ENDOSCOPIC SURGERY IN GYNECOLOGY
Volume I

LAPAROSCOPY
An Illustrated Manual for the Patient Informed Consent Process

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Preface

Laparoscopy is a well-established procedure for the diagnosis and therapy of diseases and alterations of the inner genital. The innovative development progress of video camera and instrumentation technology allows laparoscopic procedures to be performed at an increasingly complex and challenging level. Through the use of this minimally-invasive technique a vast variety of alterations can be visualized very precisely and managed gently. Laparoscopy is a surgical technique increasingly performed on an outpatient basis. As a consequence, the attending physician has a special responsibility during the patient informed consent discussion prior to therapy.

The present manual has been designed in response to the patient's needs to receive comprehensive and concise information during the informed consent process. It allows the physician conducting the informed consent discussion not only to illustrate the general laparoscopic technique on the basis of simple, easily comprehensible pictures, but also to explain to the patient the anticipated situation as well as the intended treatment regimen. As such, the manual can be an important means to build and strengthen the bond of trust between patient and doctor which is indispensable for any therapeutic measure.

Besides, the manual may also be used for medico-legal purposes, since only by receiving clear, comprehensible and comprehensive information the patient will be enabled to give her informed consent to the intended therapeutic intervention.

Prof. Ulrich Karck, M.D.                                            Prof. Michael Runge, M.D.
Instructions

How to use this manual?

The present manual is intended to serve as an aid in the patient-doctor discussions. The text has been kept short deliberately in order to provide the attending colleague with ample space for his or her own explanations and sketches. The combination of images and explanations, supplemented by a consent form that can be filled in for each patient, provides suitable means for the informed consent process to proceed rapidly while ensuring that the patient receives comprehensive information, advice, and instructions.

The manual consists of two components. The image section in the front of the manual depicts on double pages the most common clinical pictures and issues underlying the need for a hysteroscopy or laparoscopy. This section also contains pages explaining the technique and includes images of the normal anatomical situation. On the basis of the patient's individual preferences and needs to receive information, the counselling doctor can discuss one or more of these pages with the patient to suit the initial diagnosis and indication for the planned procedure. The right pages are easy to find with the registers provided.

The back of the manual provides a carbon-copy pad, each page of which shows two schematic drawings and provides an address field for the doctor's office address and a short standardized text. The form can be used to document the informed consent discussions in the form of brief notes. We recommend to define the general nature and objective of the planned procedure as well as potential limitations and complications. This can be complemented by the anticipated condition of the patient by entering the relevant details in the schematic drawings. At the end of the informed consent discussion, the form is signed by both the patient and the physician. The top copy (original) is archived as part of the patient records and serves as documentation and proof that informed consent and advice were actually given, whereas the carbon copy is handed to the patient for reference purposes. In our experience, this is an important aid for the patient to remember the discussions and by that means strengthen her confidence in both the doctor and the proposed course of treatment.

After completion of the procedure, the manual can be useful again - possibly assisted by video prints / recordings that were taken during the procedure – to discuss the actual findings and, explain any follow-up treatment, if planned.
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1. Anesthetized patient
2. Operating surgeon
3. Assistant
4. Scrub nurse
5./6. High-resolution monitors showing an intraoperative endoscopic image
7. Sterile instrument tray
Typical Instrument Set for Endoscopic Surgery

- Grasping Forceps
- Grasper
- High resolution endoscope
- Insufflation needle with safety mechanism
- Cannula for insertion of instruments
Laparoscopy is a procedure that allows intra-abdominal surgery to be performed with the help of special optical devices (endoscopes) that are inserted through a tiny incision ("keyhole") made in the abdominal wall for viewing the intra-abdominal cavity. By introducing special instruments through additional incisions it is possible to perform minimally invasive surgical procedures without the need of creating a large opening in the abdominal wall.
The insufflated CO$_2$ gas lifts the abdominal wall, ...

... to provide enough space for safe positioning of the surgical instruments.
The first steps of any abdominal surgery – umbilical incision, insufflation of CO₂ gas, positioning of endoscope and instruments – are very similar. The further course of the procedure, though, depends on the objective of treatment, individual preferences of the patient, and the intra-operative findings.
Anatomy

View from the navel into the patient’s pelvis
Anatomy

The inner organs of the female pelvis as seen from the umbilicus

- Bladder
- Uterus
- Round ligament of the uterus
- Fallopian tube
- Ovary
- Bowel
- Uterosacral ligaments
Anatomy

Normal position and size of vagina, uterus, fallopian tube, and ovaries in an adult woman.
Detailed view of the normal uterus, fallopian tube, and ovaries.
Assessment of Infertility

Special Procedures during Abdominal Surgery

Blue Dye Test for Assessment of Tubal Patency in Patients Wishing to Conceive.

A probe is positioned in the uterus through which a blue dye test solution can be injected. Provided that the fallopian tube is patent the blue dye solution should discharge from the far end of the tube.
Example of a Blue Dye Test in the Presence of One Obstructed Tube

The right tube is patent, whereas the left one is obstructed.
Adhesions develop under certain pathological conditions, upon inflammation or after surgery. Adhesions may compromise fertility and can be the cause of pain in some cases.
Treatment of Infertility

Removal of Adhesions (Adhesiolysis)

Often adhesions can be dissected with the help of delicate instruments. Under favorable conditions, it may even be possible to re-open an obstructed tube.
Occasionally, the ovaries produce an excess of male hormones. This leads to irregular menstruation and in some cases even to a loss of menstruation for an extended period of time. Afflicted women also suffer from problems related to acne and undesirable growth of hair. They are often incapable of conceiving since they do not ovulate. The ovaries are enlarged and contain many small follicles which produce male hormones in excessive amounts.
Sclerotherapy of the small ovarian follicles by electro-coagulation may induce the ovary to resume normal hormone production. As a consequence, the menstrual cycle resumes, acne and abnormal growth of hair return to normal, and the women again become capable of conceiving.
Assessment of Myomas

Myomas are benign growths that develop from individual muscle cells of the uterine wall.

Depending on their size and position, myomas may cause a variety of symptoms: pressure sensation, pelvic pain, bleeding disorders, infertility.
Myomas of different sizes can be removed with the help of special instruments in the course of an endoscopic intra-abdominal surgery.
Assessment of Endometriosis

Endometriosis is defined as the ectopic occurrence of uterine mucosa, i.e. presence of uterine mucosa in the abdominal cavity outside its normal location (uterine cavity). During abdominal endoscopy endometriosis often presents itself as reddish or bluish nodules.

Depending on its size and exact location, endometriosis may cause a variety of symptoms or discomforts: menstrual pain, pain during intercourse, pain during physical exercise, pain during defecation, adhesions and infertility.

Occasionally, one encounters large ovarian cysts filled with old blood – so-called chocolate cysts.
For the treatment of endometriosis it is important to carefully sclerose or remove all endometrial foci. Pain patients may need to be followed-up with drug therapy.
Ovarian Cysts

Ovarian cysts are defined as fluid-filled neoplasms that grow within the ovaries. Ovarian cysts are frequently symptomatic and often show a tendency to continue growing.

Torsion of a pedunculated cyst.

Cyst with adhesions.
The capsule covering the cyst is incised, ...

... then the cyst is “peeled out” and removed.

Subsequently, the ovary is closed again.
Under certain conditions, the cyst is first isolated with the help of a synthetic extraction bag to ensure that none of the cystic contents leaks into the abdominal cavity. Once the cyst is tightly wrapped, the bag is removed from the abdominal cavity.
In some cases of ovarian alterations, it is not possible to preserve the ovary, but rather it is necessary and medically reasonable to remove the ovary.
In approx. 1% of all pregnancies, the embryo fails to implant in the uterus, but rather becomes embedded in the fallopian tube. Surgery is required in the majority of such cases; the tube can be preserved in about half of the patients.
In progressive stages of tubal pregnancy or in cases of strong hemorrhage it is often necessary to remove the fallopian tube.
Incisional line for the surgical removal of the uterus.

Incisional line for the surgical removal of the uterus.
In some cases of uterine pathologies, it is advisable to remove the uterus. However, this involves that the afflicted women must have finished their family planning. In the most gentle type of surgical procedure, the uterus is removed using a vaginal approach. In many cases, this may be facilitated, or made possible at all, by combining the technique with an abdominal endoscopy.
Women who are certain that they do not wish to conceive in the future, may elect to have their tubes occluded. This can be executed by electro-coagulation or by application of titanium clips. The method fails in approx. 0.5% of women.
WITH COMPLIMENTS OF KARL STORZ—ENDOSKOPE