Laparoscopy in the dog: Material, technique and normal anatomy

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Laparoscopy: principles

- Laparoscopy is a **surgical technique** used to diagnose and treat a range of abdominal or pelvic problems through a scope (laparoscope) that is placed in the abdomen through a small incision.
- Laparoscopy is performed under **general anaesthesia**.
- The scope is passed into the abdomen through an **incision** made in the abdomen. The physician may also make one or more additional small incisions to pass specialized surgical instruments into the abdomen.
- The abdomen is filled with **carbon dioxide gas** to keep the walls separated and provide the physician with a good view.

Indications for laparoscopy

- Ovariectomy
- Ovariohysterectomy
- Cryptorchidism
- Gastropexie
- Inspection + biopsy
  - liver
  - kidney
  - pancreas
- + others (ev laparoscopically assisted)

Portals

LAPAROSCOPY: preparation

- Clipping
- Emptying bladder
- Gastro tube
- Disinfection
- Draping
**PROTOCOL LAPAROSCOPY:**
- General anaesthesia + Dorsal recumbency
- 1st puncture with Veres needle
- Pneumoperitoneum by introducing CO₂ to 10 mm Hg
- Stab incision + introduction cannula with sharp trocar
- Introduction optic + inspection abdominal organs
- 2nd puncture with needle under visual control
- Stab incision + introduction 1st instrumental cannula
- Introduction of instruments
- 3rd puncture = 2nd instrumental cannula: idem

**Potential laparoscopic complications**
- Anaesthesia related
  - Veress needle/trocar insertion
    - Injury to abdominal wall vascular
    - Perforation of organs
    - Perforation of hollow viscus
  - Insufflation
    - Subcutaneous emphysema
    - Peritoneal tenting
    - Inappropriate insufflation
    - Pneumothorax
    - Gas embolism

- Operative complications
  - Bleeding
  - Tissue injury
- Technical problems
  - Lack of experience
  - Equipment related problems
Visual abdominal structures

- Diaphragm
- Liver
- Gallbladder
- Spleen
- Pancreas
- Intestine
- Omentum
- Bladder
- Kidneys
- Uterus
- Ovaries

LIVER BIOPSY METHODS: LAPAROSCOPY VS ULTRASOUND VS FINE NEEDLE ASPIRATION
Keith Richter

- Laparoscopy gives the clinician the advantages of a laparotomy (large sample size, ability to best direct sampling, and ability to take multiple samples, thus resulting in the highest accuracy) with a relatively minimally invasive procedure.
- The complication rate (especially hemorrhage) is far less than with ultrasound-guided biopsy in the author’s practice.
- For these reasons, it is the author’s method of choice for obtaining hepatic biopsy specimens in most cases.