally invasive surgical technique performed through small abdominal incisions (5–12 mm) using:

- Telescope (laparoscope)
- CO₂ pneumoperitoneum
- High-definition camera
- Specialized instruments

Typical ports:

- Umbilical camera port
 - Two or three accessory ports
-

Laparotomy

An open abdominal operation performed through:

- Pfannenstiel incision
- Midline vertical incision
- Maylard incision

Provides direct visualization and tactile examination of abdominal organs.

Georg Kelling performed first laparoscopy.

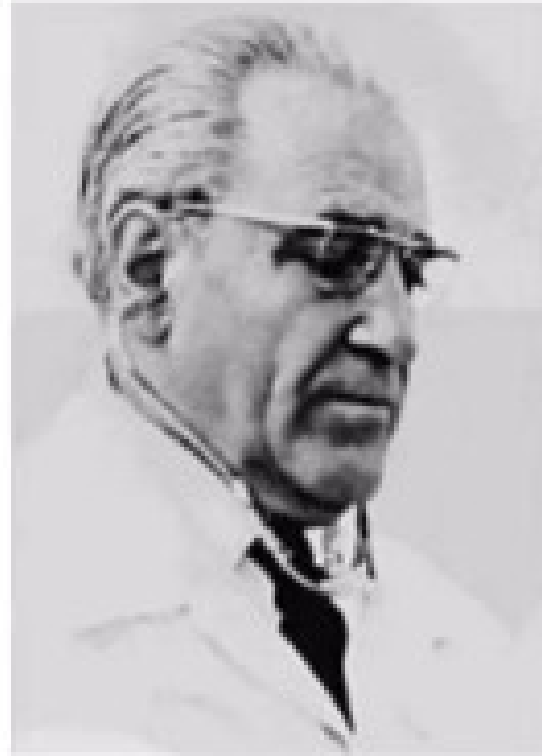
Video laparoscopy introduced.

present: Standard of care for most benign gynecologic surgery

History of laparoscopic surgery



Dr. Hans Christian Jacobaeus, a Swedish surgeon, was the first to publish a description of *laparothorakoskopie* in humans in 1910.



Dr. Janos Veress, a Hungarian internist, developed a spring-loaded needle with an inner stylet that automatically converted the sharp cutting edge to a rounded end.

The Veress needle is still used today to create a pneumoperitoneum



History of laparoscopic surgery

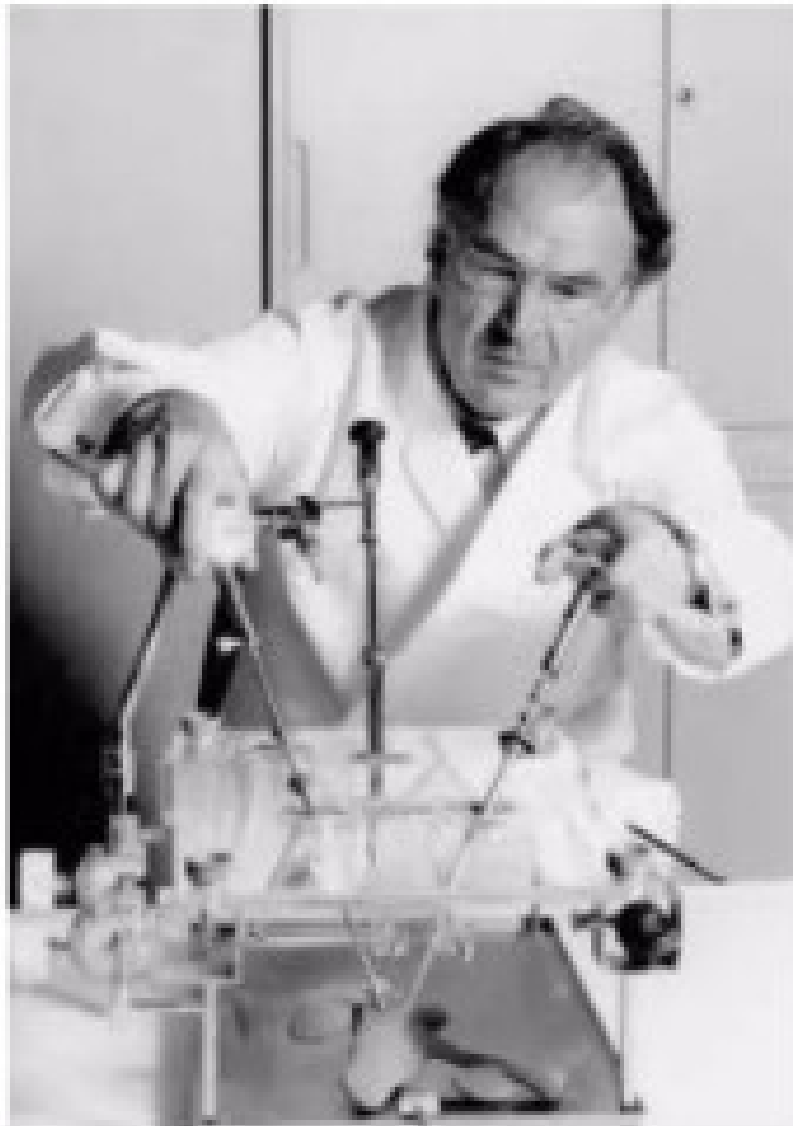
In 1961, Dr. Palmer described the first **laparoscopic retrieval of oocytes**, and in 1974 he described the point 3 cm below the last rib in the left mid-clavicular line.



Palmer's point is often used today for left upper quadrant laparoscopic entry.

In addition to advocating monitoring of intra-abdominal pressure

History of laparoscopic surgery



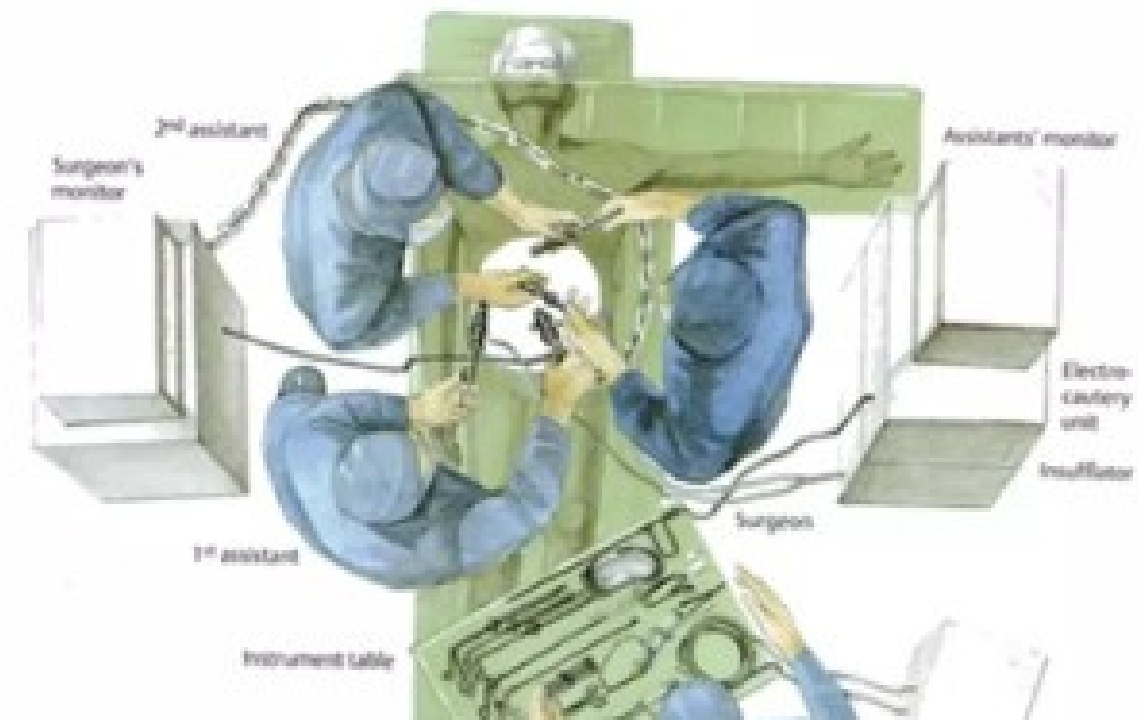
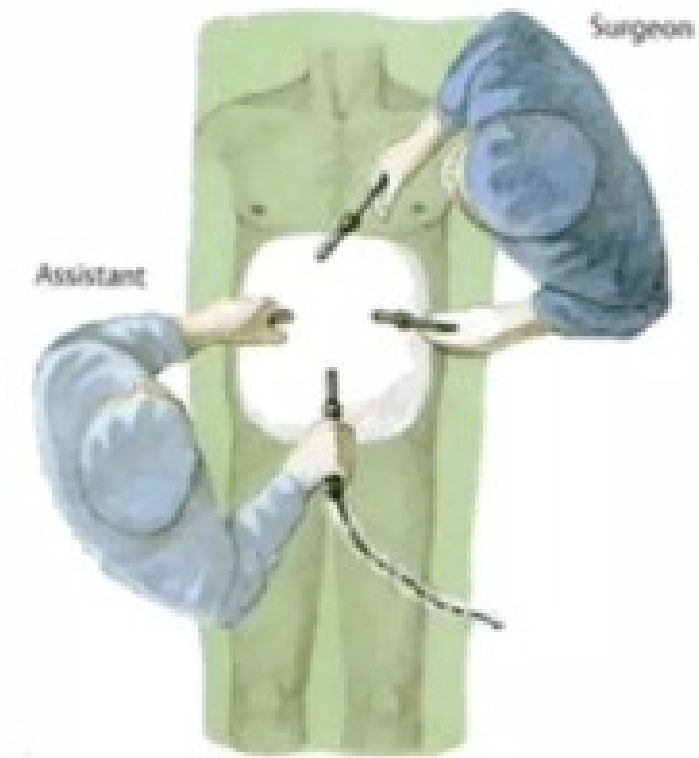
Dr. Kurt Semm, a German gynecologist who specialized in infertility, invented the **automatic insufflator** & instruments like thermocoagulator, loop ligature, and devices for extracorporeal and intracorporeal endoscopic knot tying.

History of laparoscopic surgery

Major breakthrough came with the introduction of the **solid state video camera** for laparoscopy in 1982.

Both laparoscopist and assistants could simultaneously view the operative field on a video screen.

By end of decade, laparoscopy became widely accepted as a safe and effective surgical approach



Today, operative laparoscopy is routinely used by gynecologists to perform a multitude of procedures, including hysterectomies and incontinence procedures, and for the diagnosis and treatment of gynecologic malignancies.



Basics of laparoscopy - Instruments

Verres needle

Used to inflate air/CO₂ to the peritoneal cavity (pneumoperitoneum) through the umbilicus where there is the thinnest abdominal wall.



Basics of laparoscopy - Instruments

Electronic laparoflator: Insufflator

Used to insufflate through the verres needle.

Maintains constant intra-abdominal pressure without exceeding the safety limit.

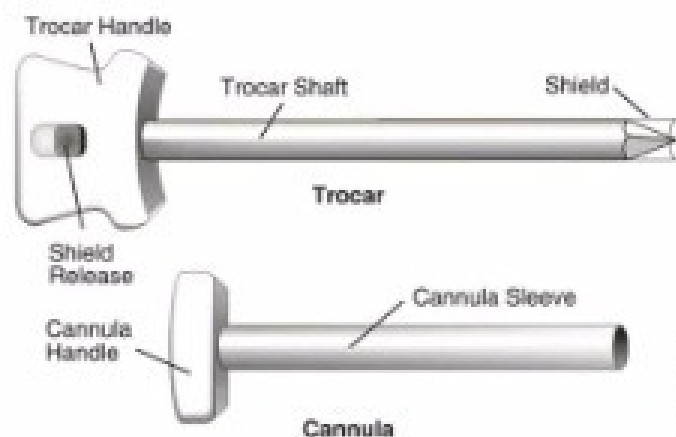


Basics of laparoscopy - Instruments

Trocars

Permit access to the intra-peritoneal cavity in which other instruments can pass.

The trocar used should be adapted to the diameter of the telescope selected

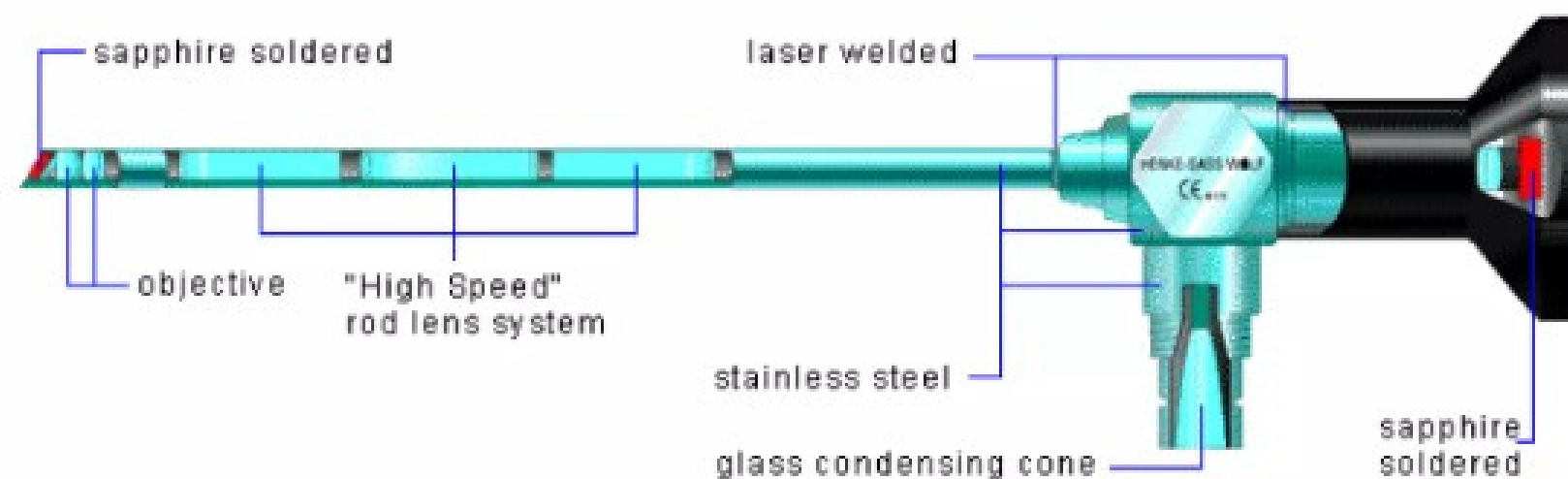
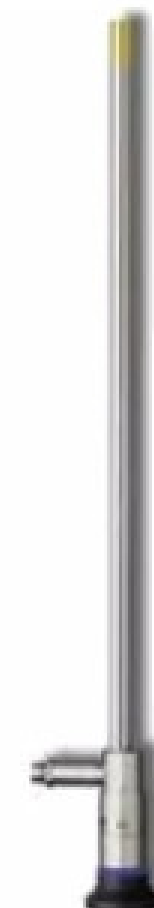


Basics of laparoscopy - Instruments

Telescope

There are different sizes and angles, each with a different use.

They are used to visualize the peritoneal cavity.



Basics of laparoscopy - Instruments

Camera equipment & Light source



Basics of laparoscopy - Instruments

Forceps and scissors

There are two types:

- Disposable
- Reusable

They can be either atraumatic or grasping forceps.

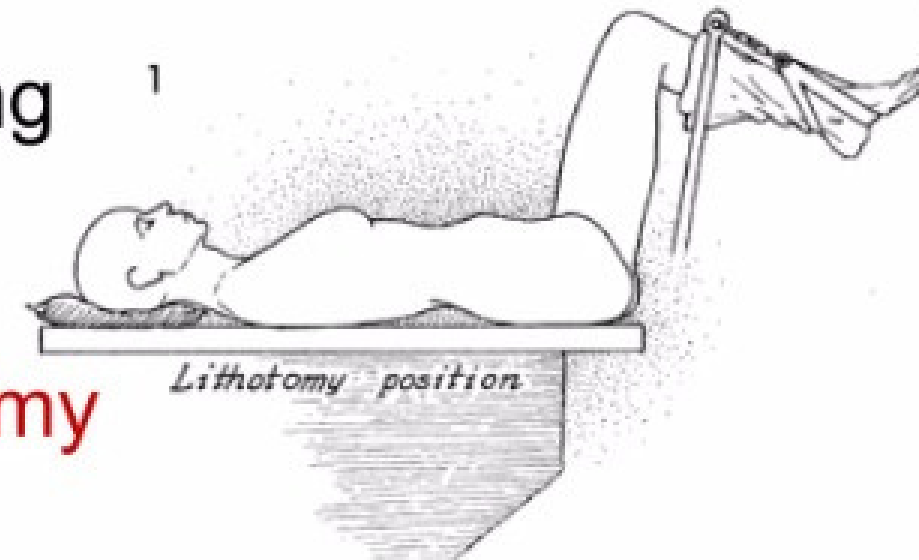


Basics of laparoscopy - Procedure

Procedure Preparation of the patient:

Inform the
benefits and
risks (informed consent).
Intestinal
emptying, for

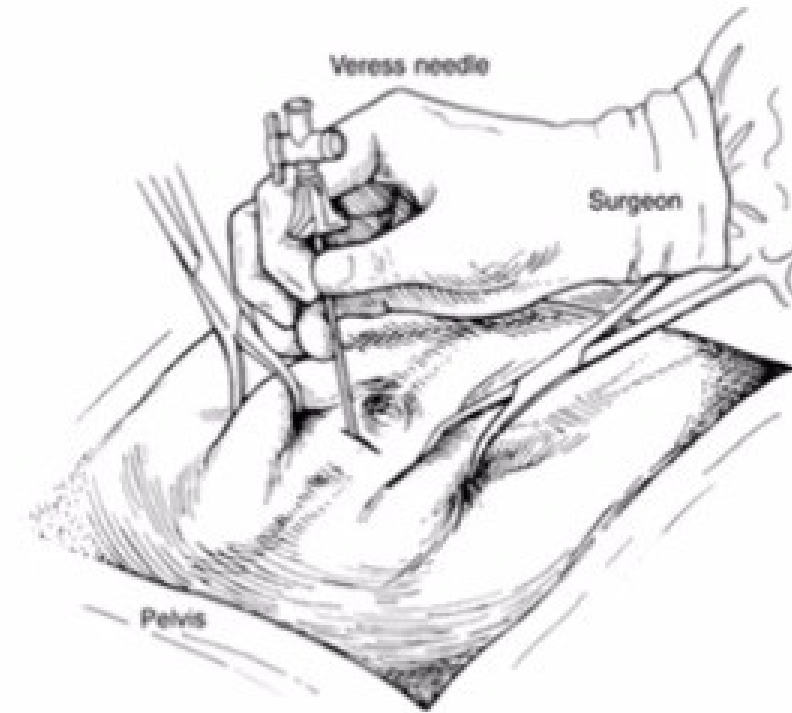
- Inform the patient about the therapeutic benefits and potential risks (**informed consent**).
- **Intestinal preparation**: Simple intestinal emptying, for better viewing and preventing injuries.
- Place the patient in the **dorsolithotomy** position.



Basics of laparoscopy - Procedure

Creating a pneumoperitoneum:

- The **abdominal wall is lifted** by hand or by grasping forceps
- **Pnemoperitoneum** is created by verres needle introduced to the umbilical area
- The needle is inserted in an **oblique angle** toward the uterine fundus
- The negative pressure will allow the underlying structures to fall away.
- After making sure that the needle is in correct position, air flow can be increased to **2.5 L/min till a pressure of 15mmHg**



Basics of laparoscopy - Procedure

Trocar introduction

Once the intra-abdominal pressure reaches 15 mmHg the main trocar is introduced after removal of veress needle.

The position of the trocar must be verified by inserting the laparoscope and viewing the pelvic cavity.



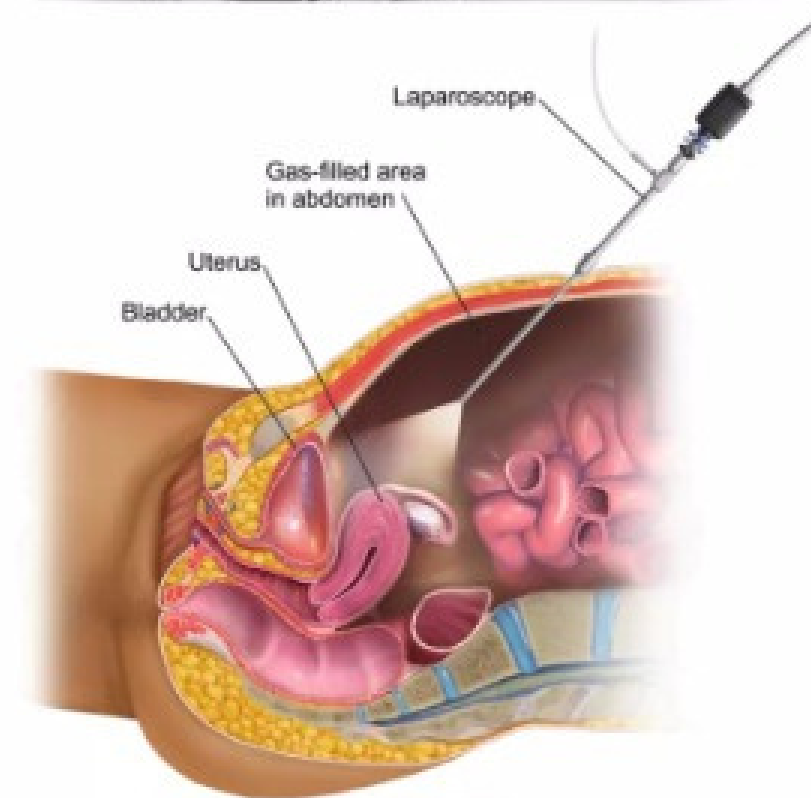
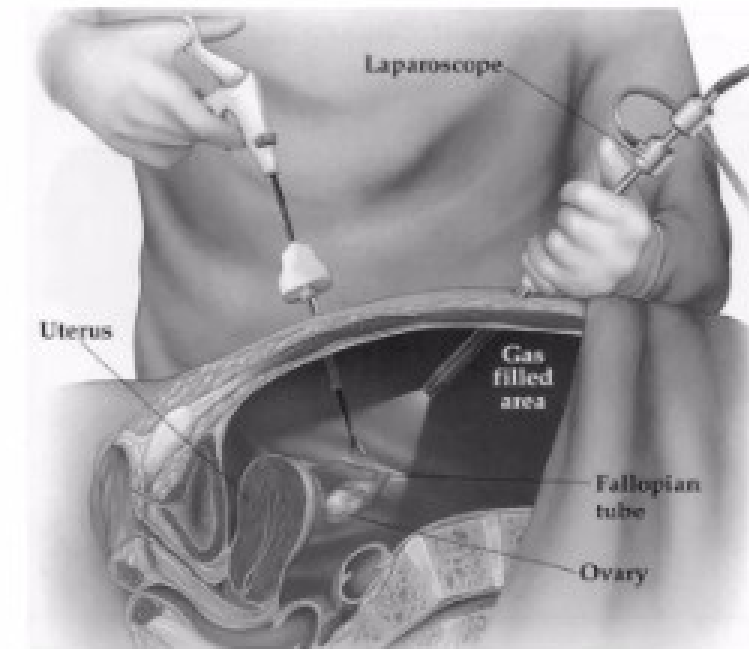
Basics of laparoscopy - Procedure

Viewing the peritoneal cavity

The omentum, bowel and bifurcation of pelvic vessels should be evaluated to avoid injuries caused during the introduction of Verres needle or trocar.

The site of introduction of other trocars should be verified by finger palpation and transillumination of abdominal wall to avoid injury to epigastric vessels.

Identify if there is any bleeding



Basics of laparoscopy - Procedure

During the operative procedure

- 1 or 2 bottles of Ringer's lactate are used to wash the peritoneal cavity after laparoscopy.
- Leave 500/1000 ml of ringer's lactate to reduce the incidence of post operative pain.

After the procedure

- CO₂ gas must be evacuated completely to reduce post-operative pain

Surgical Technique

- Open (Hasson)
- Direct trocar insertion

Step 3

Pneumoperitoneum

CO₂ pressure:

12–15 mmHg

Step 4

Trocar placement

Usually:

- 10-mm umbilical port
- Two 5-mm lateral ports

Step 5

paroscopy

Laparotomy

Incision

Pfannenstiel

or

Midline

↓

Abdominal exploration

↓

Procedure

↓

Hemostasis

↓

Layered closure

Comparison

Feature	Laparoscopy	Laparotomy
Incision	Small	Large
Blood loss	Less	More
Pain	Less	More
Recovery	Faster	Slower
Hospital stay	1–2 days	3–7 days
Infection	Lower	Higher
Adhesions	Fewer	More
Cosmetic result	Better	Worse
Cost	Higher equipment cost	Lower equipment cost
Learning curve	Steep	Less steep

Common Gynecologic Procedures

Diagnostic

Laparoscopy

- Chronic pelvic pain
- Infertility evaluation
- Endometriosis diagnosis
- Tubal patency assessment
- Pelvic adhesions

Laparotomy

Rarely used solely for diagnosis.

Ovarian Surgery

Laparoscopy

- Ovarian cystectomy
- Dermoid cyst removal
- Endometrioma
- Oophorectomy
- Detorsion

Laparotomy

Preferred for:

- Giant ovarian masses
- Suspected ovarian malignancy
- Difficult adhesions

Ectopic Pregnancy

Laparoscopy (gold standard if stable)

Procedures:

- Salpingostomy

- Salpingectomy

Laparotomy indicated when:

- Hemodynamic instability

- Massive hemoperitoneum

- Difficult visualization

Myomectomy

Laparoscopy

Suitable for:

- Small to moderate fibroids
- Subserosal fibroids
- Limited number

Laparotomy

Preferred for:

- Large (> 10 cm)
- Numerous fibroids
- Deep intramural fibroids

Hysterectomy

Approaches include:

- Total laparoscopic hysterectomy (TLH)
- Laparoscopic-assisted vaginal hysterectomy (LAVH)
- Abdominal hysterectomy

Common indications:

- Fibroids
- Adenomyosis
- Abnormal uterine bleeding
- Endometriosis

Endometriosis Surgery

Laparoscopy is considered the gold standard.

Procedures:

- Excision
- Ablation
- Adhesiolysis
- Ovarian endometrioma cystectomy

Laparotomy reserved for severe complex disease.

in Prolapse

l surgery.

opexy

ed.

Biologic Oncology

Prophylaxis:

• Endometrial cancer

• Progestin in selected patients

• Lymph node assessment

Prophylaxis:

• Advanced ovarian cancer

• Intensive debulking

• High tumor burden

Indications

Laparoscopy

Benign disease

- Ovarian cyst
 - Endometriosis
 - Fibroids
 - Ectopic pregnancy
 - Infertility
 - Pelvic pain
 - Sterilization
-

Laparotomy

- Large pelvic masses
- Severe adhesions
- Massive hemorrhage
- Advanced malignancy
- Unstable patient
- Bowel injury requiring repair

Contraindications

Absolute

Laparoscopy

- Hemodynamic instability
- Severe cardiopulmonary disease intolerant of pneumoperitoneum

Laparotomy

Few absolute contraindications except inability to tolerate major surgery.

Relative

- Morbid obesity
- Previous multiple abdominal surgeries
- Extensive adhesions
- Very large uterus (> 16–18 weeks)

Applications of Laparoscopy

- As a diagnostic tool
- As a therapeutic modality

Laparoscopy - as a **diagnostic tool**

- **Infertility**: status of the fallopian tube (morphology and functionality) and any pathological condition (e.g. adhesions)
- **Ovarian cysts** or tumors.
- **Ectopic** pregnancy.
- **PID**: tubal abscess or adhesions.
- **Endometriosis**: define the sites of implants and endometrial cysts.

Laparoscopy - as a **diagnostic tool**

- Chronic pelvic pain
- Ectopic pregnancy
- Pelvic inflammatory disease
- Endometriosis
- Adhesions
- Ovary: cysts, torsion
- Fallopian tube: torsion, salpingitis
- Uterus: fibroid, leiomyomata
- Pelvic congestion syndrome
- Infertility
- Oncologic procedures



Laparoscopy – in **Chronic Pelvic Pain (CPP)**

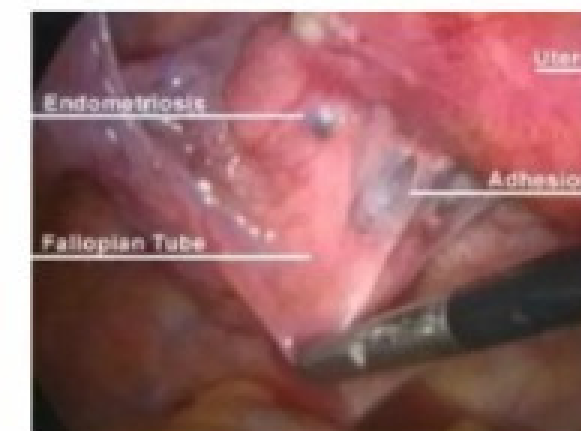
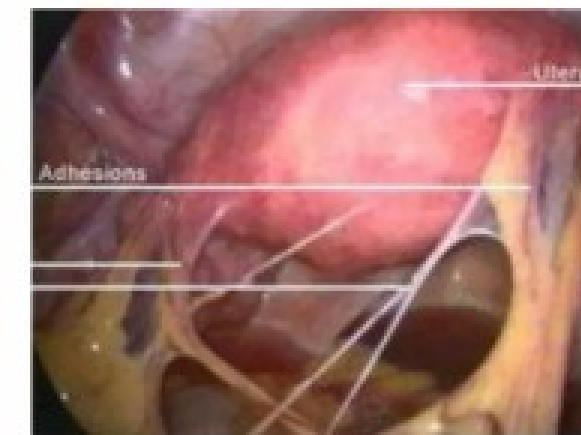
> 40% of gynecological diagnostic laparoscopies are done for CPP

Combined results of published series of laparoscopies for CPP shows:

- No visible pathology is detected in 35%
- Endometriosis is diagnosed in 33%
- Adhesive disease is found in 24%

A negative laparoscopy → not synonymous with no disease

A meticulously performed negative laparoscopy means that a woman does not have endometriosis-associated or adhesion-associated pain



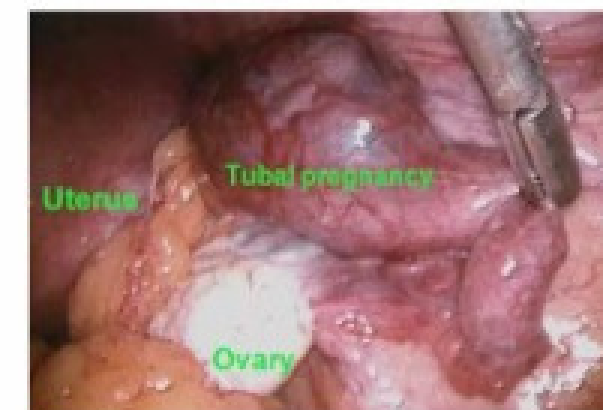
Laparoscopy – in **Ectopic pregnancy**

Transvaginal ultrasound has replaced laparoscopy for diagnosis of ectopic pregnancy.

Laparoscopy has diagnostic role if probable tubal pregnancy or diagnosis in doubt.

Large uncontrolled studies have demonstrated that > 80% of ectopic pregnancies can be managed laparoscopically

The most commonly used procedures at laparoscopy are salpingectomy and salpingotomy.



Laparoscopy – in **Pelvic Inflammatory Disease (PID)**

Clinical diagnosis of PID is often difficult especially when symptoms are mild, as frequently when the primary organism is *C. trachomatis*.

Laparoscopy is the gold standard for the diagnosis of PID – should be used when diagnosis is uncertain, especially in young women for whom the preservation of fertility is important.

Sellors et al. reported that only by resorting to diagnostic laparoscopy were they able to demonstrate that PID was the cause of acute pelvic pain in 46% of a group of 95 women.

Laparoscopy should be considered for patients who have not responded to antibiotic therapy within 48 to 72 hours.



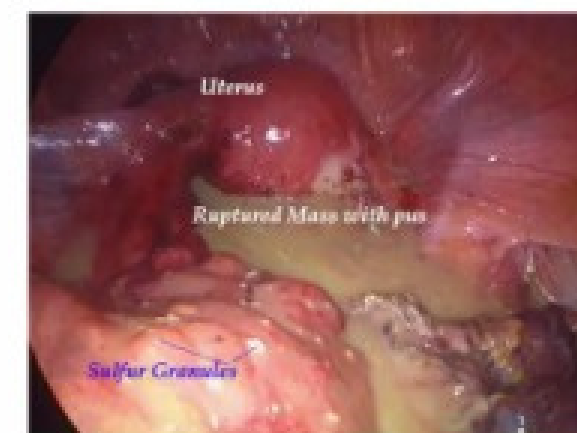
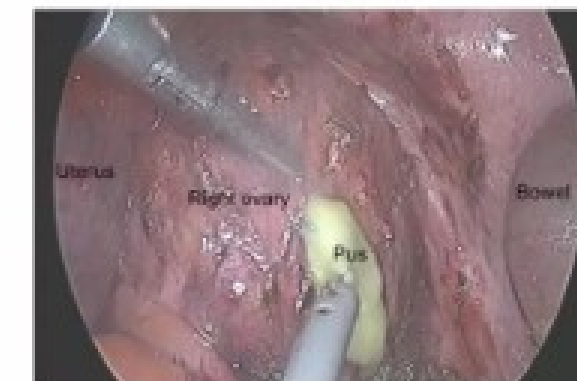
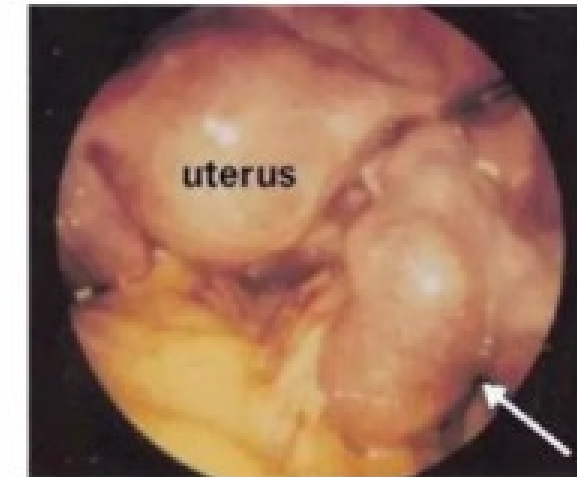
Laparoscopy – in **Tubo-ovarian Abscess**

Most commonly isolated pathogens from a tubo-ovarian abscess are *C. trachomatis* and *peptostreptococci*.

At laparoscopy the peritoneal cavity (pelvis and abdomen) is inspected carefully.

The surgical steps include adhesiolysis, aspiration of the abscess cavity, dissection and excision of necrotic tissue, tubal lavage, and irrigation of the peritoneal cavity before completion of the procedure.

Laparoscopic surgery combined with adequate broad-spectrum antibiotic therapy has proven successful in the treatment of more than 95% of patients.

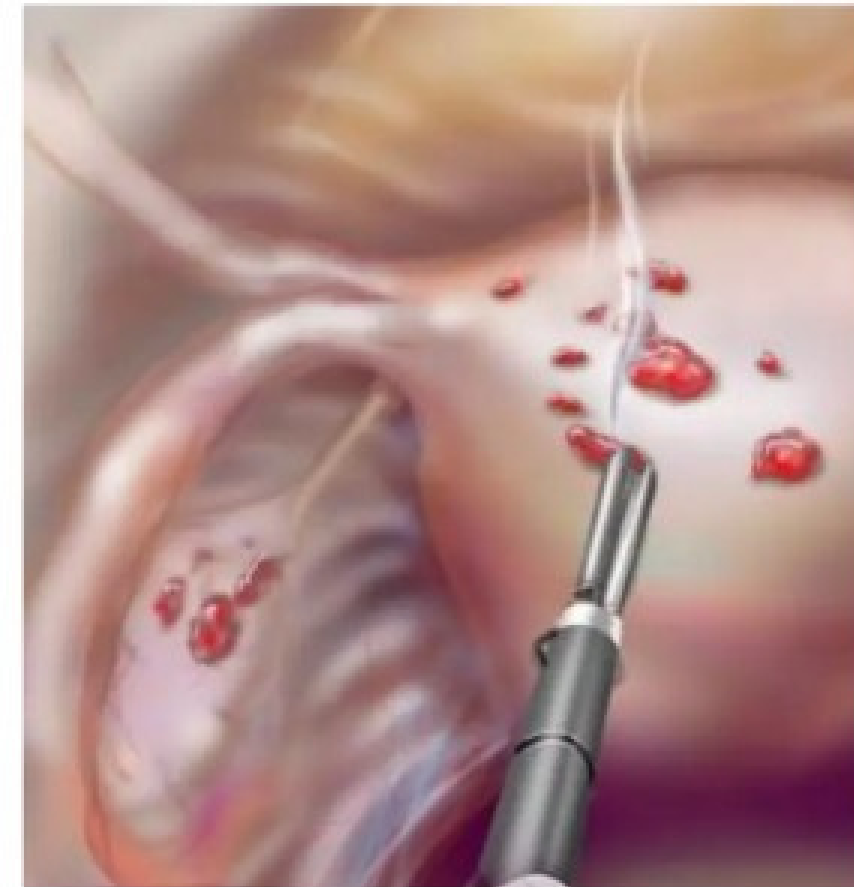


Laparoscopy – in Endometriosis

Endometriosis is a histologically-defined disease:
“the presence of ectopic tissue which possesses
the histological structure and function of the
uterine mucosa”
- Sampson, 1921

Laparoscopy has largely replaced laparotomy as
the diagnostic procedure for any patient
suspected of having endometriosis.

Based on visual appearance endometriosis are
classified as atypical (red, yellow, white or clear)
or typical (black-brown, black or puckered black
stellate) lesions.



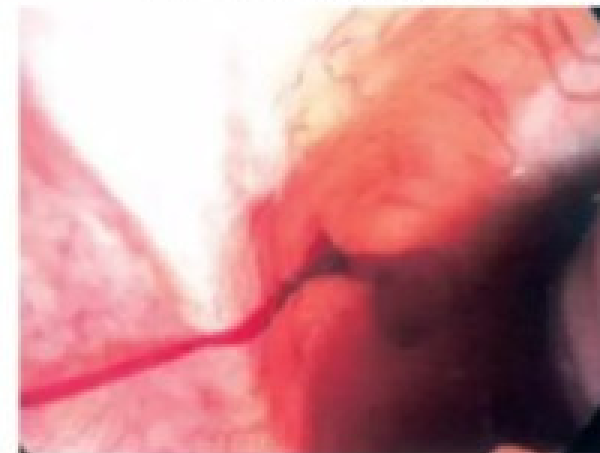
Laparoscopy – in Endometriosis

Endometriosis presents with a variety of appearances that may make visual diagnosis difficult and inaccurate.

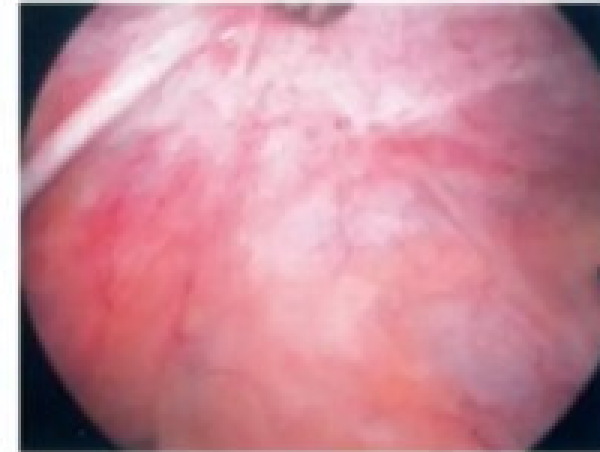
Brownish lesion on the ovary



White fibrotic lesion on the uterosacral ligament



Peritoneal pocket of endometriosis

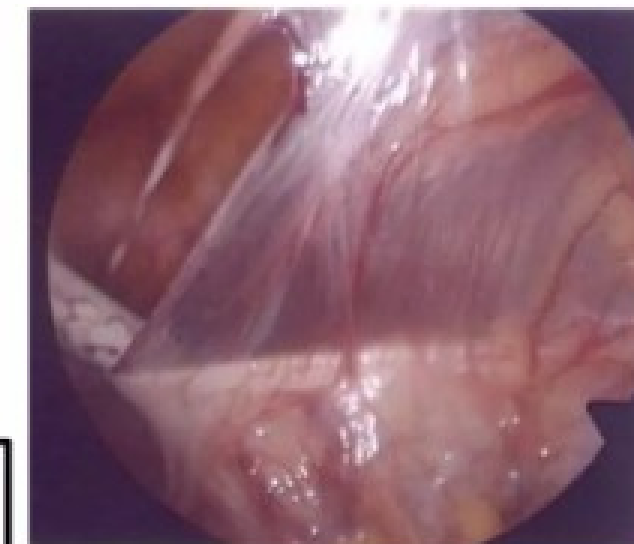
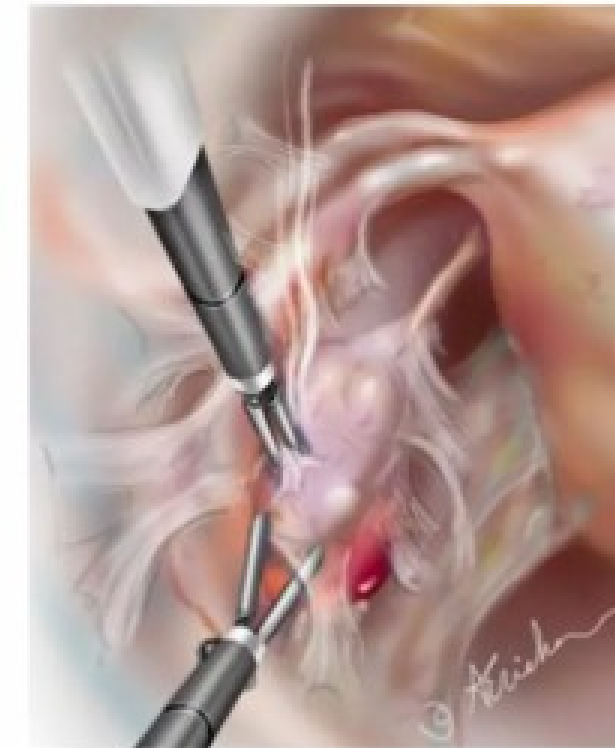


Red stellate lesions in the cul-de-sac

Laparoscopy – in Adhesions

Presently the only definitive way to diagnose adhesions is by surgical visualization usually via laparoscopy instead of laparotomy.

Laparoscopic studies reveal adhesions on average in 24% of CPP patients and 17% of non-CPP patients.



Laparoscopy – in **Adenomyosis**

Endometrial cells penetrate the myometrium causing either localized (adenomyoma) or diffuse overgrowth.

Adenomyomas that penetrate the uterine cavity become submucosal tumors.

An enlarged uterus from adenomyosis is often misdiagnosed as being from fibroids

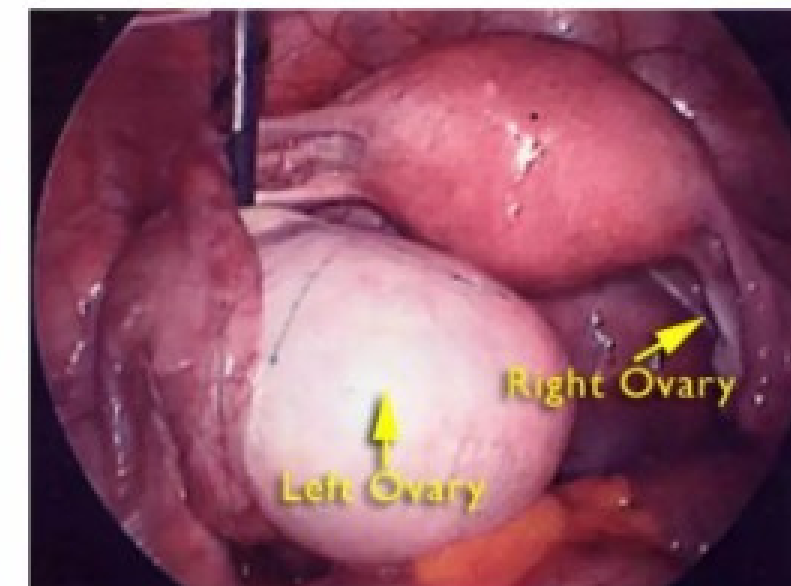
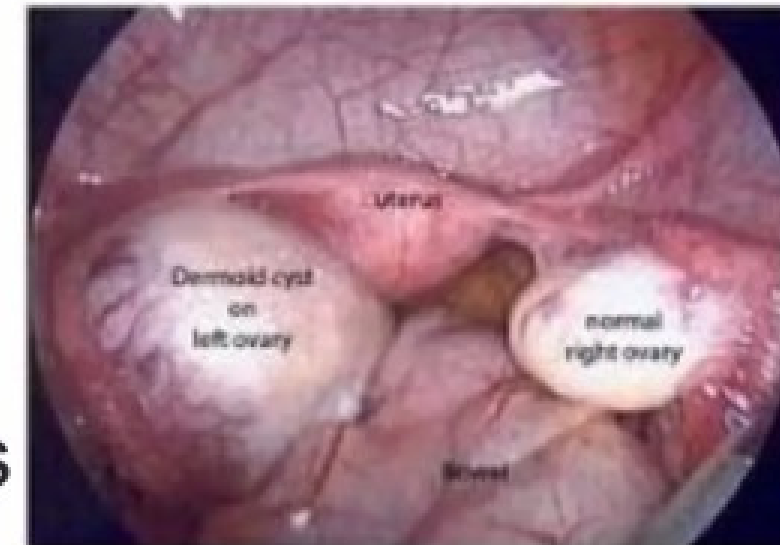


Laparoscopy – in Ovarian Cysts

Most ovarian cysts are haemorrhagic corpora lutea or follicle cysts.

They are usually asymptomatic and when they cause pain it is almost always acute.

Laparoscopic evaluations of patients with CPP reveal ovarian cysts on average in only 3% of all cases.

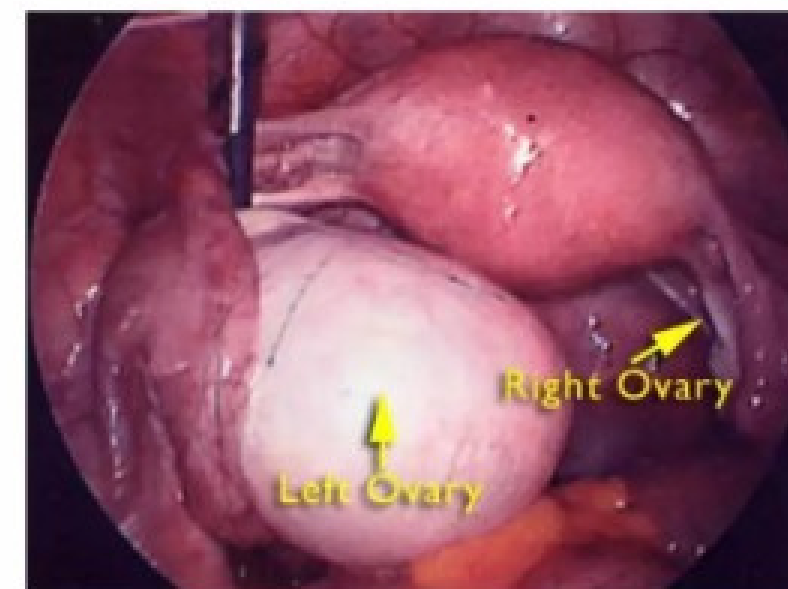
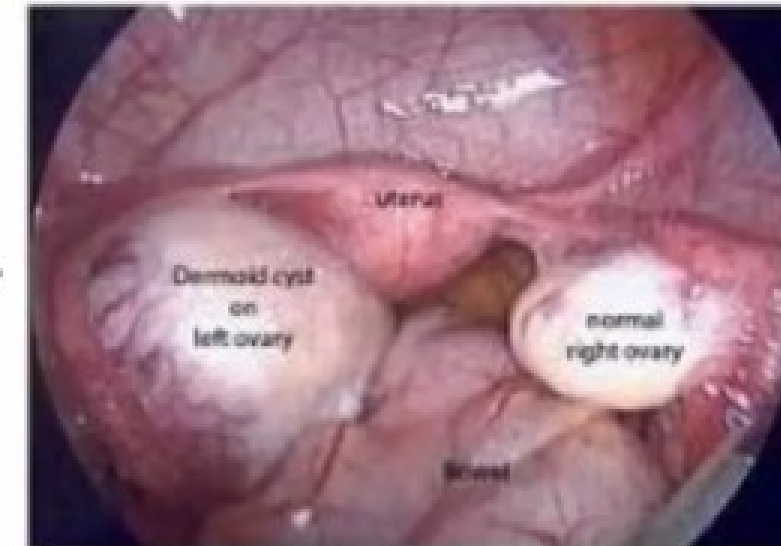


The role of laparoscopy as a diagnostic tool in chronic pelvic pain. Fred M Howard MS, MD *Baillie's Clinical Obstetrics and Gynaecology* Vol. 14, No. 3, pp. 467-494, 2000.

Laparoscopy – in Ovarian Cysts

Even when the surgeon is 'certain' that the ovary is benign, it is essential that tissue be sent for histological evaluation.

Open the cyst and inspect the lining for papillary structures or excrescences. If these are noted, then a laparotomy should be done

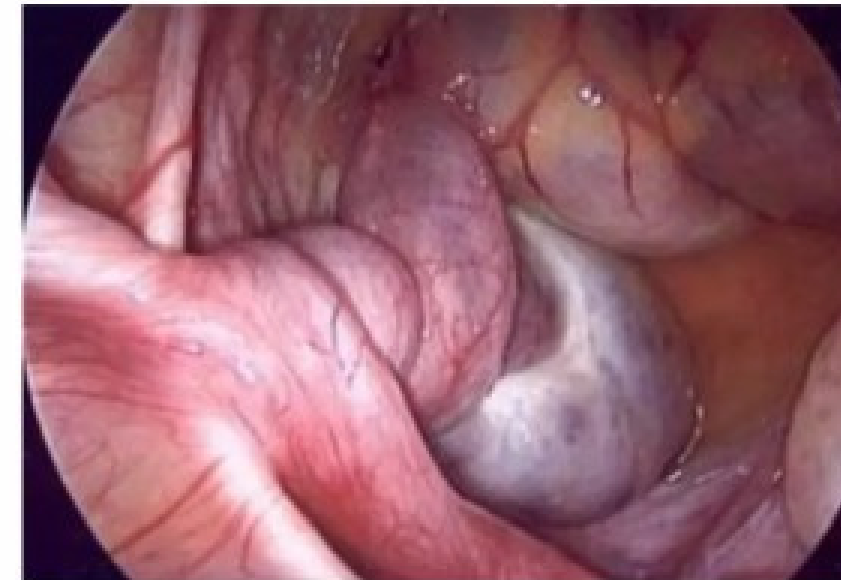


Laparoscopy – in **Adnexal Torsion**

A rare gynecologic emergency that nearly always occurs unilaterally.

Relapse or bilateral adnexal torsion can cause sterility interfering with fertility.

In 30% of the patients, there is torsion of a normal adnexa, while the majority of the cases are associated with ovarian pathology.



Laparoscopy – in **Endosalpingiosis**

Endosalpingiosis is the presence of fallopian tubal glandular epithelium in an ectopic location.

Visually it appears as white to yellow, opaque or translucent, punctate, cystic lesions.

Endosalpingiosis is generally not recognized at the time of laparoscopic evaluation or is misdiagnosed as endometriosis.



Laparoscopy – in **Leiomyomata (fibroids)**



Laparoscopy – in **Oncologic procedures**

For second-look procedures following surgical and chemo treatment of malignancy.

Laparoscopy has also been used for staging, including peritoneal washes with biopsy, partial omentectomy, and pelvic and periaortic lymphadenectomy

Laparoscopically assisted radical vaginal hysterectomy have also been used by some gynecologic oncologists.

Laparoscopy - as a **therapeutic tool**

1. Management of ovarian cyst by

- Drainage
- Ovarian cystectomy
- Ovarian drilling of the cortex and stroma to decrease androgens in the ovaries
- Correcting ovarian torsion.
- As a treatment of endometriosis By removal of the endometrial cyst, cauterization of endometrial spots and adhesiolysis

Laparoscopy - as a **therapeutic tool**

2. **Management of infertility:**

- Adhesiolysis
- Treat the cause (endometriosis, PCOS)

3. **Myomectomy for fibroids:**

used for subserosal and intramural fibroids only, not used for submucosal fibroids.

4. **Management of PID**

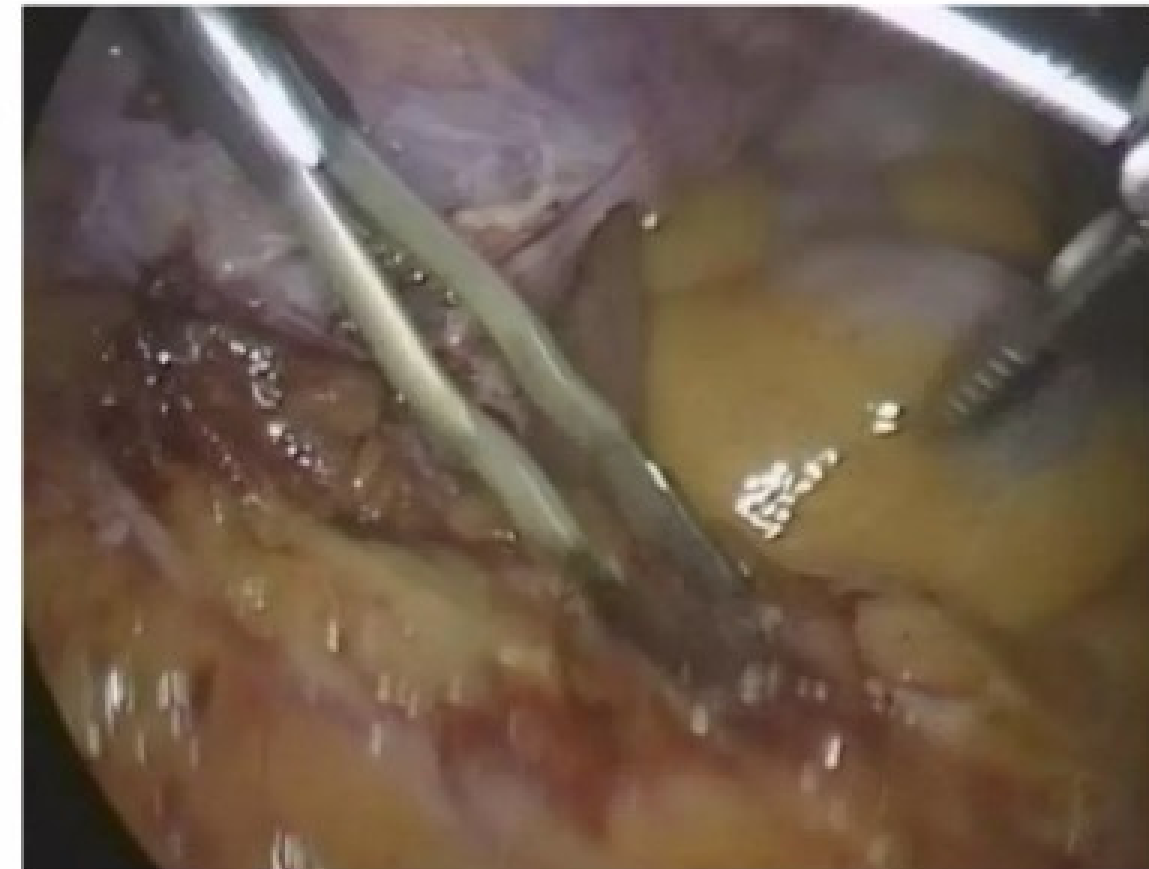
by draining tubal abscess and adhesiolysis.

Laparoscopy – in Adhesiolysis

Adhesions may form due to prior infection, such as a ruptured appendix or pelvic inflammatory disease (PID), endometriosis, or previous surgery

Adhesions may be lysed by blunt or sharp dissection

Aquadissection may aid in the development of planes prior to lysing. Any of the power instruments may be used for cutting and coagulation



Laparoscopy – in Myomectomy

The fibroid may be removed by morcellation or colpotomy.

Power morcellators are available to expedite the process.

If the patient has a pedunculated fibroid, the stalk may be easily incised. However, for intramural fibroids, the risk of bleeding increases.



Laparoscopy – in Management of Ectopic Pregnancy

Salpingotomy

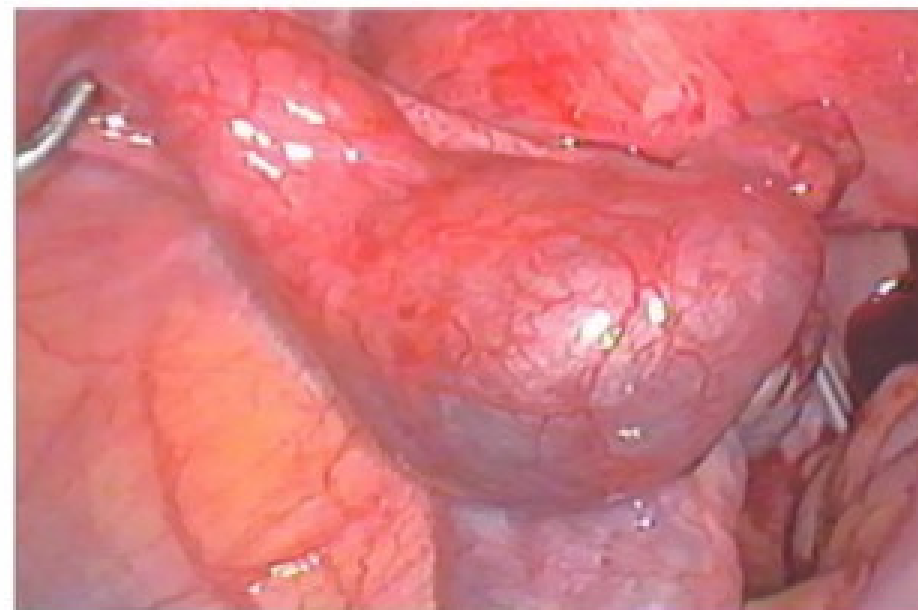
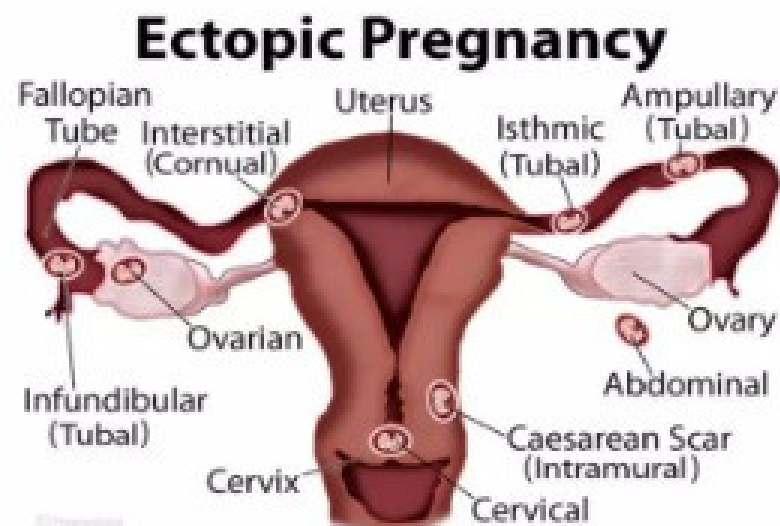
Used to preserve the tubes for desired reproductivity.

Done if the patient is hemodynamically stable

If size < 5 cm

Location must be ampullary, infundibular or isthmic.

Contralateral tube either normal or absent.

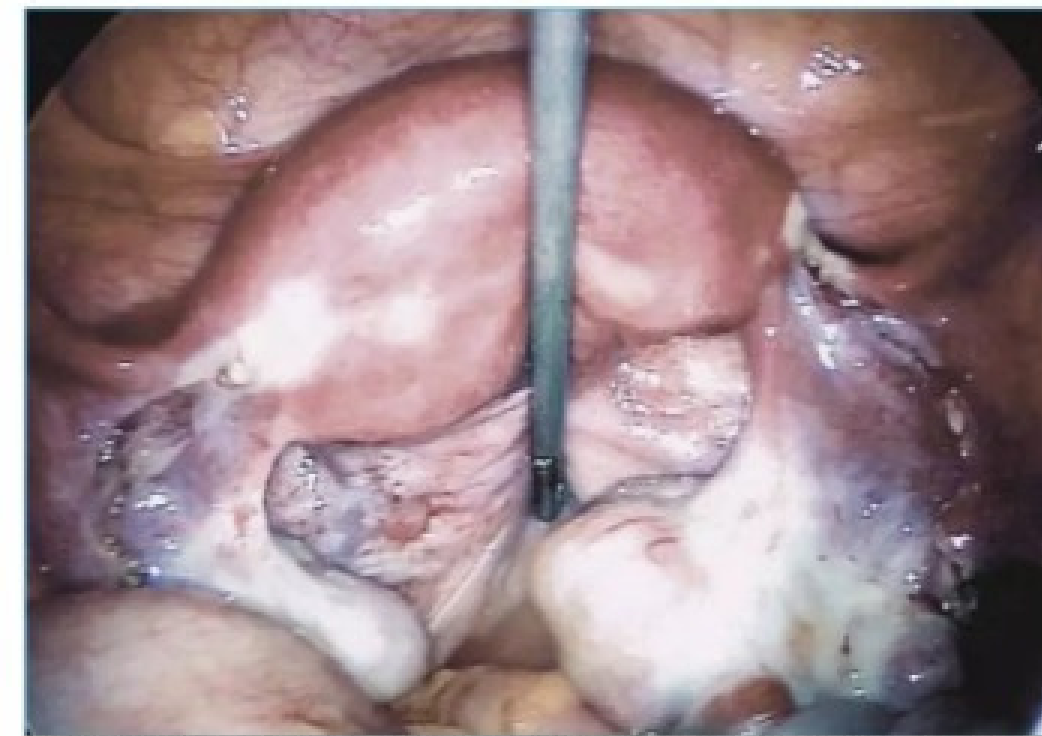
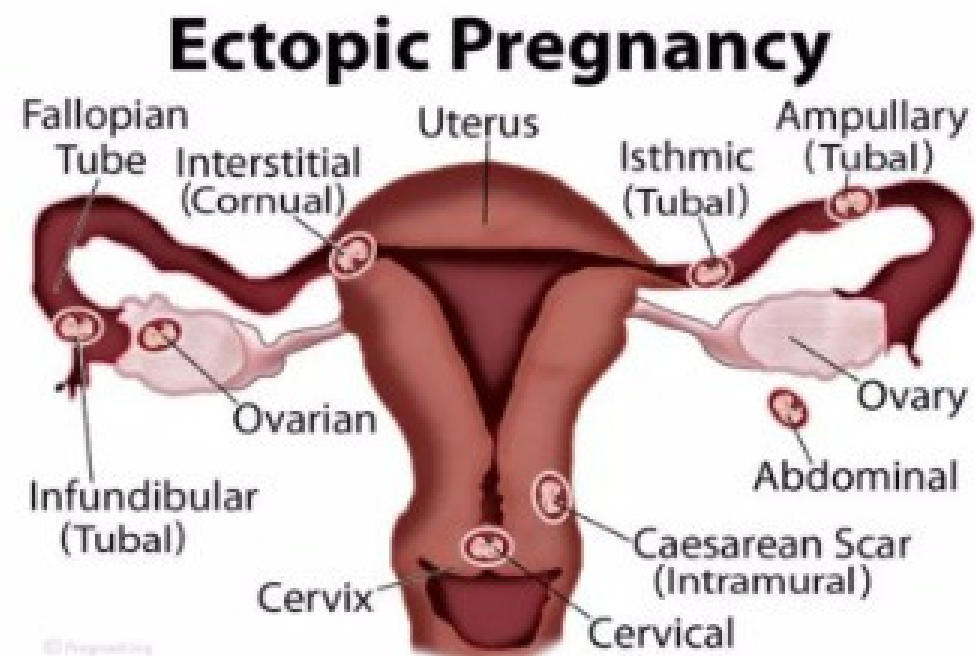


Laparoscopy – in Management of **Ectopic** Pregnancy

Salpingectomy

(it is the standard for ectopic pregnancy) if:

- Ruptured tube
- Multiple recurrence of ectopic pregnancy
- Size of ectopic > 5 cm



Kissler S et al. Journal für Reproduktionsmedizin und Endokrinologie - Journal of Reproductive Medicine and Endocrinology 2006; 3 (6): 387-389 ©

Laparoscopy – Tubal sterilization

Tubal sterilization can be done using:

- Bipolar coagulation
- Clips (filshie clips) and rings

Before the procedure, inform patient about:

- Chance of irreversibility
- Failure rate 1/200
- Bleeding may occur and we may shift to laparotomy.

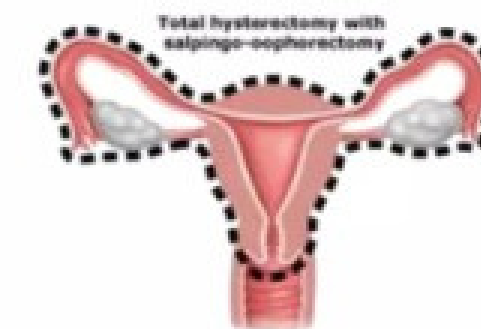
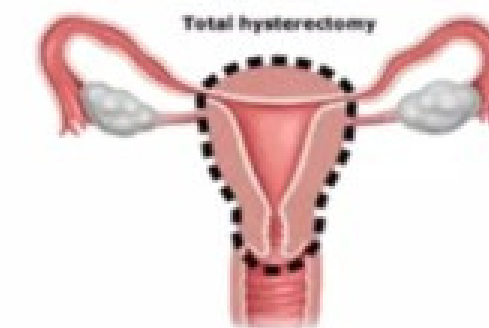
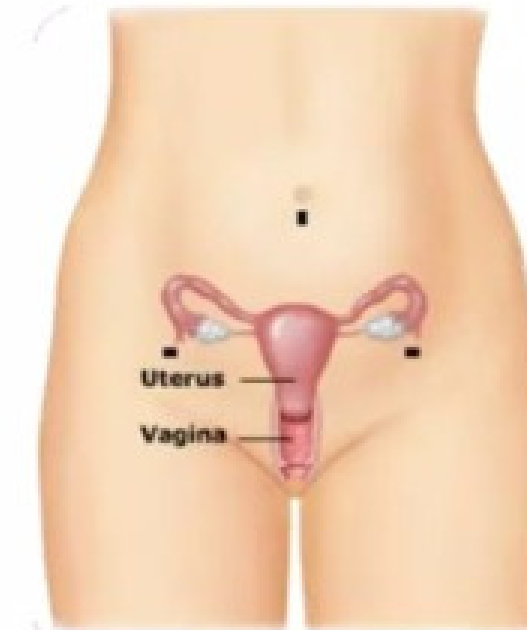
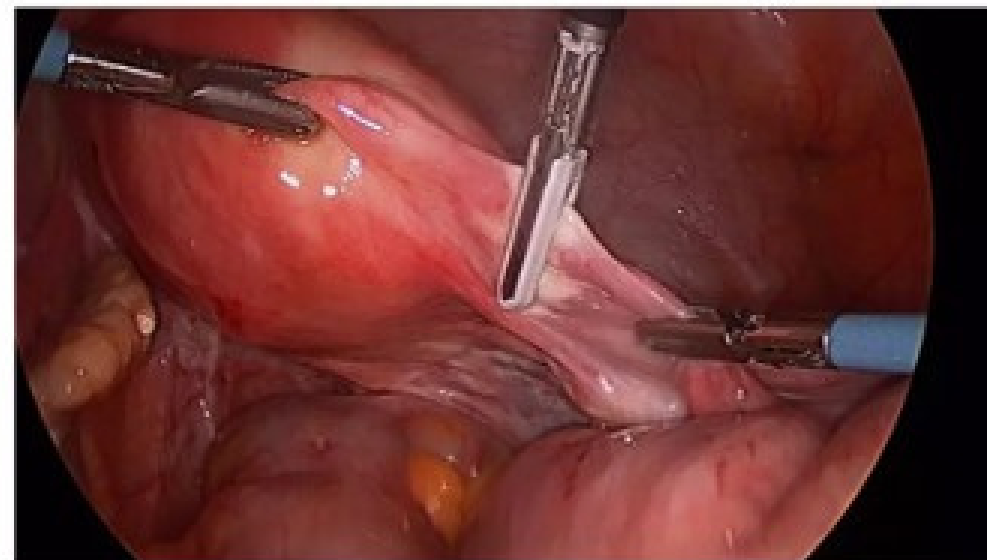
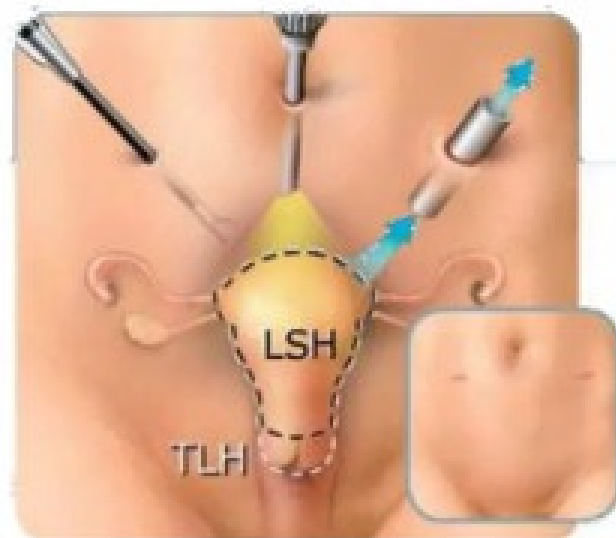


Laparoscopic hysterectomy

Laparoscopic hysterectomy:

The 3 basic laparoscopic approaches for hysterectomy are

- laparoscopic-assisted vaginal hysterectomy (LAVH)
- laparoscopic hysterectomy (LH)
- laparoscopic supracervical hysterectomy (LSH)



Advantages of Laparoscopy

- Magnified visualization
 - Better cosmetic results
 - Less postoperative pain
 - Less blood loss
 - Earlier ambulation
 - Reduced ileus
 - Lower wound infection
 - Fewer adhesions
 - Earlier return to work
-

Disadvantages of Laparoscopy

- Expensive equipment
- Longer learning curve
- Longer operative time initially
- Limited tactile sensation
- Risk of trocar injury
- CO₂-related physiological effects

Advantages of Laparotomy

- Rapid abdominal access
 - Better exposure in complex surgery
 - Easier management of massive bleeding
 - Preferred for advanced malignancy
 - Shorter operative time in some emergencies
-

Disadvantages of Laparotomy

- More postoperative pain
- Larger scar
- Higher wound infection rate
- Longer hospitalization
- Delayed recovery
- Increased adhesions
- Greater blood loss

Complications

Laparoscopy

Entry-related

- Bowel injury
- Bladder injury
- Major vessel injury

Intraoperative

- Ureteric injury
- Hemorrhage
- CO₂ embolism
- Thermal injury

Postoperative

- Port-site hernia
 - Infection
 - Shoulder-tip pain
 - Deep vein thrombosis (DVT)
-

Laparotomy

- Hemorrhage
- Wound infection
- Incisional hernia
- Adhesive bowel obstruction
- Pulmonary complications
- DVT
- Ileus
- Urinary tract injury

Conversion from Laparoscopy to Laparotomy

include:

uncontrolled bleeding

extensive adhesions

visualization

injury

suspected malignancy

technical difficulty

is a patient safety decision, not a surgical failure.

Laparoscopy – **contraindications**

1. Generalized peritonitis
2. Hypovolemic shock
3. Severe cardiac disease
4. Hemoglobin less than 7 g/dL
5. Uterine size > 12 wks.
6. Multiple previous abdominal procedures
7. Extreme body weight

Laparoscopy – risk factors

Patient related risk factors

- Obesity
- Age
- Previous abdominal surgery

Anesthetic risk factors

- Time since last oral intake
- Heart disease
- Pulmonary disease

Laparoscopy – Patient related risk factors

Obesity

- Laparoscopy becomes more **difficult** and potentially more **risky**.
- Placement of laparoscopic instruments becomes much more difficult
- **Bleeding** from abdominal wall vessels may be more common because these vessels become difficult to locate.
- **Restricted operative field** secondary to retroperitoneal fat deposits in the pelvic sidewalls and increased bowel excursion into the operative field

Laparoscopy – Patient related risk factors

Age

- Older patients are at **increased risk** of having concomitant disease processes that affect their perioperative morbidity and mortality

Laparoscopy – Patient related risk factors

Previous abdominal surgery

- Risk of **adhesions** of omentum and/or bowel to the anterior abdominal wall after previous abdominal surgery is greater than 20%.
- As laparoscopy requires the insertion of sharp instruments into the abdominal cavity, a reasonable assumption is that previous surgery would increase the risk of bowel injury

Laparoscopy – pre-op work-up

1. Complete blood cell count
2. Pregnancy test
3. Urinalysis
4. ECG
5. Other:
 - In patients with known health problems, other laboratory tests, such as liver function tests or electrolyte evaluations, may be indicated.
 - A thorough preoperative medical evaluation, including appropriate laboratory studies
6. Imaging studies:
 - Chest radiography
 - Intravenous pyelograph or kidney ultrasound
 - Barium enema

Laparoscopy – possible complications

Laparoscopic procedures have unique risks, related to:

- methods used for the placement of abdominal wall ports
- pneumoperitoneum required for laparoscopy

1. Pneumoperitoneum related complications
2. Injury to abdominal organs
3. Blood vessel injury

Laparoscopy complications – Pneumoperitoneum

Pneumoperitoneum related complications

- Extra-peritoneal emphysema due to failure of introducing verres needle correctly into the peritoneal cavity and not checking the negative pressure on the machine.
- Gas may extend to the mediastinum and compromise cardiac function
- Pneumo-omentum
- Increased intra-abdominal pressures may increase anesthesia-related risks such as aspiration and increased difficulty ventilating the patient

Laparoscopy complications – abdominal organs

Injury to abdominal organs

- GI: if the intestine is distended or adherent to the abdominal wall (prevented by good intestinal preparation) and putting the patient on the telendelenburg position.
- Bladder injury: prevented by emptying the bladder.

Laparoscopy complications – **blood vessel injury**

Blood vessel injury:

- Pelvic, omental and mesenteric blood vessel injury
- Prevented by introducing the verres needle in an angle.
- Although the risk of blood loss is relatively low, potentially massive blood loss may occur and is complicated as control may be delayed because of the time taken to perform an emergency laparotomy.

Laparoscopy – recent advances

3 innovations that have been introduced in the field of laparoscopy:

- Robotic surgery
- Natural orifice transluminal surgery (NOTES)
- Single incision laparoscopic surgery (SILS).

Of these 3 developing technologies, robotic surgery is having the largest impact on clinical care.

Laparoscopy – **robotic surgery**

Robotic system advantages:

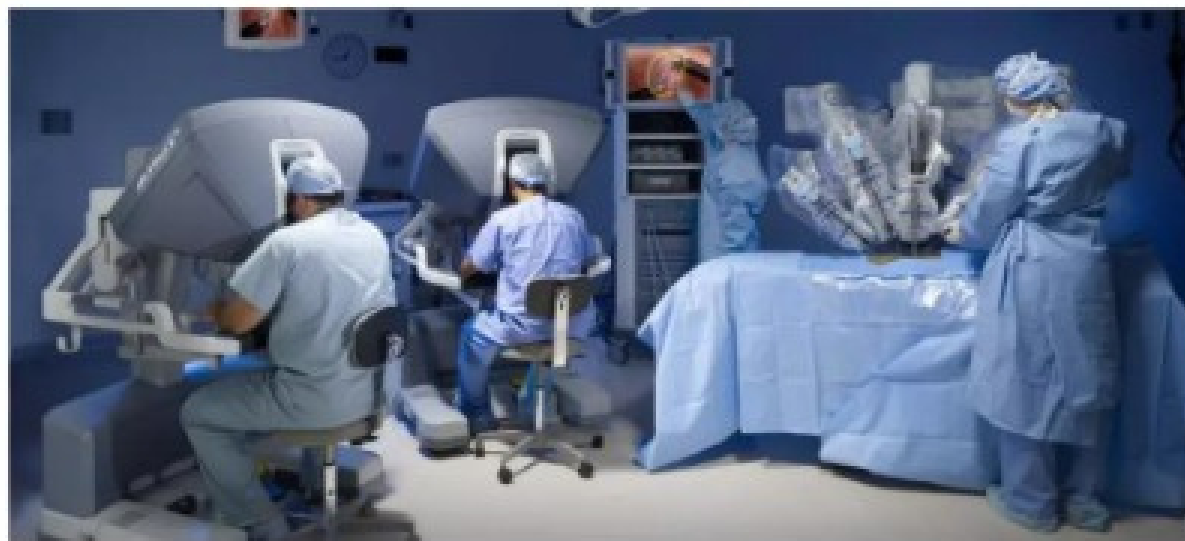
- 3-dimensional, high-definition imaging and magnification.
- Fully articulated instruments emulate the full range of motion of a surgeon's wrists and hands.
- Enhances the surgeon's ability to remotely perform fine motor skills such as intricate dissections and intracorporeal suturing that remain difficult during traditional laparoscopy.



Laparoscopy – **robotic surgery**

Robotic system advantages:

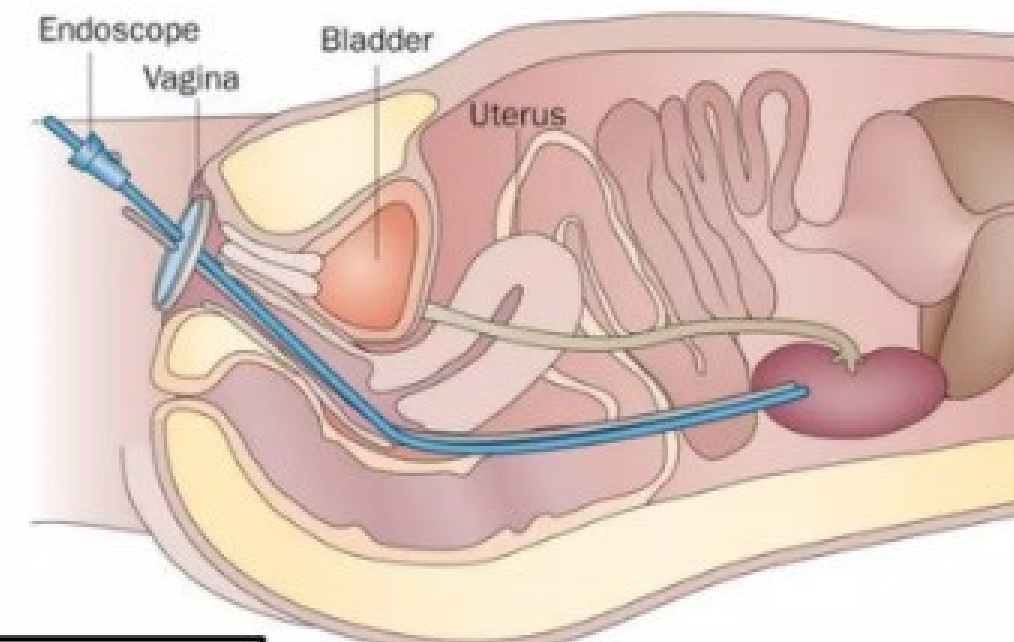
- Robotic tools attach to traditional laparoscopic ports and the robotic system is placed between the patient's legs for hysterectomy. The surgeon controls the instruments from a console located in the same room.
- Direct correlation between hand movements and instrument movements.



Natural orifice transluminal surgery

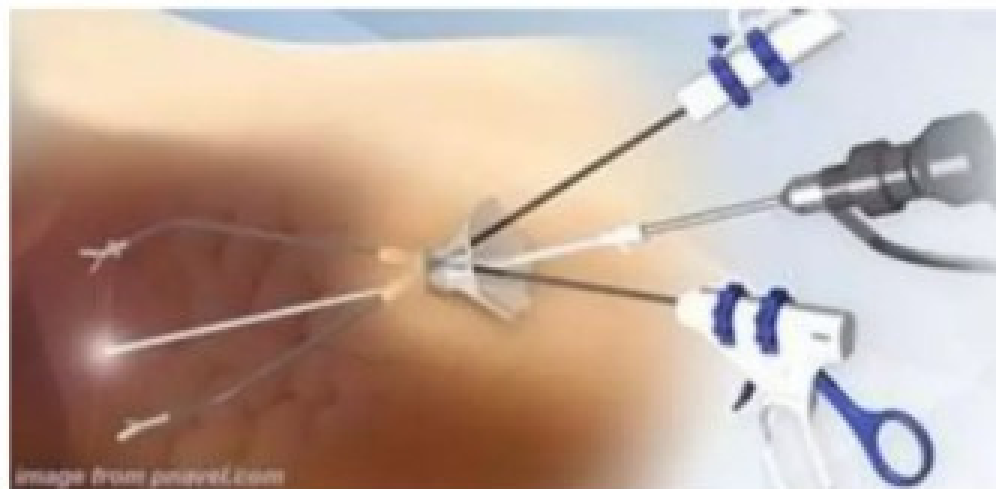
Using an endoscope to access the abdominal cavity through existing body openings (Ex: mouth, rectum, and vagina)

Modern NOTES uses a flexible endoscope to access the peritoneal cavity by creating an incision in the stomach or colon.



Single incision laparoscopic surgery

Single incision laparoscopic surgery (SILS) refers to performing laparoscopy through a single incision.



Laparoscopy – summary

Laparoscopy continues to evolve as more sophisticated instrumentation allows a greater **variety of procedures** to be performed

The **risks and benefits** of the procedures in many cases have not been fully evaluated

Procedures, such as tubal ligation, ectopic pregnancy removal, and simple adhesion lysis, appear to be **safely and efficiently** performed laparoscopically.

But more complicated procedures still need to be **evaluated** to determine the safest, most cost-effective, and most efficient procedure.

Laparoscopy – conclusion

Laparoscopy provides a **vital tool** for diagnosing pelvic pain.

Laparoscopy provides **first hand visual comprehension** of the problem as well as an immediate opportunity to continue with **therapeutic surgical correction**.

In the past, many of these procedures would have been limited to laparotomy and would have required a prolonged recovery period.

Thank
you

