Ministry of Public Heals Service of Ukraine
«Ukrainian Medical Stomatological Academy»

«APPROVING»
on the sitting of chair of obstetrics and
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gynecology №1
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**METHODICAL POINTING**
for the independent work of students for preparation to practical lesson

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Poltava – 2019
Preparation and postoperational management of gynecological patients

1. Methodical background of theme

With introduction of endoscopic operative methods of treatment in practical medicine frequency and amount of complications went down considerably, duration of stay of patients in permanent establishment, genesial prognoses became better. The study of basic endoscopic operations, methods of their implementation, technical features of tool allows to capture in practice realization of operative interventions taking into account testimonies and contra-indications to those or other methods, and development according to plan of realization of operations. The important constituent of this employment is prognostication of possible complications, determination of subjects of doctor for their warning in case of occurring of complications is their timely diagnostics and treatment.

2. Educational purpose

A student must know:

1. Types of endoscopic operations which are used in obstetrics and gynaecology.
2. Terms of realization of operation.
3. Technique of execution of operation.
4. Indications and contra-indications to operation.
5. Complications, related to technical implementation of operations and anaesthetic providing.
6. Principles and methods of anaesthesia during endoscopic operations.

A student must be able:

1. To define terms, shows and contra-indications to realization of endoscopic operations depending on a clinical situation.
2. To pick up the set of tools for implementation of laparoscopy and hysteroscopy.
3. To lay down protocol of endoscopic operations.
4. To prepare a patient to the operation, depending on urgency and to develop according to plan of her implementation.

5. To conduct a post-surgical supervision, in good time to diagnose appearance of complications.

6. To determine a necessity and volume of methods of anesthesia and reanimation during gynaecological operations.

**A student must master:**

1. Technique of execution of endoscopic operations (on a phantom).

2. Record of protocol of laparoscopic operation and hysteroscopy

3. A plan of inspection of women before an urgent or planned operation.

**3. Educator purpose**

The students of professional responsibility have forming for the somatic and genesial health of woman, in the case of the use of endoscopic operations in obstetrics - responsibility for a mother and fruit. Bringing up of principles in a relations doctor-doctor, doctor-patient, medical relatives of patient.

**5.1. Preparatory stage**

At the beginning of class teacher acquaints students with the basic tasks. For control of initial level of knowledge test questions should be used.

**5.2. Basic stage**

Minimally invasive, laparoscopic surgery is, and must always be, considered major surgery. Therefore, it is important to carefully prepare the patient for surgery both psychologically as well as physically. The surgeon must also be prepared by adequate training and practice in the techniques that are necessary to complete the procedure in a safe and efficient manner. Patient preparation begins with the initial decision to perform laparoscopic surgery, and although it is tempting to convert most procedures to a minimally invasive route, the surgeon must consider if the particular pathology should be approached in this manner and is in the best interest of the patient. Just as importantly, the surgeon must honestly evaluate his/her own ability and training.
Surgical interventions in gynecological practice is used only when the conservative methods of treatment have been tried. There is a possibility, that the conservative methods of treatment will be of no use and operation is the only way for the patient's convalescence, and sometimes for saving her life.

Each operation is performed according to the certain indications. *Indications* are the aggregate of causes which determine the necessity of some surgical intervention.

Indications for the operation have to be carefully thought out by a doctor and written down into the case history. It is also necessary to take into account the presence of contra-indications, and only after analysis of all the data one should decide the question about the kind and volume of the operation, taking into account woman's age, presence of children, desire to have children later or on the contrary, contra-indications to pregnancy according to the health state. Operation has not only to remove the cause of the disease, but also to preserve functions of woman's organism — menstrual, sexual and reproductive. "The final aim of any operation is neither the destruction of the sore organ or its removal, but the renewing of the integrity and all its functions", — wrote A.P. Gubarev.

Extraordinary important is the correct diagnostics. It is necessary to use all possibilities of the clinic or any other gynecological permanent establishment in order to reveal diseases of genitals or concomitant diseases, that can be contraindications for narcosis or operation itself, to prepare a woman properly for the operation and to avoid annoying unexpectedness during surgical intervention, which sometimes make a surgeon change in advance determined plan and operation volume. Establishing, that there are absolutely no contra-indications to surgical treatment of this patient, a surgeon must choose the most appropriate operation method namely for this patient.

Taking into account mentality peculiarities of the patient, that is being prepared for operation, and her protection from traumatizing and stress is the first and foremost task of all the surgical gynecological department staff. Insufficient tact in attitude to patient,
indifference can make worse the results of the perfectly executed in technical plan operation. One should remember, that it is very hard for a patient to dispose herself to necessity of surgical intervention psychologically, and even women with strong nervous system are afraid of the operation. That's why the behaviour of a doctor and everybody, who communicates with the patient has to be positive, mood must be optimistic. The patient must not have doubts about the necessity of the operation and its positive effect on her health. Patients, which are hospitalized in planned order, should be accommodated in one ward with those, who recover after operation and on the contrary, they must be isolated from the recently operated patients. Comfortable atmosphere in department, attentive attitude of medical staff, clearness of prescriptions execution create favourable psychological climate and facilitate anxious time of operation waiting.

However, it is impossible to take into account only psychotherapeutic effect of a word, it is necessary to conduct medicinal therapy, to provide full value daily and especially night rest. With this aim Novopassit, Valerian drops, Seduxen, Sibazon, Relanium, Trancsen during the day and especially before going to bed are recommended.

**OPERATIONAL UNIT**

The operational unit of gynecological clinic consists of such parts: preoperative room, rooms for patient preparation, material room, operating-room.

*Preoperative room.* In this room the surgeon and his assistants wash the hands, dress in operation clothes, aprons, masks. The operation brigade is ready to dress sterile surgical coats and to begin the operation.

*Room for preparation of patient for surgery.* It is recommended to prepare a patient for operation in room, that is situated near the operating-room. It deprives the patients of negative emotions from the contemplation of the operating room.

*A material room* is set for keeping of operation linen, gauze, cotton wool, instruments. This room is to be isolated from the other rooms. Materials into operating-room are given through special window.

*Operating-room.* There must be at least two operating rooms in surgical gynecological
department: "clean" and "purulent", because in practice occurs that aid to both non-infected and infected patients should be given.

"Clean" operating room has to be larger, 1-2 surgical tables can be situated in it. In "purulent" operating room not only patients with the fixed diagnosis of purulent process in genital organs are operated, but also those that subject to surgical intervention for emergent indications, because a pus presence can be diagnosed in insufficiently examinated patients during the operation. Then operating-room should be carefully cleaned up and disinfected.

Demands on cleaning:

- Operating-room, preoperative and material rooms are situated in the zone of sterile health regimen. A zone of sterile regimen needs keeping special demands previous cleaning is dusting the furniture, devices and floor bel beginning of each workday
- current cleaning (keeping of cleantiness and order in the operatinj — during the operations the gauze balls, serviettes, instruments, th dentally have fallen down on the floor are cleared away; if a liquid the floor, it must be wiped off immediately
- postoperative cleaning — during intervals between operations
- finishing cleaning — at the end of the workday: floor washing, humid out walls, window-sills, furniture with disinfectants use. Cleaning i irrespective of the fact, whether there were operations in present day,
- general cleaning (disinfection of the operational unit) is made once i

After cleaning the operating-room is decontaminated by means of lamp for an hour.

Sufficient illumination is of particular importance. It is necessary member, that abdominal operations on internal genital organs are made in the pelvis cavity that's why the illumination by means of operating s lamp is high-effective. During vaginal operations it is better to use the so gynecological lamps, that in addition to daylight allow to focus the I horizontal direction and to enlighten the operative field well.

Temperature in operating-room is to be kept within 20-25°C. Sui ventilation or air-conditioning are also necessary.
STERILIZATION OF INSTRUMENTS

The main kind of sterilization is thermal decontamination. Large m of microorganisms can exist only in certain thermal conditions, and vcrj top temperature for majority of vegetating microbes is 50°C. The spores, pre by heat-resistant membrane, can endure a higher temperature. Highly sei microorganisms (non-spore-forming bacteria, viruses, fungi) perish temperature of 100°C for 2 minutes, at temperature 121-132°C (steam pressure) — for 1 min, in case of action of dry heat (temperature is 160-1 — for 1-3 min. Light-resistant flora (hepatitis virus, pathogene of gas-gaiij perish accordingly in 5, 1-2, 1-4 minutes. Clostridia, Anthrax bacillus pei 10 min. at boiling, in case of action of higher temperature — in 1-4 min. A resistant spore-forming flora (Clostridium tetani, CI. botulini) perish in 30 minutes at boiling, at steam under pressure action — in 12-25 minutes, at i of dry heat — 30-60 min.

**Burning.** In the flume of binning alcohol (600°C) all the microorganisms that are situated on the smooth face of scalpels, scissors, trays etc are perished. However, to reach decontaminating of other metallic instruments, especially of complicated form, it is required to warm them to the temperature of red heat, after which the material becomes fragile and is unfit for use. Also high temperature is reached only on flame surface, and the instruments, submerged into alcohol, under flame are not warmed to the necessary for sterilization temperature, that's why this method is inexpedient for use in permanent establishment. It can be used only in the case of the extreme situations, when there exists a threat to patient's life, and other methods of sterilization are not accessible.

**Sterilization by dry heat.** Apparatus for dry heat sterilization are used for decontaminating of laboratory glassware — Petri dishes, retorts, test-tubes, metal instruments — mirrors, spatulas, curettes, dressing forceps, metallic catheters etc. Sterilization is held at the temperature 180-200°C. A sterilization process continues for 2 hours, from which about an hour is necessary for warming-up the device to 180°C, 40 minutes — on sterilization itself, 20 minutes on cooling the temperature to 80-90°C.

The disadvantage of this method is a long duration of working cycle, suitability only
for decontaminating of heat-resistant materials.

**Boiling.** It is used for sterilization of surgical instruments. Sterilizer is filled with distilled water, 2 g of Sodium hydrocarbonate per each 100 ml of water is added. Boiling continues for 30 minutes. For contemporary conditions this method is used rarely, but in some situations it is necessary.

**Sterilization by steam underpressure.** The method of using the raised steam pressure allows to get higher temperature, at which microorganisms' spores perish. At pressure of 1 atmosphere the temperature reaches 120°C, sterilization time is 45 minutes; pressure in 2 atmospheres provides a steam temperature 133°C, sterilization time is 20 minutes.

In steam sterilizers the so-called autoclaves bandaging material, surgical garb, serviettes, instruments are sterilized. Sterilization is carried out in sterilizer box and then the material is putted into autoclave. Into the sterilizer box a sterility indicator is putted also, that allows to check, whether there was reached the temperature, necessary for decontaminating. The holes in sterilizer box have to be opened. During sterilization process the staff controls pressure and temperature in device. After finishing the sterilization time autoclave is turned off. When the pressure falls down to atmospheric, drums are taken out from device and the holes at once for preventing steam condensate on the material are closed. Sterilization in autoclaves needs complicated apparatus, that's why it is carried out in special rooms. This method for contemporary conditions is effective and basic in surgical permanent establishments.

Autoclaves, like any other device working under pressure, are potential source of danger because of explosion possibility. Aspecially trained staff is allowed to work with autoclaves.

Laparoscopy and hysteroscopy instruments with optical parts have separate rules of sterilization.

*A sterilization control* is carried out by means of bacteriological, technical and thermal methods.

*Bacteriological method* is the most exact, but it has only retrospective value, because
results can be received only in 1-2 days.

Technical methods. Control of pressure-gauges and thermometers indexes in the autoclave take place during sterilization.

Thermal control is based on the ability of some substances to discolour or to fuse under the action of the temperature. Mikulich test is very old but still rather widespread. They write the word "Sterile" on a peace of paper, smear it with 10% starch solution. When the starch gets dry, they smear it over with Lugol's iodine solution. A paper becomes dark, the word "Sterile" becomes invisible. At temperature 100°C a compound of starch and Lugol's iodine solution are ruined and inscription becomes visible. This test for contemporary conditions is unconvincing, because a considerably higher temperature in the autoclaves is used.

Tests with powdery substances have higher effectiveness. At the fixed temperature they fuse and transform into compact mass. Most frequently the following substances are used: sulfur (melting temperature 111-120°C), antipyrine— 113°C, resorcin — 110-119°C, benzoic acid— 121°C, urea — 132°C, phenacetin — 134- 135°C. For control of dry heat sterilization thiourea — melting temperature 111-120°C, siccine acid — 180-184°C, ascorbic acid— 187-192°C are used.

A very comfortable method is using of coloured ribbons, that change their colour depending on the temperature.

If temperature-indicator does not discolour after finishing the sterilization time, material is considered to be nonsterile and nonsuitable for use.

-DISINFECTION OF DIFFERENT OBJECTS
1. Metal instruments, glassware are sterilized by boiling in distilled water during 30 min; in 15% Sodium hydrocarbonate solution in distilled water during 15 min or in air sterilizers at temperature 120° during 45 minutes.

2. The wares from polymeric materials are sterilized by immersion into disinfectant with the following washing in water. Disinfectants and their action time are the following:
• Chloramine B 0,25% — 30 min
• Chlorhexidine gluconate 1 % — 30 min
• Sulfochlorantinc 0,2% — 30 min
• Desoxone (13%) – 30 min

3. The workplace surfaces are processed by means of double wiping with disinfectant with 15-min interval of spraying – action time is 60 min. Disinfectants: Chloramine B 0,75% with 0,5% Solution of detergent, Chlorhexidine gluconate 1 %, Sulfochlorantine 0,2%.

4. Rubber wares (ice pack, rubber tubes of different devices) are processed by double wiping with disinfectant with 15-min interval and the following washing in water. Disinfectants: Chloramine B 1 %, Hydrogen peroxide 3%, Chlorhexidine gluconate 1%, Sulfochlorantine 0,2%.

5. Sounds, rubber catheters are sterilized by boiling in distilled water during 30 min, in 15% Sodium hydrocarbonate solution in distilled water during 15 min, or by means of autoclaving — saturated steam under pressure at temperature 110°C.

6. Stethophonendoscopes, tape-line are wiped twice by Chloramine B 0,5% or Chlorhexidine 1% with 15-min interval.

7. They immerse thermometers immerse into solution of Chloramine B 0,5% for 30 min; Hydrogen peroxide 3% for 30 min; Chlorhexidine gluconate 0,5% for 30 min; Sulfochlorantine 0,2% for 30 min.

8. Oil-clothes — aprons, sacks, mattresses are wiped with by Chloramine B 1% solution, Chlorhexidine gluconate 1%; Sulfochlorantine 0,2%.

9. Bed oil-cloth are immersed into Chloramine B 1% solution for 30 min; Chlorhexidine gluconate 1% for 60 min; Sulfochlorantine 0,2% for 30 min, Sodium hypochloride 0,25% for 15 min.

**PREPARATION OF THE PATIENT FOR THE SURGERY**

During preparation of the patient for the planned surgery a careful clinical-laboratory examination including clinical blood test, biochemical blood test, analysis of blood on syphilis and AIDS, determination of blood type and rhesus-factor, analysis of
hemostasis system, general urine analysis, investigation of vaginal microflora, smears from external surface of cervix and its canal on atypical cells, ECG, X-ray examination of chest are made.

Patient is examined by stomatologist (if it is necessary he sanifies the oral cavity), by therapeutist, anesthetist. For indications the patient is consulted by oculist, neuropathologist, at presence of varicose veins or thrombophlebitis — by vascular surgeon. In case of finding of deviations from norm, correction is made — treatment of anaemia, sanitation of vagina. For patients with malignant tumors concerning the additional methods of examination the X-ray examination of stomach and bowels, proctosigmoidoscopy and chromocystography, in case of infertility, endometriosis, uterine corpus tumors — hysterosalpingography or contrasting sonography are carried out. Inoculation of vaginal discharge for research of microflora and its sensitiveness to antibiotics is made.

Especially importuni is the preparation of the aged patients for operation, i with cardiac-vascular pathology, with malignant tumors. Suitable preparatioi prescribing of vasodilators, hypotensive, diuretic agents, cardiac glycoside; cocarboxylase, vitamins allows to prevent complications on the part of cardial vascular system and provides a favorable duration of operative and postoperali v period.

On the day before operation a woman does not take shower, she may onl drink a glass of sweet tea, in the morning — no breakfast, she is made a clcansinj, shaving a hair from pubis and external genitals, giving a purgative enema, mak in hygienic douche. Just before the operation the woman empties urinary bladder, permanent catheter for the operation time is inserted.

Patients' preparation to vaginal operations, or to operations with acccs through anterior abdominal wall (hysterectomy) has some peculiarities. Previous! for such patients sanitation of vagina to reaching the 1st degree of vaginal eontei is made: syringing of vagina with antiseptic solutions, introduction of tampon with medical emulsions. In operation day vagina is processed with alcohol and sterile tampon is introduced. In case of presence of decubital ulcers on the eervi in patients with uterine prolapse it is necessary to reach their healing. Absenc of infection in vagina considerably decreases
the risk of postoperative purulent inflammatory complications development.

In the evening before the operation the patient is given sleeping-dnij^ (Phenobarbital 0,1-0,2g, Nitrazepam 0,005-0,01g, Noxyron — 0,25-0,5 g), trail quilizers (Seduxen — 0,0lg, Nozepam — 0,0lg, Elenium — 0,005g). For patients with excitable nervous system tranquilizers are prescribed repeatedly hours before the operation.

For 30-40 min before operation premedication is made: Atropine or Methii cin — 0,5-0,8 mg, narcotic analgesics (Promedol — 20 mg, Fentanyl — 0,1 mj Talamonal — 2 ml), antihistamines (Dimedrol — 0,02 g) are used for this.

Preparation of the patient for urgent surgery in majority of cases is great limited in time (sometimes up to several minutes). If circumstances allow, emptying of bowels by means of purgative enema (in case of bleeding enema i contra-indicated) is carried out. Before the operation, that is performed undo endotracheal anesthesia, if the patient had meals not long before, it is neessar to make gastric lavage or aspiration of gastric contents with aim of Mendelson' syndrome prophylaxy (regurgitation can happen during the operation and acr stomach contents can get into trachea and lungs). If it is necessary hair on ptibi is shaved. If possible, the patient takes a shower. Obligatorily emptying of urinur bladder or introduction of permanent catheter is carried out.

Premedication is made immediately in operating-room, mentioned ubov medications are introduced intravenously.

ANAESTHESIA OF GYNECOLOGICAL OPERATIONS

For anesthetizing of great gynecological operations most frequently combined endotracheal anesthesia in combination with neuromuscular relaxant and with artificial pulmonary ventilation (APV) is used. This method allows to maintain sufficient passability of respiratory tract in any patient's position, provides maximum muscles relaxing and absence of pain sensitiveness with minimum amounts of anesthetic, and also they use epidural anesthesia.

Such stages in realization of general anesthesia are carried out:

• premedication
• initial narcosis (intravenous introduction of Thiopental sodium or Hexenal in dose 6-8 mg/kg; in case of blood loss, allergy, bronchial asthma — Ketamine in dose 2 mg/kg)
• introduction of depolarizing muscle relaxant (Dithylinum, Lystenon — 2 mg/kg)
• mask APV and intubation of trachea
• supporting of basic narcosis (APV with Nitrous oxide and Oxygen; intravenous introduction of narcotic analgesics, neuroleptics and tranquilizers; total muscle relaxation; supporting of adequate gaseous exchange and hemodynamics, blood volume correction)
• withdrawing of narcosis (canceling of inhalative anesthetics introduction, inhalation of Oxygen; introduction of antidotes for neuromuscular relaxants control for renewing of consciousness, appearing of protective reflexes)
• extubation
• supporting of stable breathing and blood circulation

Anesthetist has to be prepared for anesthetizing in advance: to check out the readiness of narcosis apparatus, presence of necessary medications and oxygen in oxygen cylinder. On the sterile table there must be all the necessary instruments: laryngoscope, intubation tubes, sterile single-use syringes, mask, medicines. It is necessary to keep an eye on the patient's state permanently and fill in the narcosis card.

Small in volume and short-term gynecological interventions also need adequate anesthetizing because of great pain intensity, which appear in the result of irritation of high-sensitive uterine reflexogenic zones. With aim of anesthesia intravenous anaesthetizing by Thiopental sodium, Ketamine or Ketanest, neuroleptanalgesia, ataralgesia are used. Local anesthesia is used only in case of presence of contra-indications concerning the general one: acute inflammatory processes in upper respiratory tracts, full stomach, and also in case of absence of conditions for performing narcosis or patient’s refusal from general anaesthesia. The basic method of local anaesthetizing at uterine curniage, punctures is patacervical anaesthes that is reached by introduction of anesthetic (Lidoeaine 0,25-0,5%) into pin metrial cellular
tissue, where nervous plexes are situated. For paraeervu anaesthesia it is necessary to prepare a Novocaine or other anesthetic, syringe 20 ml capacity and a long needle.

**PREPARATION OF PERSONNEL FOR OPERATION**

**Personnel hands scrubbing**

*Method of scrubbing with "Pervomur".* Surgical team wash hands w soap under running water during 3-5 min, then they immerse them into hi with solution, made from 10 l of distilled water, 17 ml of perhydrol and 6°- nil formic acid, and during 3 min they process the hands with help of sterile servie

*Method of scrubbing with Degmicide.* Hands are washed with brush ; soap under running water during 5 min, dry and process them with two stei serviettes, moistened by 1% solution of Degmicide, during 3 min with e< serviette.

*Method of scrubbing with Chlorhexidine.* Hands are washed with sc under running water, then they are dried with 0,5% solution of Chlorhexidim 70% Ethyl alcohol in amount of 5-8 ml and during 2 min rub it into skin.

Any of the methods does not guarantee absolute sterility of hands, thi why all the operations are performed in sterile surgical gloves.

**Dressing of sterile surgical coat**

After scrubbing medical nurse is the first to enter the operating-room : with other nurses' help she proceeds to dressing of sterile surgical coat. ' nurse opens the sterilizer box with sterilized operating coats. The operating m checks out appropriateness of operating coats for use by means of stcri indicator, then she takes one out unfolds it and dresses. A practical nursi another nurse tie behind the strings and belt of the coat. Surgeons dress themselves independently. An operating nurse gives tr unfolded surgical coats, the nurse ties the belt. If there is need, operating m can help surgeons to tie up string on sleeves.

**Dressing of sterile surgical gloves**

The practical nurse opens sterilizer box with gloves, checks out their steri by means of
indicator. An operating nurse pulls on gloves herself, and gives into the glove as deeply as possible. Dressed gloves are wiped by 96% alcohol to remove the talc remains. On external gloves surface there must be no talc, because, getting on peritoneum, it causes aseptic inflammation giving rise to forming of abdominal adhesions. If during operation glove puncture has happened accidentally, it should be replaced immediately.

**LAPAROSCOPY**

**PATIENT EVALUATION** Initial patient evaluation considers the indications and contraindications of laparoscopic surgery. There are no hard and fast rules and even the term “absolute contraindication” must be considered as a guideline, rather than a final decree.

**ABSOLUTE CONTRAINDICATIONS**

There are very few absolute contraindications as previously noted. With increased anesthesia ability, even some of these may not be considered absolute.

- Severe cardiac disease: (Class IV) these patients may not tolerate the deep Trendelenburg positions necessary during most operative laparoscopy to maintain an adequate pneumoperitoneum that is frequently required for satisfactory vision and instrument movement.

- A hemodynamically unstable patient with the need for control of bleeding probably should be approached by laparotomy. However, many surgeons believe that they can rapidly enter an abdomen safely laparoscopically, even in the face of a ruptured ectopic, for example.

- Intestinal obstruction with distended bowel is best approached by laparotomy, however, with some of the open laparoscopy techniques, it may be possible to utilize laparoscopy even in these conditions.
RELATIVE CONTRAINDICATIONS

• Multiple previous major surgeries must be considered a possible contraindication, depending upon both the entry technique and the skill of the operating surgeon. However, utilization of left upper quadrant insufflation techniques or open laparoscopy may afford safe entry even in the event of multiple previous surgeries.

• Morbid obesity may be daunting to the inexperienced laparoscopist, patients as heavy as 120+kg often may be candidates for laparoscopy.

• Pregnancy beyond five months gestation must be approached with a great deal of caution as the pelvis is almost completely filled with the enlarged uterus. Some surgeons have used gasless laparoscopy in more advanced pregnancies. However, some studies have shown that the CO2 gas of the pneumoperitoneum does not harm the fetus.

• Severe, chronically ill patients may present anesthesia problems, but may still be approached cautiously with laparoscopic surgery. It is important not to compromise the respirations with a pneumoperitoneum that is too large.

• The patient should not be compromised by laparoscopic surgery if malignancy is a possibility. If a mass is known to be malignant and the surgeon does not have the skills necessary for complete removal without rupture of the mass, then laparoscopy is not the operation of choice. Some gynecologic oncologists have the skills not only to remove a mass, but also to perform lymph node dissections. In the hands of such surgeons, laparoscopy is acceptable.

INFORMED CONSENT

Good informed consent actually provides much more than merely a legal requirement. The patient who has a full understanding of the surgical procedure is much less anxious than one who is fearful because of lack of knowledge. We highly recommend the use of videotapes or movies to explain the surgery. Plastic models or pictures may also be used so that the patient has a full comprehension of her pathology and of the proposed operation. The patient should be given time to ask any questions that may be
of concern to her. It is always best, if possible, to have a member of the family or a close friend present during these discussions. Because of nervousness and apprehension, patients frequently forget the information that has been explained to them and the support person may be able to fill in the blanks. The patient should be honestly informed of the alternative procedures. She should be told that general anesthesia is usually required and this will necessitate the use of a tube being placed into her throat. This may give her a slight sore throat. She should be seen preoperatively by the anesthesiologist who will explain the procedure and risks to her. She should be told how she will be positioned during surgery and of the method used to create a pneumoperitoneum. She should also understand about the placement of trocars and the possibility of injury to bowel or urinary tract. She must be apprised of the risks of injury up to and including death. It is advisable to design an informed consent sheet that is specific for laparoscopy. This should be written in layman’s language. Never promise that the surgery will be accomplished by laparoscopy. It is best to say that if surgery can be performed by laparoscopy, then the patient will usually have certain advantages: quicker recovery time, less pain and less scarring. The patient should be informed at this time regarding her expected postoperative course. She should be advised of the degree of pain that may or may not be expected. She should be encouraged to call regarding any pain that is present for more than 48 hours postoperatively.

PREOPERATIVE ROUTINE
The patient should be seen within 1-2 weeks of the surgery at which time a review of the history and a physical exam should be conducted that at least covers the following:
1. Weight; 2. Blood pressure and pulse; 3. Auscultation of the lungs and heart; 4. Palpation of the abdomen for organomegaly and hernias. 5. Complete bimanual pelvic examination including PAP smear if indicated. Many hospitals require laboratory tests within one or two weeks of the surgical procedure. Most laparoscopy requires a minimum of laboratory tests usually consisting of only hemoglobin and hematocrit and
urinalysis. A coagulation profile may be needed for any patient with a history of bleeding problems.

PATIENT PREPARATION
The medical problems may also need further evaluation by their general medical doctor who may require other laboratory testing such as a multi-panel test. Patients who are over 40 years old often benefit from a chest X-ray if one has not been obtained within the last 2 years. It is important to review her medicines and to inquire about the use of aspirin. Many patients do not consider aspirin a drug and neglect to inform the doctor of its chronic use. If the patient has been taking aspirin it should be discontinued for 3 or 4 days prior to surgery. We recommend that all patients eat lightly for 24 hours and be NPO at least 12 hours prior to surgery. An empty bowel permits better visualization during surgery, and in the event of a bowel injury, decreases the possibility of complications.

DAY OF SURGERY
Since most laparoscopic surgery is performed on an outpatient basis, it is recommended that surgery be started in the morning if possible. The patient is instructed to arrive at least 1.5 hours prior to surgery to allow adequate time for the anesthesiologist to see the patient, and for all laboratory results to be checked. Before the patient receives any medication for anesthesia, review the anticipated surgery with her and again allow opportunity for any questions. When the surgery is completed and the patient is awake, she is given written instructions regarding follow-up visits and how to take care of herself. The instructions should cover when she should bath (anytime), begin to drive (after 24 hours), perform household duties, and when she may return to work. It should be carefully worded to explain expected postoperative discomfort and to differentiate it from severe pain that requires her to contact either the surgeon or a designated contact person with a telephone number that is answered 24 hours a day. Patients should be discharged with all the appropriate instructions and medication or a prescription for pain relief.
INSTRUMENTATION AND EQUIPMENT

GENERAL ROOM SETUP

The setup should be designed to optimize efficiency using the team concept. The team usually consists of the surgeon, a first assistant, a scrub nurse and a circulating nurse. The most recent addition to the traditional team is the biomedical technician. He/she may not be required for the entire case, but it is helpful if they are in attendance at the start, as well as intermittently, and at the end of the case. The technician should be trained and skilled in the use of all electronic equipment, the video camera, laser equipment, and other electronic supplies and be able to possess on-site trouble shooting skills. Since operative endoscopy is completely dependent on high tech equipment, all should be thoroughly checked prior to the start of each case. The circulating nurse is the main coordinator of the team and he/she will be responsible during the procedure for running the video, checking suction and irrigation equipment, and generally providing support and maintaining the steady rhythm of the operating team. The operating room set-up requires an operating table that can be placed in deep Trendelenburg position. It must have rails that will accommodate the stirrups, shoulder braces, and other possible equipment. Most gynecologic surgeons perform laparoscopy from the left side; however, this is an individual idiosyncrasy that started when laparoscopy was performed without a camera and therefore required holding the scope with one hand while leaving the right to manipulate instruments. Generally, if the surgeon is right handed then he/she should stand on the patient’s left side in order to introduce the Veress needle and trocars with the dominant hand. In the ideal OR, to decrease the floor clutter and to allow more room for lasers, fluid monitors and other large equipment, monitors, and most electronic equipment may be suspended from the ceiling along with all gas lines and electric outlets. Many of the commands in the modern futuristic operating rooms can be voice operated and controlled by the surgeon's voice with the help of the HERMESTM system (Stryker Endoscopy, Santa Clara, CA) or OR1™ (Karl Storz Endoscopy, Tuttlingen Germany). This technology uses the latest in electronic control
systems to seamlessly integrate devices and environmental components of the operating room, including overhead mounting systems, lighting, operating room tables, endoscopic equipment, cameras, image capture systems and information networks. It brings all of these technologies under the direct control of the surgical team. Always check the instruments and the equipment before each procedure.

The operating room set-up. Ideally, two monitors would be available with one to each side of the legs; however, if only one monitor is available it should be between the legs. The back table should hold all of the hand-held instruments that may be needed during the case. They should be grouped in an orderly manner just as the back table is arranged during open surgery. A Mayo stand can either be placed between the legs or adjacent to a leg with the equipment that will be frequently exchanged during the procedure, i.e. suction irrigator, scissors and several different types of graspers. After the patient is positioned on the table, anesthetized, prepped, and draped she is then catheterized. The multiple instruments that may be utilized for safe and efficient endoscopic surgery are now described.

VIDEO IMAGING AND CAPTURING
Modern video cameras are based on the solid-state microprocessor chip. There are one or three-chip cameras with a head that attaches to the eyepiece of the laparoscope and connects to the camera controller by a cable. The signal is then fed into the monitor to display the image. Another type of camera is a combination of scope and camera built together with the camera chip integrated at the distal end of the scope so that there are no optical lenses. With this type of system there is direct digital image transmission from the distal tip. The quality of the video display has advanced along with technology. It is important to realize that the image as seen on the monitor is related to the resolution of the camera and the monitor. If one has a resolution capability of 750 lines and the other 500 lines, you will only be able to visualize at the lower level. High definition endoscopic cameras are also available. The HDTV camera and monitor have more than twice the number of scanning lines than the frame of the conventional
videos, making the images more clear. These high-definition systems may prove quite useful in diagnosing endometriosis and early metastatic spread. No perusal of instrumentation would be complete without a look at what is development for the future. There are some limitations to using the two-dimensional view of the surgical field. Depth perception allows surgeons to acquire laparoscopic skills quickly. Although there have been some attempts at using 3-D imaging it has not been well accepted. This is due primarily to the fact that current technology has been limited by the projection systems used to bring the image of the surgical field to the surgeon. New instruments such as the EndoSite Digital Camera™ utilize a personal monitor attached to a headband in front of the user’s eye so the end result is similar to that used by surgeons who wear magnifying binoculars during surgery. The special scopes that are needed come in 0° and 30° 10 mm size.

Video capturing has also become an important part of supplying documentation for record keeping. A high definition capture system such as the Stryker SDC HD™ is designed to capture and route the high definition images without the loss of quality. This equipment allows the surgeon to document their cases on several types of media such as CD or DVD as well as routing pictures directly to a printer.

UTERINE MOBILIZATION

Most laparoscopic surgery is expedited by the use of a good uterine manipulator. This device should be capable of anteverting and positioning the uterus as needed depending upon the procedure. If a standard uterine manipulator is not available, one may insert a uterine sound high into the fundus and attach it with tape or rubber bands to a tenaculum previously placed on the anterior lip of the cervix. There are many types of commercial manipulators.

Ideally, the manipulator should also have the ability to chromopertubate. The tip of the manipulator is usually held in place by a small balloon that may be inflated with a few milliliters of sterile water.
INSUFFLATION INSTRUMENTS
Most techniques of insufflations utilize Veress needle. These springloaded needles are available as reusable instruments, partially disposable, or completely disposable. It is a delicate instrument that has a sharp outer sleeve and contains an inner sleeve with a dull tip on a spring mechanism that retracts back when a resistance is encountered. Without resistance, the dull tip springs forward to protect intraabdominal structures from the sharp tip. If the reusable needle is sharpened frequently it is as functional as, and certainly less expensive than, the disposable type. The disposable Veress needle has an advantage in always being sharp which enhances its use. The spring mechanism should be checked prior to insertion, even with the disposable instruments.

INSUFFLATORS
There are multiple insufflators on the market. The ideal insufflator can deliver rapid, accurate flow rates of CO2 gas up to 15 L/min. However, it is obvious that the gas flow supplied at the outlet of the machine is not what is delivered intraabdominally owing to the diameter and the distance of the connecting tube. In actual measurements, the true amount delivered at the end of the tube may be only 60%-70% of the capable flow rate of the insufflator. Some insufflators such as Thermoflator® (Karl Storz Endoscopy, Tuttlingen, Germany and Turbo Flow 8000™ Insufflator, Gyrus ACMI, Maple Grove, MN) have heating capability to warm the gas, thus decreasing the intraabdominal hypothermic effect of cold CO2 gas and decreasing fogging of the distal lens of the laparoscope. The Insuflow® device (Lexion Medical, St. Paul, MN) is relatively inexpensive equipment that can be attached to the insufflator that will both hydrate and warm the gas.

ABDOMINAL ACCESS INSTRUMENTS
An entire chapter could be used to address this highly debated issue. There are several categories in which all of the instruments may be grouped.
The basic information that should be supplied by the readout of the insufflator is:
1. Insufflation pressure
2. Intraabdominal pressure
3. Insufflation volume per minute
4. Total amount of gas used (the least important)
5. Disposable or reusable
6. Open or closed technique
7. Mini-entry techniques or direct view.

The argument of disposable versus reusable equipment may be focused on trocars and sheaths. The traditional disposable trocars have become popular mainly because the tips are always sharp, thus requiring a much smaller force to achieve penetration than the reusable instruments. The shield that springs out over the tip after entry into the abdominal cavity plays little, if any, role in safety. There has been a continuing area of contention regarding the style of the trocar tip in reusable instruments. Some surgeons favor the pyramidal tip while others extol the virtues of the conical tip. Most trocars today use the pyramidal style tip. There are advantages to each, but sharpness is of most importance in the closed technique. Reusable trocars and sheaths have a distinct economic advantage; however, the necessity of frequent sharpening and cleaning may offset the savings. Trocars are available in many sizes, from 3 mm up to 12 mm and greater. Most standard laparoscopy is performed using a 10 or 12 mm umbilical port for the laparoscope and 5 mm lower abdominal ports for the secondary instruments. There are even smaller trocars that may be used for 3 mm instruments. Most closed technique instruments have sharp tips, which may potentially injure bowel or large blood vessels. This instrument requires opening into the peritoneal cavity prior to the insertion of the sheath and does not develop a pneumoperitoneum prior to its use. The use of vision directed trocars such as the Endopath™ bladeless trocar, a disposable instrument produced by Ethicon Endosurgery, (Cincinnati, OH) is a hybrid that combines a bit of each technique. Another innovation using visual access is the ENDOTIP™ device which is a reusable threaded port that dilates the tissue as it is threaded in (Karl Storz Endoscopy, Culver City, CA). With each of these methods, a
10 mm 0° laparoscope is inserted into the trocar and as the trocar is advanced through the abdominal wall layers, the passage into the abdomen is constantly monitored and, thus, damage to bowel or blood vessels may be avoided. Expandable sheath technology, Step™ (InnerDyne Medical, Sunnyvale, CA) permits the passage of a Veress needle type instrument that has a sheath, which can then be expanded allowing passage of larger sheaths without potential damage, particularly to major vessels. Another dilating trocar uses an asymmetric tip that divides the tissues by dilating through the layers rather than cutting them. One model has a balloon that can be inflated with 10 mL of saline to secure it in place.

LIGHT SOURCE
An adequate light source is absolutely essential for performing laparoscopic surgery, as it is important to have good illumination in order to obtain image clarity and true colors. A 250 W halogen or xenon light source provides excellent light intensity. The temperature of 6000°K obtained from xenon provides true white light that enhances visualization to permit recognition of pathological changes. A fluid light cable that connects the light source with the laparoscope may provide optimal light transmission. The fiberoptic light cord should be handled with care, since the fibers within the housing may be broken if the cord is kinked or dropped. If there is a decreased light transmission, one end of the light cord can be held up to a room light and by looking at the other end it is possible to assess whether a significant number of fibers are broken. Due to the concentrated light intensity at the end of the light cable, a significant amount of heat is produced. Therefore, the end of the light cable should not be placed on drapes nor allowed contact with the skin of the patient in order to prevent possible burns.

OPTICS (LAPAROSCOPES)
It is important to obtain as panoramic a view as possible, allowing the operator to coordinate proper placement of the instruments. Often the surgeons do not realize the magnification afforded by laparoscopy. Indeed, the magnification is one of the many
advantages of this technique. The lenses in the scope enable magnification up to 6 times depending upon the distance between the end of the scope and the object. At 3 cm from the tip to the object, the magnification is 4x and at 4 cm it is 6x. There are several categories of laparoscopes depending on: function, size and angle of view. Function: Scopes may be either diagnostic only or they may be operative. Although most laparoscopic procedures may begin with a 10 mm 0° diagnostic scope, many surgeons prefer operating laparoscopes to be used during the entire case. Most operative scopes have a channel that will allow at least the passage of a 5 mm diameter, 44 cm long instrument. Some scopes have a channel that will allow the passage of 8 mm diameter instruments that can be used in sterilization procedures. These are large diameter scopes that require a 12 mm trocar sheath. The larger diameter scopes may also be utilized for either connecting to a CO2 laser or permitting the passage of a fiber for a YAG laser. Size: The optimal diagnostic scope is a 10 mm diameter instrument. However, as fiber optics have improved through the years, the ability to decrease the size of scopes while enhancing the objective view has increased. Frequently a 5 mm scope is utilized for diagnostics as well as directing the use of 5 mm instruments. Angle of view: When using a 10 mm scope as the viewing instrument during operative procedures, it is optimal to have 0° vision (i.e. looking straight ahead). If a scope is used just for diagnostics, it may be advantageous to have an increased angle of vision to observe a more panoramic view of the pelvis. Operative laparoscopes may have a 6° viewing angle. Other scopes may have viewing angles up to 50°. It is important to mention that on every scope there is the engraved number by the eyepiece that specifies the angle of view. If the scope has an angled view, the direction of vision is always pointing away from the light source attachment.

ELECTROSURGICAL GENERATORS
Electrosurgical generators are designed to produce a high frequency electric energy in either a monopolar or bipolar format. Generators have the ability to deliver the energy in either a coagulation (modulated/interrupted) or cutting (non modulated/continuous) waveform. Many generators have some style of ammeter to permit either visually, or
by sound, the monitoring of the current flow. This is important because it informs the surgeon when complete desiccation of the tissue, either when coagulating a blood vessel or when sealing a Fallopian tube during sterilization, has occurred. Some instruments have built-in circuitry to detect insulation failure or capacitative coupling. The generator may be connected to various instruments including scissors, graspers, needles and bipolar forceps.

OPERATIVE INSTRUMENTS
The instruments used during operative laparoscopy may be divided into the following groups.
1. Graspers – traumatic or atraumatic;
2. Cutting instruments;
3. Coagulating instruments (bleeding control) (Staplers, bipolar graspers, harmonic energy instruments, vessel sealing instruments, ligation and suturing equipment);
4. Morcellating and retrieval instruments;
5. Irrigation suction instruments;
6. Lasers;
7. Specialty instruments (sterilization and mini-instruments).
A complete book would be needed to describe all of the various instruments produced by a myriad number of companies.

Therefore, only examples of instruments will be described.

1. All graspers, whether atraumatic or traumatic may be found in a variety of diameters and lengths. They usually range from 3 mm to 11 mm, however, the most commonly used graspers are 5 mm in diameter and 33 cm long. Longer instruments (44 cm) are designed to pass down the channel of operating scopes. Handles are generally of two basic types – those that will lock (box lock type) and handles that are not locked. The non-locking handles are best used on dissecting type instruments. The tips vary in
design depending upon their use. Some have very rounded tips that are extremely dull and the inside of the jaws are also blunt with rounded ridges. This style of instrument is best used for mobilization of bowel and the Fallopian tubes and may be referred to as atraumatic. The authors prefer the atraumatic grasper with locking handle and long jaws by Aesculap (Tuttlingen, Germany) or Snap-In Snap-Out® II or Optima III Laparoscopic hand instruments, (Gyrus ACMI, Maple Grove, MN). The best way to determine whether an instrument is atraumatic is to grasp the web space between the thumb and forefinger. If absolutely pain free it may be considered atraumatic. The more pronounced and sharp the ridges in the jaw, the more traumatic the instrument. This type of instrument should only be used on tissue that will be removed or on tissue not expected to bleed. It does afford a stronger hold on tissue than the atraumatic type.

2. Cutting instruments are usually scissors; however, lasers, harmonic energy, and electrical energy may also be used to incise tissue. Scissors may be found in a multitude of forms: straight or curved or hooked and may be reusable or disposable. Some are designed with semi-disposable tips that may be replaced after a number of uses or if they become dull. No matter which scissor is used, the most important aspect is having a sharp instrument. Monopolar electrical energy may be used with the scissor for simultaneous coagulation and tissue cutting. Harmonic energy may be used either in the form of a cutting instrument alone, or in the form of a combination grasper/cutting instrument that not only cuts the tissue, but also coagulates.

3. The control of bleeding is the most crucial element in all surgery. For hemostasis, the most commonly used instrument in laparoscopy is the bipolar forceps. Dr. Richard Kleppinger invented this type of forceps and most surgeons refer to this type of instrument as Kleppingers, even though they may not be in the classic form. The use of bipolar, high frequency electrical energy is a safe, inexpensive and reliable type of laparoscopic control of bleeding. Technical improvements in the delivery of radio frequency (RF) energy have resulted in the development of new instruments that not only control bleeding, but also have the
ability to cut. These instruments use low voltage and high amperage. The Ligasure™ (Valleylab, Boulder, CO) is an electrothermal bipolar vessel sealer that applies high current and low voltage, and pressure from the jaws of the instrument to seal vessels up to 7 mm in diameter. This differs from the energy in standard monopolar and bipolar cautery instruments that use high voltage and low current. Technology offers ultra low voltage combined with very high impact sustainable power to permit predictable next generation RF energy to cut, vaporize, coagulate, and seal over a wide range of tissue conditions while minimizing thermal spread and virtually eliminating sticking.

They may now be found in a variety of styles and are extremely useful for rapid cutting of tissue while simultaneously firing a double row of titanium staples for the control of bleeding. The stapler fits through a 12 mm trocar sleeve. The staplers are disposable and use disposable cartridges that have either 48 or 54 titanium staples depending upon which company manufactured the stapler. The staple line is approximately 37 mm with a cut line of 33 mm.

4. The “Holy Grail” of laparoscopy is the most effective method for removing tissue from the body. Presently the two methods of tissue removal are either through morcellation or by use of a sack or some combination of both. The ideal method has to be safe, efficient, and prevent spillage within the abdomen. A retrieval system plays a vital role in laparoscopic surgery. To supply this system it may be necessary to use some type of extraction sack. The specimen bag must be used in the removal of ovarian tissue that has a possibility of neoplasia in order to obviate the dissemination of possible malignant cells and prevent spillage during removal of a benign teratoma. It is necessary that a removal bag be very strong so that it may resist breakage in the face of a large force in pulling it through a small opening. The sack also should be easily deployed within the abdomen and be capable of holding a mass larger than 7 cm such as a Cook sac.

5. Irrigation and aspiration are necessary for operative laparoscopy because without a
clear surgical field the surgeon is blind. Irrigation is used to clear away debris, blood, blood clots, and char that may be produced by electrosurgery or laser treatment. The ideal irrigator must produce enough hydraulic pressure to disrupt clots and assist in aqua dissection. The hand-controlled valve should easily operate both the suction and irrigation. It is important that it be usable with a large enough channel so that large clots may be removed rapidly without clogging the instrument. If the probe tip is to be used for suctioning near bowel, small holes near the tip are useful to avoid pulling bowel into the probe. There are several different types of instruments with varied pumps to deliver the fluid for irrigation such as Endomat™ (Karl Storz Endoscopy, Tuttlingen, Germany).

6. The major types of lasers that are currently used for gynecologic surgery are the CO2, argon, KTP-532 and the Nd- YAG (neodymium-yttrium, aluminum, garnet). Each of these has various indications that are not within the purview of this chapter. The basic instruments that supply these different energy sources are fairly large, expensive, and require specific training in their use.

THE MOST COMMON LAPAROSCOPIC OPERATIONS

LAPAROSCOPIC TUBAL STERILIZATION

Laparoscopic sterilization is the most common type of female sterilization. There are essentially three major methods, however, occasionally a surgeon may still use thermal coagulation.
1. Electrosurgical:
   a. Monopolar
   b. Bipolar
2. Clips:
   a. Hulka
b. Filshie

3. Bands (Fallope ring)

4. Thermal coagulation

All of the methods that will be described may be performed through either a single puncture technique using an operating laparoscope, or through a double puncture technique, using a 5 mm second puncture trocar that may be placed in the midline suprapubic area.

The double puncture technique uses a 5 mm or 10 mm laparoscope that is inserted through the umbilical port. Our preference in recent years has been to use the single puncture technique unless there is difficulty in mobilizing the Fallopian tube. If the single puncture technique is the method of choice, it is very important that a well functioning uterine manipulator be employed. By moving the manipulator it is possible to stretch the tube laterally. The surgeon can control the operative field by moving the laparoscope in and out, to obtain close up or panoramic view, and by moving the instrument inserted through the operative channel. One of the most common causes of sterilization failure is the misidentification of either the round ligament or the uteroovarian ligament for the Fallopian tube. Therefore, it is vital to identify all three structures and to trace the tube to the fimbriae if at all possible, prior to performing the sterilization. Although many of our sterilization procedures are performed under general anesthesia, a large number are accomplished under local. When local is the method, the skin and deeper tissues are blocked using lidocaine. The art, however, is to instil a mixture of 10 cc carbocaine and lidocaine transcervically via the uterine manipulator. The tubes can almost be seen to blanche.

Monopolar electrosurgery is still used by some gynecologists, however, it has lost favor because of its risks of thermal bowel burns. The technique of bipolar coagulation, as originally described by Dr. Richard Kleppinger, is still the most popular form of laparoscopic sterilization and is our suggested form of electrosurgical management.

BIPOLAR

The bipolar Kleppinger type forceps are mainly in use. The tips of the forceps are
where the energy is distributed from one tong to the other. It is therefore important that
the tips enclose the tube as much as possible. Bipolar coagulation provides a more
localized area of tubal burn thus requiring at least 3 cm of tube to be coagulated. The
tube is grasped in the isthmic portion of the tube at least 2 cm from the cornua. If too
close to the uterus there is a risk of creating a uteroperitoneal fistula. The tips of the
tongs should be minimally in the mesosalpinx to avoid too much damage to the blood
supply of the tube and its anastamotic branches to the ovary. The electrosurgical
generator should be set to deliver a power of 25 W in a nonmodulated or cutting mode
to desiccate the tissue sufficiently. If too much energy is used, the tube tends to be
rapidly coagulated on the periphery, rather than through slow coagulation. This may
lead to a sterilization failure. The tube should be coagulated with 2 to 3 contiguous
burns to provide an area of about 3 cm of coagulation. The endpoint of coagulation is
the cessation of current flow. This will supply a relatively accurate indication of
complete coagulation. Most electrosurgical generators have either a visual ammeter or
an audio signal of this endpoint. After completing the coagulation, it has been our
technique to sever the tube in the middle of the burn area with a laparoscopic scissors.
However, there is some controversy regarding this and many surgeons do not cut the
tube believing that it leads to a higher failure rate due to possible fistula formation.

CLIPS
Mechanical occlusion of the tube is most commonly performed using one of two types
of clips. The most popular has been the Hulka-Clemens spring-loaded.

IMPORTANT NUMBERS
2 cm from fundus
3 cm of tube
2-3 continuous burns
25 W power
The clip requires a special laparoscopic applicator that may be passed through the
single puncture operating laparoscope. This instrument is 7 mm and is inserted through
the operating channel.
The clip applicator has four positions.
1. Safe open – In this position the clip is held on the end of the applicator and can be opened and closed without locking. This position is used when the applicator and clip are passed through the operating scope channel. 2. Safe closed – The tube is grasped with the clip and closed to this position. The clip may be removed by opening the clip applicator jaws. 3. Full closed – The thumb manipulator of the applicator drives the metal spring over the plastic jaws of the clip and locks it in place. 4. Full open – The ring on the handle is pulled back and the clip is thus removed from the applicator and left in place on the tube. The applicator jaws are then closed and the instrument is removed. The clip should be applied on the isthmus at least 2 cm from the uterus and should be placed completely across the tube. This can be assured by observing that the tube rests completely against the hinge of the clip. With correct application, the mesosalpinx is pulled up to resemble the shape of an envelope flap.

BANDS
Yoon and associates introduced the silastic band in 1974. This small silastic band is applied to the tube by use of a special 8 mm applicator that may be used through the single puncture 12 mm operating laparoscope. The bands are preloaded onto the instrument using a special plastic loading device. The applicator is then passed down the channel and grasping hooks are deployed from the end of the applicator. The tube is grasped in the isthmic area about 3 cm from the cornua of the uterus. The tube is then drawn up into the inner cylinder of the applicator by the grasping hooks and the silastic band is applied by moving the outer cylinder forward. It is important that a sufficient knuckle of tube is brought back into the applicator to assure that two complete lumens have been occluded. After application of the band, the grasping tongs are moved forward out of the inner cylinder to release the occluded tube. Several problems have been described with the bands. There have been a significant number of complications secondary to tears in the mesosalpinx. Bleeding from this problem can usually be controlled by bipolar coagulation. Postoperative pain is more frequent than with clips or bipolar coagulation. A large number of these patients require an oral analgesic for several days postoperatively.
ECTOPIC PREGNANCY

Pregnancy outside the confines of the uterine cavity has been described for hundreds of years. In the 1800s, the mortality associated with ectopic pregnancy was >60%. Today it accounts for 9% of pregnancy related mortality and less than 1% of overall mortality in women. Although ectopic pregnancy has been recognized for over 400 years, it continues to be an ever-increasing affliction affecting greater than 2% of all pregnancies. Theoretically, anything that impedes migration of the conceptus to the uterine cavity may predispose a woman to develop an ectopic gestation. These may be intrinsic anatomic defects in the tubal epithelium, hormonal factors that interfere with normal transport of the conceptus, or pathologic conditions that affect normal tubal functioning. Besides the symptoms commonly associated with early pregnancy, women with ectopic pregnancy commonly experience pelvic pain and bleeding. The pain is often one sided and the bleeding is often variable and may be the only sign of a complication. It should be noted, however, up to 20% of women with first trimester bleeding will go on to have a healthy pregnancy. Table 2 lists some of the more common signs and symptoms of an ectopic pregnancy to assist the practitioner in differentiating ectopic pregnancy from other gynecologic and non-gynecologic conditions. Until 1970, more than 80% of ectopic pregnancies were diagnosed after rupture, resulting in significant morbidity and mortality. With excellent resolution obtained from pelvic ultrasound, highly sensitive radio-immunoassays for human chorionic gonadotropin (hCG) and increased vigilance by clinicians, greater than 80% of ectopic pregnancies are now diagnosed intact which allows for more conservative management. Awareness of the possibility of an ectopic pregnancy is most critical for early detection. Measurement of hCG with a doubling time of 2-3 days should occur if it is a normal gestation.

SIGNS AND SYMPTOMS SUGGESTIVE OF ECTOPIC PREGNANCY

- Nausea, breast fullness, fatigue, amenorrhea
- Lower abdominal pain, heavy cramping, shoulder pain
• Uterine bleeding/spotting
• Pelvic tenderness, enlarged, soft uterus
• Adnexal mass, tenderness
• Positive pregnancy test
• Serum levels of hCG <6000 mIU/mL at 6 weeks
• Less than 66% increase in hCG titers in 48 hours.
• Serum progesterone <25 ng/mL
• Aspiration of non-clotting blood on culdocentesis
• Absence of gestational sac in the uterus by U/S when the hCG titer exceeds 2500 mIU/mL
• Gestational sac outside the uterus by U/S

DIFFERENTIAL DIAGNOSIS IN CASES OF SUSPECTED ECTOPIC PREGNANCY
• Spontaneous abortion
• Ruptured ovarian cyst
• Corpus luteum hemorrhagicum
• Adnexal torsion
• Pelvic inflammatory disease
• Endometriosis
• Urolithiasis
• Urinary tract infection
• Appendicitis

TREATMENT OPTIONS
Treatment options for ectopic pregnancy have broadened substantially in the past 10-15 years. Prior to this, laparotomy with salpingectomy was the standard of care. Due to better resolution ultrasound and earlier diagnosis, improved microsurgical laparoscopic techniques and chemotherapeutics, a more conservative approach has been taken in order to preserve tubal function. Laparoscopic treatment of this condition is growing in
popularity and is currently considered the standard of care. Even hemodynamic instability is not an absolute contraindication to laparoscopy. The availability of optimal anesthesia, advanced cardiovascular monitoring, ability to convert quickly to laparotomy, and superior magnification given by laparoscopy make it a viable option and possibly the best choice. Laparoscopy also has lower morbidity, shorter hospital stays and decreased costs as well as decreased need for postoperative analgesia, and some studies have also shown that laparoscopy achieves superior pregnancy rates to laparotomy. Since the 1970s, a conservative approach to unruptured ectopic pregnancy has been advocated by many of the leading authorities in our field. There are several different types of conservative surgery that can be performed. These include linear salpingostomy, partial salpingectomy with anastomosis, and ‘milking’ the pregnancy from the distal ampulla.

SURGICAL MANAGEMENT BASED ON LOCATION
The location, size, and extent of the tubal pregnancy are observed laparoscopically. The management of each ectopic pregnancy is based upon these factors. Whatever the surgical approach chosen, adequate hemostasis with minimal trauma is optimal and should be obtained with as little cauterization as possible. All surgical approaches start by identification and mobilization of the involved fallopian tube and inspection of the uninvolved side.

AMPULLARY ECTOPIC
Once diagnosed, if the pregnancy is in the mid-ampullary segment as in the majority of cases, a 5-7 mL dilute solution of vasopressin (20 U/100mL of NS) is used. This is injected with a laparoscopic needle into the mesosalpinx just below the pregnancy and over the anti-mesenteric surface of the segment containing the gestation. It is extremely important to make sure that the vasopressin is not injected directly into a blood vessel as it can cause arterial hypertension, bradycardia and death. Using a laser, microelectrode, scissors, or harmonic scalpel a linear incision is made over the pregnancy approximately 1-2 cm in length. As one makes this incision the contents of
the pregnancy usually begin to extrude. This can be completed by hydro dissection or using gentle traction with laparoscopic forceps. In some cases, more forceful irrigation in the salpingostomy incision may be required to dislodge the pregnancy from its implantation site. Occasionally, coagulation is used to secure hemostasis and is best accomplished with bipolar micro-forceps. Oozing from the tubal bed is common and usually ceases spontaneously. Copious irrigation is used to dislodge trophoblastic tissue and remove blood from the peritoneal cavity. The tubal opening is left to heal by secondary intention, unless the defect is wide and the edges do not come together spontaneously. For such cases, the edges may be approximated with a single 4-0 absorbable suture. If the pregnancy is located in the distal ampullary segment of the tube, then, occasionally, the tubal segment can be grasped and the pregnancy ‘milked’ out the fimbriae of the tube. This can also be done for partially extruded tubal pregnancies and infundibular pregnancies.

**ISTHMIC ECTOPIC**

When the ectopic pregnancy implants in the isthmic portion of the tube, linear salpingostomy is not as successful because typically these pregnancies grow through the lumen of the tube and erode the muscularis. Isthmic ectopic pregnancies have a higher rate of persistence and tubal patency is seldom preserved. With isthmic tubal pregnancy, segmental tubal resection is preferred. This can be accomplished by various means (i.e. bipolar, laser, sutures, or stapling devices). Bloodless resection is optimal and may be accomplished by using bipolar forceps, grasping both proximal and distal to the gestation and coagulating from the anti-mesenteric surface to the mesosalpinx. This is then cut and the mesosalpinx cauterized and cut in a similar fashion. The tube may be reanastomosed at a later date if desired.

**SALPINGECTOMY**

This technique is chosen in the presence of uncontrolled bleeding, tubal destruction, recurrent ectopic in that tube, patient desire, or severe adhesion or hydrosalpinx. The tube is removed from its anatomical attachments. This can be accomplished by
numerous methods including laser, stapling devices, harmonic energy, endoloops, or progressive bipolar coagulation. Progressive coagulation and cutting the mesosalpinx begins at the proximal isthmus of the tube and progresses to the fimbriated end. The products of conception can be removed through a 10 mm trocar sleeve with or without the use of a plastic bag.

INTERSTITIAL/CORNUAL ECTOPIC
Fortunately, these types of ectopic pregnancies are rare with a prevalence of 1 in 5000 live births. Late diagnosis of this type of ectopic pregnancy, and the vascular nature of the cornua account for a mortality rate of 2%-2.5%. Some 2% to 4% of all ectopic gestations are interstitial/cornual. The traditional management of this type of ectopic gestation is laparotomy with salpingectomy and/or cornual resection. This surgery occasionally culminates in hysterectomy. It is important, however, to make a distinction between the interstitial ectopic and a true cornual ectopic pregnancy. The interstitial portion of the fallopian tube is approximately 1 cm long, has a narrow lumen and follows a tortuous course through a thick layer of myometrium. The cornual pregnancy, however, implants in this section of tube but opens to the uterine cavity, allowing hysteroscopy to be a potential method of surgical correction. The interstitial pregnancy implants deeper in this segment of the fallopian tube and is not accessible from the uterine cavity, thus, it is not amenable to hysteroscopic resection. If the diagnosis is made early and the patient is stable, more conservative approaches should be considered. These options include methotrexate locally or systemically, potassium chloride injections locally and prostaglandin administration. Once the diagnosis is confirmed and medical management is not possible, surgical treatment options are explored and consist of immediate laparotomy or a combined laparoscopic, and hysteroscopic approach. Early detection may afford one the option of a combined treatment using laparoscopy/hysteroscopy and methotrexate. If the gestation is truly cornual and accessible by hysteroscopy, it is resected using electrosurgery and removed. If the overlying myometrium is thin, a laparoscopic resection may be possible. But it is always prudent to have these patients typed and crossed for several
units of packed red blood cells as well as consented for laparotomy.

OVARIAN PREGNANCY
Pregnancy located in the ovary itself is a rare occurrence. The incidence is 1 in 6970 live births and 0.7 per 100 ectopic gestations. Table 4 delineates Speigelberg’s criteria for the diagnosis of ovarian pregnancy established in 1878 and still in use today. Management of ovarian pregnancy can be either medical or surgical. Typically, they are diagnosed in the first trimester and can be definitively treated by oophorectomy. The ovarian ligament is grasped with bipolar forceps, cauterized and cut. The mesoovarium is then taken down in a progressive fashion. This can also be performed using an endoloop or with the harmonic scalpel.

CERVICAL PREGNANCY
This type of ectopic pregnancy is also very rare and in the past was treated by hysterectomy. Rubin first described criteria for diagnosis of a cervical pregnancy in 1911 as: cervical glands must be present opposite the placental attachment, 2) the attachment of the placenta to the cervix must be intimate, 3) the placenta must be below the peritoneal reflection of the anterior and posterior surfaces of the uterus, 4) fetal elements must not be within the uterine cavity. Conservative management now is by medical therapy with methotrexate when possible to avoid blood loss and hysterectomy. This has been proven safe, effective and preserves the patient’s fertility options for the future. Multiple case reports and a case series from Albert Einstein College of Medicine in New York have shown successful treatment of cervical pregnancies with selective uterine artery embolization along with methotrexate. This may also be an effective conservative therapeutic option for this complex condition especially when associated with significant vaginal bleeding.

ABDOMINAL PREGNANCY This type of ectopic can either be primary or secondary based on the initial implantation site. Occasionally, a tubal pregnancy will rupture and implant abdominally and continue to evolve. This can also occur with tubal abortions.
The management for abdominal ectopic is strictly by laparotomy as these pregnancies are usually not diagnosed until third trimester. Implantation of the placenta can occur on any organ in the abdominal cavity. The delivery is by laparotomy and there is controversy on removal of the placenta at that time or at a later date. It may be more prudent to leave the placenta in situ after delivery and use the interventional radiologist to embolize the placental bed prior to removal in an attempt to conserve blood loss in this potentially catastrophic situation.

MANAGEMENT OF RUPTURED ECTOPIC PREGNANCY Presently, laparoscopy is considered the gold standard in treating patients with an unruptured ectopic pregnancy. Sometimes patients may present with ruptured ectopic pregnancy and surgical abdomen full of blood and blood clots. Those patients may frequently be approached laparoscopically and there may be no need for laparotomy in patients with a ruptured ectopic pregnancy. There are several factors you need to keep in mind when performing laparoscopy in these patients. Establishment of the pneumoperitoneum and placement of the trocar may be just as quick as performing laparotomy. When placing the Veress needle in the abdomen filled with blood, you may encounter higher initial insufflation pressures, since the tip of the needle may be immersed in blood. Only a sponge stick should be placed in the vagina for uterine manipulation, to avoid disruption of a possible intrauterine pregnancy. After the placement of the umbilical trocar and insertion of the laparoscope, the patient should be placed in steep Trendelenburg position and a suprapubic port should be inserted and grasper introduced for quick localization of the ruptured tube, and to tamponade the bleeding site. After the bleeding area has been compressed, attention should be turned toward the removal of blood and blood clots. A cell saver is a great way to replace the patient’s blood loss with her own blood and it may be utilized whenever a large blood loss is encountered. Blood clots should be removed with the help of the 5 mm laparoscopic suction device. The 10 mm suction does not offer any advantages since it is reduced to 5 mm in the instrument’s handle. The best way to remove blood clots is to apply constant suction on the suction device, and to aspirate the clots and break
them by pulling the suction tip into the 5 mm trocar. This maneuver breaks the clots and helps to evacuate them through the suction aspirator. Try to avoid excessive irrigation since the fluid in the abdomen lifts the bowel, which in turn decreases your area of vision. After the blood has been removed from the abdominal cavity, proper assessment of the ectopic pregnancy can be made and an adequate treatment plan developed.

CONCLUSION
Ectopic pregnancy remains an increasing health problem. Its incidence continues to rise, paralleling the progressive increase in the incidence of its etiologic factors, especially sexually transmitted diseases and advanced reproductive technologies. With improved ultrasonography and minimally invasive techniques, the surgical management of this worrisome condition can be accomplished with minimal trauma. Minimally invasive surgery and medical management have similar success to laparotomy with less morbidity and improved patient care and fertility.

Other endoscopic operations and manipulations
Drainage of small pelvis. *Indications:* acute inflammatory process small pelvis, pelvioperitonitis. During operations organs of small pelvi examined and drainages-microirrigators (polyethylene, rubber tubes, with meter from 2 to 7 mm) are introduced. After introduction, microirrigator is to skin of anterior abdominal wall by silk ligature, once or twice a day medic usually antibiotics are introduced through it. Every time after introductioi sterile bandage is putted.

Ovarian biopsy. *Indications:* infertility as a result of functional ovi insufficienty, scleropolycystic changes in ovaries, suspicion on malignant tin of ovaries. The ovary is put into the field of vision by manipulator, by bi< forceps its tissue is clenched, separated and taken out. Elcttroeoagulalio biopsy place is held. Taken, material is fixed in the formalin solution and sen the histological research.

Ovariectomy. *Indications* for the operation arc polycystic ovaries, suspu on malignant neoplasm. Ligature in the form of the loop is lead to the ovary ovary is stretch through
it, the loop is tighten. Ovarian ligaments are ligated. Ovary is removed from abdominal cavity.

Removal of myomatous nodes. The operation is recommended at presence of small subserous myomatous nodes. The nodes on thin pedicle are clenched by manipulator, a pedicle is cut and coagulated

_During pelvioscopy_ one should made dissection of adhesions, check uterine tubes permeability; _during hysteroscopy_—polyps and knots of: myomatous nodes are removed, adhesions in uterine cavity are intrauterine contraceptives are taking away, electrocoagulation of ducts are performed.

**HYSTEROSCOPY**

_Hysteroscopy_ is the inspection of the uterine cavity by endoscopy with access through the cervix. It allows for the diagnosis of intrauterine pathology and serves as a method for surgical intervention (operative hysteroscopy).

**Method**

A hysteroscope is an endoscope that carries optical and light channels or fibers. It is introduced in a sheath that provides an inflow and outflow channel for insufflation of the uterine cavity. In addition, an operative channel may be present to introduce scissors, graspers or biopsy instruments. A hysteroscopic resectoscope is similar to a transurethral resectoscope and allows entry of an electric loop to shave off tisse, for instance to eliminate a fibroid. A contact hysteroscope is a hysteroscope that does not use distention media.

**Insufflation media**

The uterine cavity is a potential cavity and needs to be distended to allow for inspection. Thus during hysteroscopy either fluids or CO₂ gas is introduced to expand the cavity. The choice is dependent on the procedure, the patient’s condition, and the physician's preference. Fluids can be used for both diagnostic and operative procedures. However, CO₂ gas does not allow the clearing of blood and endometrial debris during the procedure, which could make the imaging visualization difficult. Gas embolism may also arise as a complication. Since the success of the procedure is
totally depending on the quality of the high-resolution video images in front of surgeon's eyes, CO₂ gas is not commonly used as the distention medium. Electrolytic solutions include normal saline and lactated Ringer’s solution. Current recommendation is to use the electrolytic fluids in diagnostic cases, and in operative cases in which mechanical, laser, or bipolar energy is used. Since they are conducting electricity, these fluids should not be used with monopolar electrosurgical devices. Non-electrolytic fluids eliminate problems with electrical conductivity, but can increase the risk of hyponatremia. These solutions include glucose, glycine, dextran (Hyskon), mannitol, sorbitol and a mannitol/sorbitol mixture (Purisol). Water was once used routinely, however, problems with water intoxication and hemolysis discontinued its use by 1990. Each of these distention fluids is associated with unique physiological changes that should be considered when selecting a distention fluid. Glucose is contraindicated in patients with glucose intolerance. Sorbitol metabolizes to fructose in the liver and is contraindicated if a patient has fructose malabsorption. High-viscous Dextran also has potential complications which can be physiological and mechanical. It may crystallize on instruments and obstruct the valves and channels. Coagulation abnormalities and adult respiratory distress syndrome (ARDS) have been reported. Glycine metabolizes into ammonia and can cross the blood brain barrier, causing agitation, vomiting and coma. Mannitol 5% should be used instead of glycine or sorbitol when using monopolar electrosurgical devices. Mannitol 5% has a diuretic effect and can also cause hypotension and circulatory collapse. The mannitol/sorbitol mixture (Purisol) should be avoided in patients with fructose malabsorption.

**Procedure**

Hysteroscopy has been done in the hospital, surgical centers and the office. It is best done when the endometrium is relatively thin, that is after a menstruation. Typically hysteroscopic intervention is done under general endotracheal anesthesia or Monitored Anesthesia Care (MAC), but a short diagnostic procedure can be performed with just a paracervical block using the Lidocaine injection in the upper part of the cervix. The patient is in a lithotomy position. After cervical dilation, the hysteroscope with its sheath is guided into the uterine
cavity, the cavity insufflated, and an inspection is performed. If abnormalities are found, an operative hysteroscope with a channel to allow specialized instruments to enter the cavity is used to perform the surgery. Typical procedures include endometrial ablation, submucosal fibroid resection, and endometrial polypectomy. Hysteroscopy has also been used to apply the Nd:YAG laser treatment to the inside of the uterus. When fluids are used to distend the cavity, care should be taken to record its use (inflow and outflow) to prevent fluid overload and intoxication of the patient.

**Indications**

Hysteroscopy is useful in a number of uterine conditions:

- Asherman's syndrome (i.e. intrauterine adhesions). Hysteroscopic adhesiolysis is the technique of lysing adhesions in the uterus using either microscissors (recommended) or thermal energy modalities. Hysteroscopy can be used in conjunction with laparascopy or other methods to reduce the risk of perforation during the procedure.
- Endometrial polyp. Polypectomy.
- Gynecologic bleeding
- Endometrial ablation (Some newer systems specifically developed for endometrial ablation such as the Novasure do not require hysteroscopy)
- Myomectomy for uterine fibroids.
- Congenital Uterine malformations (also known as Mullerian malformations). Eg.septum,
- Evacuation of retained products of conception in selected cases.
- Removal of embedded IUDs.

The use of hysteroscopy in endometrial cancer is not established as there is concern that cancer cells could be spread into the peritoneal cavity.

Hysteroscopy has the benefit of allowing direct visualization of the uterus, thereby avoiding or reducing iatrogenic trauma to delicate reproductive tissue which may result in Asherman's syndrome.

Hysteroscopy allows access to the utero-tubal junction for entry into the fallopian tube; this is useful for tubal occlusion procedures for sterilization and for falloposcopy.
Complications
A possible problem is uterine perforation when either the hysteroscope itself or one of its operative instruments breaches the wall of the uterus. This can lead to bleeding and damage to other organs. If other organs such as bowel are injured during a perforation, the resulting peritonitis can be fatal. Furthermore, cervical laceration, intrauterine infection (especially in prolonged procedures), electrical and laser injuries, and complications caused by the distention media can be encountered. The use of insufflation media can lead to serious and even fatal complications due to embolism or fluid overload with electrolyte imbalances.

The overall complication rate for diagnostic and operative hysteroscopy is 2% with serious complications occurring in less than 1% of cases.

ABDOMINAL GYNECOLOGICAL OPERATIONS
For performing of abdominal gynecological operations most frequently lower midline laparotomy and incision by Pfannenshtiel are used.

Midline vertical laparotomy
Midline vertical laparotomy provides a sufficient access to organs of small pelvis, gives a possibility to have a view of other organs of abdominal cavity by widening the dissection up, one can carry out the revision of all the organs of abdominal cavity and to conduct necessary interventions. That's why this access is used when during operation there are foreseen technical difficulties (in case of peritonitis, internal bleeding, big tumors etc).

Technique. Along the middle abdominal line (linea alba) the skin and hypodermic fat is dissected with scalpel from pubis towards umbilicus. An incision size depends on the volume of surgical intervention, in case of tumor removal — from its size. The aponeurosis is dissected. At first a small cut with scalpel is made, then it continues with scissors. The muscles are disconnected. The peritoneum is grasped with two anatomic pincers and is cutted between them with scalpel, then incision is continued up and down with scissors. While continuing the incision towards pubic tubercle, one
must be careful for preventing damaging of urinary bladder. To prevent it, only area, that is translucent, under the sight control is dissected.
Stitches on abdominal wall layer-by-layer in reverse order are putted.

**Laparotomy by Pfannenshtiel**
Advantages of this kind of incision is absence of cosmetic defect, especially in case of stitching with subcuticular (cosmetic) suture, better healing of the wound, there never happen such complications as eventration because wound layers are dissected in different directions.

Skin and subcutaneous fat are cut along the suprapubic fold on distance 2-3 cm from pubic symphysis. In inguinal regions from both sides of incision there pass the superficial epigastric arteries, damaging of which should be avoided, and if they dissect them, it is necessary ligate them immediately. Aponeurosis is cutted slightly with scalpel from both sides from the white line, then the incision is continued with scissors into both sides of wound. The upper edge of aponeurosis in the wound center is clenched with Kocher's forceps and pulling it up they snip it off with scissors from the white-line towards umbilicus, as far as skin dissection allows. Muscles of anterior abdominal wall are not dissected, they are separated in longitudinal direction, as it midline vertical laparotomy. Peritoneum is clenched with two pincers rutted in longitudinal direction at first with scalpel, and then with scissors. Taking into consideration the indisputable advantages of this approach, necessary to note, that in ease of Pfannenshtiel incision appearing of subfasi haematoma, difficult access to organs of small pelvis are observed frequently during the operation some problems such as the necessity of abdominal ca\ revision, big size of the tumor are appeared, it is impossible to extent of I incision.

**Salpingo-oophorectomy**
Salpingectomy is carried out in case of ectopic pregnancy, purulent proces; in the tube. Adnexa are removed in case of ovarian tumors, because the li belongs to the structure of its surgical pedicle. In case of tuboovarian tumors, the result of inflammatory
process ovary and tube adhere between themself. It is technically impossible to remove only the tube or only the ovary in this case. Basic indications for oophorectomy are its tumors.

Ovarian tumors have the so-called "pedicle". Ovarian and infundibulopelvic ligaments, part of broad uterine ligament, vessels and nerves, that pass them belong to the structure of anatomic pedicle. Uterine tube also belongs to the structure of surgical pedicle of the tumor.

In case of complication in the form of tumor pedicle torsion, vessels, that belong to the structure of surgical pedicle are pinched, blood supply is disturbed; that's why cystoma's capsule swells are infiltrates with blood. Tumor acquires purple colour, enlarges in size. Peculiarity of surgical intervention in case of cystoma's crus torsion is that forceps should be applied beneath the torsion place to prevent getting into woman's blood toxic products and thromboplast substances, that have appeared in cystoma after its blood supply disturbance, is forbidden to untwist the pedicle in no circumstances!

**Stages of the operation:**
- disinfecting of skin
- midline vertical or transverse incision of anterior abdominal wall
- introduction of retractor and separation of intestinal bowels
- grasping with hand and exteriorization out of uterine tube
- application of Kocher's forceps on mesentery of uterine tube and its uterin end (at adnexitomy forceps are applied on infundibulopelvic ligameni uterine end of the tube and ovarian ligament,
- removal of uterine lube (adnexa), suturing and tubal ligation
- peritonization of the slump
- lavage of abdominal cavity
- report of operating nurse about the presence of all the instruments and serviettes
- suturing of abdominal wound
- catheterization of urinary bladder
EXAMPLE OF THE OPERATIVE NOTES in removal of uterine adnexa (adnexectomy) at ovarian tumor on pedicle

**Indications for the operation:** ovarian cystoma.

**Anesthetization:** endotracheal anesthesia with Nitrous oxide and Oxygen mixture, and neuroleptanalgesia.

- **Operation passing.** The operative field has been processed with 2% iodine spirit solution and by 70% ethyl alcohol, edged by sterile surgical garb. Anterior abdominal is incised layer-by-layer by midline vertical incision. Before cutting the peritoneum, the wound is edged by sterile serviettes and isolated from hypodermic fat. Bowels are separated by serviettes.

- During examination of small pelvis ovarian tumor 20x 15 cm in size was found, Tumor is exteriorized into the wound. It was determined, that the tumor takes ib origin from the right ovary, has a long pediclewhich contains ovarian, infundibulo pelvicum ligaments, uterine tube. The uterus and left adnexa are not changed Kocher's forceps are put on the tumor pedicle. The tumor and uterine tube an cutted off. Catgut suture is laid on the stump. Peritonization by round ligament oi uterus is made.

- Lavage of abdominal cavity is conducted. Calculation of serviettes anc instruments is made. All are presented.

- The incisional wound of anterior abdominal wall is sutured layer-by-layer peritoneum, muscles, aponeurosis — by continuous vicryl suture, skin anc hypodermic fat — by interrupted silk suture.

- Asepsis bandage is dressed.

- There was no bleeding during the operation.

- Operation duration — 40 min.

- **Name of the performed operation:** right-side adnexectomy.

- **Macropreparation:** removed tumor is a pseudomucinous polycystic cystomi with tubercular surface and thick viscous yellow content, 20x 15 cm in size. Inter nal envelope of the tumor is smooth. The capsule is sent on histological research

- **Postoperative diagnosis** — pseudomucinous cystoma of the right ovary.
**Ovarian resection (ovariotomy)**

The operation is performed in case of scleropolycystic ovarian syndrom and renewing of the reproductive ones. *Stages of the operation:*

- disinfecting of skin
- midline vertical or transverse incision of anterior abdominal wall
- introduction of retractor and examination of genital organs
- separation of intestinal bowels
- ovarian fixation by fenestrated forceps
- cutting off pathologically altered ovarian tissue by scalpel
- putting of interrupted suture on ovary (an operating nurse gives suture needle and catgut)
- lavage of abdominal cavity

**EXAMPLE OF THE OPERATIVE NOTES** in the wedge-shaped ovarian resection

*Indications for the operation:* scleropolycystic ovarian syndrom, primary infertility.

*Anesthetization:* endotracheal anesthesia with Nitrous oxide and Oxygen mixture, and neuroleptanalgesia.

*Operation passing.* An operative field has been processed by 2% Iodine spirit solution and by 70% Ethyl alcohol, edged by sterile surgical garb.

Laparotomy by Pfannenshtiel. Before opening peritoneal cavity, the wound is edged by sterile serviettes and isolated from hypodermic fat. Bowels have been separated by serviettes.

Findings during the examination of small pelvis are the following: uterus is not altered, normally developed, occupies central position in the cavity of small pelvis. Both ovaries are whitish in colour, their dimension exceeds normal considerably, surface is smooth. Both uterine tubes are without pathological changes.

Both ovaries are exteriorized out of abdominal cavity into the wound. About 2/3 of tissue from both ovaries are removed by wedge-shaped cut in hilus direction. Ovarian surfaces are jointed by interrupted catgut sutures. There was no bleeding.
Lavage of abdominal cavity has been conducted. Calculation of serviettes and instruments — all are present.
The incisional wound of anterior abdominal is sutured layer-by-layer: peritoneum and muscles — by continuous, aponeurosis — by interrupted catgut suture, skin and hypodermic fat — by interrupted cosmetic suture.
Asepsis bandage has been dressed.
There was no bleeding during the operation.
Operation duration is 20 min.
*Name of the performed operation:* wedge-shaped ovarian resection.
*Postoperative diagnosis* — scleroplycystic ovarian syndrome.

**Tubal patency renewing operations**
Salpingolysis, salpingostomy, implantation of uterine tube into the uterus refer to these operations.
*Salpingolysis* is the operation, in which lysis of uterine tube adhesions is performed. Adhesions create barriers on ovum migration way. During the examination of small pelvis organs the adhesions, are found. They are dissecting trying not to damage the peritoneum of the tube.
*Implantation of the uterine tube into uterus* is carried out in case ol occlusion of some of its part. In that case the occluded part of the tube is removed and passable one is transplanted into the uterus, previously creating the hole ii its wall.
It is necessary to note, that these operations are ineffective and rarel) renewing reproductive function.

**Subtotal hysterectomy**
The operation of subtotal hysterectomy is performed most frequently ii case of benign uterine tumors (fibromyoma).
*Stages of the operation:*
• disinfecting of skin
• midline vertical or transverse incision of anterior abdominal wall
• introduction of retractor and examination of organs of small pelvis
• separation of intestinal bowels
• applying of globular forceps on the uterus and its exteriorization into the wound
  application of forceps, dissecting, stitching and ligation of the round ligament of uterus, ovarian ligament, uterine tubes (in case of removal of the uterus with its adnexa, round ligaments and infundibulopelvicum ovarian ligaments) are cutting
• dissecting of the vesico-uterine peritoneal fold and separating of urinary bladder down by swab
• application of forceps, transection and ligation with stitching vascular fascicles from both sides
• separating of uterine body from the cervix (a nurse gives to surgeon a tampon, moistened by solution of Betadine, for processing of cervical canal, after processing a tampon together with dressing forceps is thrown away)
• suturing of cervical stump
• lavage of abdominal cavity
• report of operating nurse about presence of all instruments and serviettes
• suturing of abdominal wound
• catheterization of urinary bladder

EXAMPLE OF THE OPERATIVE NOTES in subtotal hysterectomy

*Indications for the operation:* uterine fibromyoma, its submucous form, menorrhagia.
*Anesthetization:* endotracheal anesthesia with Nitrous oxide and Oxygen mixture, and neuroleptanalgesia.

*Operation passing.* An operative field has been processed by 2% iodine spirit solution and by 70% ethyl alcohol, edged by sterile surgical garb. Anterior abdominal wall has been incised layer-by-layer, by midline vertical incision. Before cutting the peritoneum, a wound is edged by sterile serviettes, hypodermic fat is isolated.
The wound's edges are parted by retractor. The organs of abdominal cavity are separated by serviettes. The uterus is clenched by Museux's forceps and exteriorized out of abdominal cavity.

During the examination of organs of small pelvis it has been found that uterus is normal, 10x12 cm in dimensions, on its anterior wall myomatous node on wide pedicle is situated, other nodes in uterine wall are present. Adnexa are not altered.

Two forceps are applied on the right and left round uterine ligaments. Ligaments between them are dissected, forceps are replaced by ligatures. Forceps are applied on ovarian ligament and uterine tube from both sides. The ligaments are cut, forceps are replaced by ligatures. Peritoneum in region of vesico-uterine fold are cut and exfoliated down together with urinary bladder. On the level of the internalled uterine os to the right uterine artery is clenched by forceps, cut ligatures are put. By analogy the same thing is made on the left side. Above the ligated vessels by wedge-shaped incision the uterus is separated from the cervix. On the cervical stump catgut stitches are put. Peritonization by leaf of broad uterine ligament with continuous catgut suture is carried out.

Serviettes are removed from abdominal cavity. Lavage of abdominal cavity is conducted. Calculation of serviettes and instruments: all are present. The incision wound of anterior abdominal wall is sutured layer-by-layer: peritoneum and muscles — by continuous, aponeurosis — by interrupted catgut suture, skin and hypodermic fat — by interrupted silk suture. Asepsis bandage has been dressed. ' Bleeding during the operation — 200 ml. Operation duration — 1 hour 20 minutes.

Name of executed operation: subtotal hysterectomy without adnexa.

Macropreparation: the uterus is tuberculosis, 10x12 cm in dimensions, on its anterior wall there is situated the myomatous node on wide pedicle, multiple interstitial and two submucous nodes. Removed uterus is sent to the histological research.

Postoperative diagnosis — multiple uterine fibromyoma.
In case of total hysterectomy uterus together with the cervix is removed. This operation is performed in patients with uterine tumors in case of pathological changes in its cervix. The uterus is removed with or without its adnexa.

**Stages of the operation:**
- disinfecting of vagina, introduction of a tampon, moistened with alcohol, into vagina
- disinfecting of skin of anterior abdominal wall
- incision of anterior abdominal wall
- introduction of retractor and examination of organs of small pelvis
- separation of intestinal bowels
- applying of globular forceps on the uterus and its exteriorization into the wound
- application of forceps, dissecting, stitching and ligation of round ligament of uterus, ovarian ligament, uterine tubes, (in case of uterine removal with its adnexa round ligaments and infundibulopelvic ovarian ligaments are cutted)
- dissecting of vesico-uterine peritoneal fold and separating of urinary bladder down by swab
- application of forceps, dissection and ligation with stitching of vasculn fascicles from both sides
- application of forceps, dissection and ligation with stitching of utcrinosacra ligaments
- additional separating of urinary bladder
- cutting and bandaging of vaginal branches of uterine vessels (an opera) in j nurse gives long Kocher's forceps)
- separating of the uterus from vaginal vaults (at the moment o dissecting of vaginal cavity, an operating nurse gives the surgeon narrov gauze ribbon, 30 cm in length, moistened by 70% alcohol, whicli surgoei introduces into vagina by means of long dressing forceps, which is throwi away just after use)
- round suturing of the vaginal stump. All the instruments, that were used oi this stage of the operation, are thrown away immediately
- peritonization
- lavage of abdominal cavity
EXAMPLE OF THE OPERATIVE NOTES in total hysterectomy

*Indications for the operation:* fibromyoma, menorrhagia, cervical erosion.

*Anesthetization:* endotracheal anesthesia with nitrous oxide and oxygen mixture, and neuroleptanalgesia.

*Operation passing.* The operative field is processed by 2% iodine spirit solution and by 70% ethyl alcohol and edged by sterile surgical garb. Anterior abdominal wall is incised in layers by midline vertical incision. Before cutting the peritoneum, the wound is edged by sterile serviettes, hypodermic fat is isolated. The wound's edges are parted by retractor. The organs of abdominal cavity are separated by serviettes. The uterus is clenched by Museux's forceps and exteriorized out of abdominal cavity.

During examination of organs of small pelvis the following are found: uterus is irregular, 12x16 cm in dimensions, it is deformed by 2 myomatous nodes. Adnexa are not altered. On the right and left round uterine ligaments, ovarian ligaments and uterine tubes two forceps are applied. Ligaments between them and tubes are dissected, forceps are replaced by ligatures. Vesico-uterine peritoneal fold is cut and pulled down together with urinary bladder. Along the uterine edge forceps are applied on vessels bundles from both sides, after this they are dissected and ligated by vicryl. Forceps are applied on uterosacral ligaments, their dissection and ligation are made. Additionally urinary bladder is separated, forceps are applied on the cardinal uterine ligaments, they are dissected and ligated. Vaginal branch of the right uterine artery is clenched by forceps on the level of vaginal vault, then it is dissected and ligated. By analogy the same thing is made on the left side. A wall of anterior vaginal vault is fixed by Kocher's forceps, its cut is made. A tampon is removed from vagina. The wound edges and mucous membrane of vagina have been processed by 1% spirit iodine solution. The tampon is putted into vagina through the the vault. Cervix is exteriorized into the
wound, uterus together with its cervix is separated from the vaults on the level of the top third of vagina. Edges of vagina wound are fixed by Kocher's forceps. Catgut stitches are put on the edges of vagina. Peritonization by leaf of broad uterine ligament with continuous catgut suture is carried out.
The serviettes are removed from the abdominal cavity. Lavage of abd< cavity is conducted. Calculation of serviettes and instruments is done: present.
The incision wound of anterior abdominal wall is sutured in layers: neum and muscles — by continuous, aponeurosis — by interrupted catgut; skin and hypodermic fat — by interrupted silk suture.
Asepsis bandage is dressed. Bleeding during the operation is 200 ml ration duration is 1 hour 30 minutes.
*Name of the performed operation:* total hysterectomy without adnc
*Macropreparation:* the uterus is irregular, 12x16 cm in dimensions, med by 2 myomatous nodes. On the cervix there is erosion. Removed ut sent to histological research.
*Postoperative diagnosis* — Multiple uterine fibromyoma.

**Conservative myomectomy**

*Stages of the operation:*
- disinfecting of skin
- midline vertical or transverse incision of anterior abdominal wall
- introduction of retractor and examination of organs of small pelvis
- separation of intestinal bowels
- putting of traction suture on the uterus and its exteriorization into the
- incision of uterine wall under myomatous node, hemostasis
- husking the node by scissors and swab, hemostasis
- suturing the uterine wall (node's bed)
- peritonization by continuous catgut suture
- introduction of contractile agents into the uterus (operating nurse pr the syringe with Oxytocin, Methylergometrine in advance)
• lavage of abdominal cavity
• report of the operating nurse about the presence of all the instrumen serviettes
• suturing of abdominal wound
• catheterization of urinary bladder

EXAMPLE OF THE OPERATIVE NOTES
in conservative myomectomy

*Indications for the operation:* subserous fibromyoma. *Anesthetization:* endotracheal anesthesia.

*Operation passing.* The operative field is processed by 2% spirit Iodine solution and by 70% ethyl alcohol, edged by sterile surgical garb. Anterior abdominal wall is incised in layers, by middle vertical incision. After cutting the peritoneum, the wound is edged by sterile serviettes, hypodermic fat is isolated. During the examination of organs of small pelvis it is found: uterine dimensions are 10x12 cm, in the region of its fundus there is situated a myomatous node on the rather narrow pedicle. Adnexa are not altered.

The wound's edges are parted by retractor. The organs of abdominal cavity are separated by serviettes. The uterus is clenched by Museux's forceps and exteriorized out of abdominal cavity.

Incision of the serous membrane in node's region is performed. The node is exfoliated partially by sharp, partially by obtuse way. Careful hemostasis, suturing uterine wall by continuous serous-muscular vicryl suture is performed. The serviettes are removed from the abdominal cavity. Lavage of the abdominal cavity is performed. Calculation of serviettes and instruments — all are present. The incision wound of anterior abdominal wall is sutured in layers: peritoneum and muscles — by continuous, aponeurosis — by interrupted catgut suture, skin and hypodermic fat — by interrupted silk suture. Asepsis bandage is dressed. Bleeding during the operation — 300 ml. Operation duration — 50 minutes.
Name of the performed operation: conservative myomectomy. Macropreparation: myomatous node on the rather narrow pedicle. Removed material is sent for histological research.
Postoperative diagnosis — subserous uterine fibromyoma.

VAGINAL OPERATIONS

In gynecological practice some operations are performed through vagina. First of all these are the operations connected with descence and prolapse of genitals — the plastic operations and hysterectomy through vagina in case of its full prolapse, and also operations on the cervix on account of old ruptures, ectropion and other pathology of cervix, in case of which the conservative methods have no effect, and removing of the whole uterus is inexpedient.

Patient's position on the operation table during the performing of the vaginal operations is the same, as on gynecological chair: leg-holders are fastened to the table, a woman lay down on back with bent in hip and knee joints legs, legs arc fixed to the leg-holders.

The surgeon and the first assistant seat on the chairs, the second assi stands to the right from the patient. Processing of the operation field: at vagina is processed with tampon, moistened by 70% ethyl alcohol, then by < tampon with alcohol a pubic tubercle, labia major, perineum, lower part of a men, internal and back surface of thighs to their midst are processed.

Cone-shaped cervical amputation by Shturmdorf

The operation is performed in case of glandular-muscular hypertropl cervix, that develops in the result of the chronic cervicitis, at cervical elong in patients with descence and prolapse of uterus.

Stages of the operation: (fig. 189):

• disinfecting of external genitals and vagina
• visualizing of the cervix in specula
• fixation of anterior and posterior lip of the cervix by tenaculum
• dilation of cervical canal by Hegar's dilators to N° 8
• circular incision of cervical mucous membrane (by scalpel)
• putting of two catgut stitches on the cervix for its fixation
• cone-shaped amputation of the cervix, hemostasis;
• basic catgut stitches are put on the cervix (catgut N° 6, threads length 25-30 cm)
• additional catgut stitches are putting on the cervix (catgut N° 4)
• processing the cervix by iodine and withdrawal of vaginal speculum

Wedge-shaped cervical **amputation by Shreder**

The operation is recommended in case of cervical deformation by old and its considerable hypertrophy, and also it is a kind of treatment of cervix cancer states.

**Stages of the operation:**

• disinfecting of external genitals and vagina
• visualizing of the cervix in specula
• fixation of anterior and posterior lip of the cervix by two globular Ion
• dilation of cervical canal by Hegar's dilators to JV» 10;
• symmetric incision of the cervix by scissors on and left and right sid that cuts should not reach vaginal vaults;
• wedge-shaped incision of anterior cervical lip and its forming;
• wedge-shaped illusion ol posterior cervical lip and its forming;
• putting in catgut stitches on the cervix for junction of its anterior and posterior lips;
• processing of the cervix by iodine and withdrawal of vaginal speculum

**The plasty of anterior vaginal wall (anterior colporrhaphy)**

The operation is performed in case of descence or prolapse of uterus for renewing of anatomic and functional correlation of small pelvis organs. It is combined with the operation of perineal integrity renewing, (fig. 190, 191)

**Stages of the operation:**

• disinfecting of external genitals and vagina
• visualizing of the cervix in specula and its fixation by tenaculum
• infiltration of tissues by 0,25% Novoeaine solution (for easing of tissues separation)
• incision of anterior wall of the vagina and separating ends of vaginal fla| scalpel
• separating of urinary bladder from the cervix (by scissors and swab)
• putting of catgut stitches on urinary fascia (catgut N°3-4)
• putting of continuous catgut suture on vaginal wall
• catheterization of urinary bladder
• processing the suture by 1% iodine solution and withdrawal of instruments

The plasty of posterior vaginal wall and muscles of pelvic floor (colpoperineorrhaphy) Stages of the operation:
• disinfecting of external genitals and vagina
• application of Kocher’s forceps on borders of the piece, that has to be separated
• infiltration of tissues by 0.25% Novocaine solution (for easing of tissues separation)
• incision of vaginal wall and perineal skin, separating of flap’ ends
• dissecting of scars and fascia by scalpel in lateral corners of the wound and uncovering the levators
• putting of catgut stitches on levators (operating nurse gives catgut N°6)
• putting of continuous catgut suture on vaginal wall (catgut N°4)
• tying the sutures on the levators
• putting of sutures on superficial muscles (catgut N°3)
• putting of silk sutures on perineal skin
• processing of sutures by iodine solution

EXAMPLE OF THE OPERATIVE NOTES in prolapse of vaginal walls
Indications for the operation: prolapse of vagina walls.
Anesthetization: endotracheal anesthesia with Nitrous oxide and Oxygen mixture, and neuroleptanalgesia, additional infiltrative anesthesia by 0.25% Novocaine solution.
Operation passing. In position of the patient for gynecological operation after processing the external genitals and inner surface of thighs by 2% Iodine spirit solution and by 70% Ethyl alcohol, operating field is edged by sterile surgical garb. Vagina is
disclosed in specula, mucosa is processed by 1% Iodine spirit solution. The cervix is fixed by Museux's forceps, displaced forward and down.

The 1st stage: Anterior colporrhaphy. Kocher's forceps are applied on uterine wall and pulled up on distance 1.5 cm from external orifice of urethra. The cervix is pulled down. Because of tension during this in the anterior vaginal wall is formed a discoid flap, the sharpened end of which is turned up to external orifice of urethra, sharpened base is situated near the transition fold of anterior vaginal wall mucosa. The flap is separated and removed. Urinary bladder separated. Catgut sutures are putted on its base. The edges of vaginal wound are joined by the interrupted catgut sutures.

The 2nd stage. Colpoperineorrhaphy (On the borders of perine; skin and mucous membrane of vagina in the region of posterior commissure tw Kocher's forceps are applied. An incision is done between them. The edges (vagina wall are clenched by forceps, stretched, a scar tissue between back wall of vagina and rectum is cutted by scissors. Paravaginal and pararectal tissue are separated by scissors up to the top of vagina. Three-angled flap is cut out from the separated posterior vaginal wall. On m. levator ani, after their mobilizing, two silk seams are putted. The edges of vaginal wound are joined by interrupted catgut stitches; the edges of perineum skin — by interrupted silk suture.

Wound toilet. Asepsis bandage.

Blood loss during operation is 100 ml. Operation duration is 50 min.

Postoperative diagnosis: prolapse of vaginal walls, incomplete uterine prolapse.

Name of performed operation: Anterior and posterior colporrhaphy with colpoperineorrhaphy.

MINOR GYNECOLOGICAL OPERATIONS

Cervical biopsy

Necessary instruments: Sim's speculum, tenaculum, scalpel (or concho-tome), needleholder, needle, catgut N° 3, dressing forceps, pincers. Stages of the operation:

• disinfecting of external genitals and vagina
• visualizing the cervix in specula and its fixation by tenaculum
• cutting off by scalpel a part of pathologically changed tissue of the cervix on border of non-altered tissue
• putting of sutures on the cervix (catgut N3)
• processing of the cervix by iodine solution
• material fixation, filling in the order and sending it into laboratory

**Culdocentesis**

*Necessary instruments:* Sim's speculum, tenaculum, long puncture needle syringe, dressing forceps, pincers. *Stages of the operation:*
• disinfecting of external genitals and vagina
• visualizing the cervix in specula and its fixation with tenaculum by posterior lip
• executing of local anaesthesia
• puncture of back vault of vagina by long needle and aspirating through it the content of abdominal cavity
• withdrawal the needle, processing the place of puncture by Iodine, taking off the tenaculum, removing of speculum

**Uterine sounding**

*Necessary instruments:* Sim's speculum, tenaculum, uterine sound, dress forceps, pincers

*Stages:*
• disinfecting genitals and vagina
• visualizing the cervix in speculum and its fixation with tenaculum
• introduction of uterine sound into the uterus and examination of its cavity
• pulling the sound out of uterine cavity
• processing the cervix by iodine, removing instruments

**Dilation and curettage (D&C)**
Necessary instruments: Sim's speculum, tenaculum, uterine sound, Hegar's dilators, curettes N 1,2,4, dressing forceps, pincers

Stages of the operation:

• disinfecting of external genitals and vagina;
• visualizing the cervix in specula and its fixation with tenaculum by anterior lip
• abrasion of mucous membrane of cervical canal with small curette
• sounding the uterine cavity
• dilation the cervical canal by Hegar's dilators (if necessary)
• abrasion of mucous membrane from the uterine cavity
• taking the tenaculum away, processing of the cervix by iodine, removing of instruments
• separately material fixation from cervical canal and uterine cavity, filling in the order and sending it into the laboratory

5.3. Control questions
1. Determination of hysteroscopy.
2. Preparation and realization of гістероскопічних operations, conduct, complication.
3. Determination of laparoscopy.
4. Preparation and realization of operations, post-surgery conduct, complication, prophylaxis.
6. Rehabilitation of patients which carried operations.
7. Prophylaxis of complications.

5.4. Final stage
Current activity of every student is estimated during employment, eventual control is standardized, the analysis of success of students is conducted, the estimation of activity
of every student is declared and proposed in the magazine of account of visits and success of students. Students are shortly informed of theme of next class.

Control questions:
1. What are laparoscopy and hysteroscopy?
2. What shows and противоказан to the endoscopic operations?
3. What terms of implementation of laparoscopy and hysteroscopy?
4. What technique of execution of laparoscopy and hysteroscopy?
5. What tool is used for realization of laparoscopy and hysteroscopy?
6. What inspection must be executed before realization endoscope
7. What indications and contra-indications to the endoscopic operations?
8. What terms of implementation of laparoscopy and hysteroscopy?
9. What technique of execution of laparoscopy and hysteroscopy?
10. What tool is used for realization of laparoscopy and hysteroscopy?
11. What inspection must be executed before realization of endoscopic operations?
12. What possible complications during realization and after endoscopic operations?
13. What operations are executed on muliebrias?
14. What technique of execution of gynaecological operations?
15. What possible complications during realization and after endoscopic operations?
16. What operations are executed on muliebrias?
17. What technique of execution of gynaecological operations?

8. Literature
8.1. General:
5. Order number 582 of Health of Ukraine "On approval of clinical protocols for obstetric and gynecological care.
MORE:

TESTS
1. The basic methods of surgical instruments sterilization are:
   A. all methods are equal
   B. boiling
   C. dry heat sterilization
   D. steam sterilization under pressure
   E. nothing above

2. During salpingoectomy clips are not putting:
   A. on the lig. ovarian proprii
   B. on the uterine end of the tube
   C. methosalpinges
   D. on all of these anatomical structures
   E. nothing above

3. Abnormal spotting in case of tubal miscarriage may occur:
   A. after a delay of menstruation
   B. prior to the beginning of next menstrual
   C. the beginning of the next menstrual cycle
   D. all above
   E. nothing above

4. In case of ectopic pregnancy do not use operations:
   A. salpingoovariolizis
   B. segmental resection of the tube
   C. salpingostomy
   D. salpingektomy
   E. nothing above

5. When supracervical hysterectomy of uterus with both adnexa crossed and ligation of following ligaments:
   A. Round, broad, infundibulopelvicum ligament
   B. Round, broad, cardinal
   C. Round, broad, proper ligament of ovary and tube
   D. Round, broad, proper ligament of the ovary, the cardinal, as well as tubes
E. Round, broad, cardinal, infundibulopelvicum ligament.

6. What is not an indication for administration the hysterosalpingography?
   **A. inflammatory diseases of uterus and tubes**
   B. tube infertility
   C. infertility of endocrine genesis
   D. infertility of uterine genesis
   E. a method is obligatory at the inspection of all patients with infertility.

7. A 59 year old female patient applied to a maternity welfare clinic and complained about bloody discharges from the genital tracts. Postmenopause is 12 years. Vaginal examination revealed that external genital organs had signs of age involution, uterus cervix was not erosive, small amount of bloody discharges came from the cervical canal. Uterus was of normal size, uterine appendages were unpalpable. Fornices were deep and painless. What method should be applied for the diagnosis specification?
   **A. separated diagnostic curetteage**
   B. laparoscopy
   C. puncture of abdominal cavity through posterior vaginal fornix
   D. extensive colposcopy
   E. culdoscopy

8. You ask a patient to call your office during her next menstrual cycle to schedule a hysterosalpingogram as part of her infertility evaluation. Which day of the menstrual cycle is best for performing the hysterosalpingogram?
   **A. day 8**
   B. day 3
   C. day 14
   D. day 21
   E. day 26
9. In the preparation of gynecological patients to emergency intervention in urgent order compulsory study is:

A. Determination of blood and rhesus factor
B. Measurement of HELLP, pulse, ChDD
C. JAB JAB
D. Biochemical blood analysis (total protein, bilirubin, urea, residual nitrogen, glucose, electrolytes)
E. Australian blood Antigen

10. In the presence of inflammatory diseases of the veins in the preoperative period demonstrates the use of anticoagulants direct action, how long before the start of the operation stop antikoagulyantnuu therapy?

A. For 2-3 days
B. For 2-3 hours
C. For 5-7 days
D. For 5-7 hours
E. Therapy does not stop

SITUATIONAL TASKS

1. In the presence of varicose veins of lower extremities with elective surgery

2. A. patient 33, was urgently went about menorrhagia. Through 1.5 hours after the operation the following symptoms: skin and visible mucous pale, ad 70/40 mm, Ps 134 BPM. per minute of insufficient filling and voltage, significant bleeding from the vagina. The following steps?
3. In case of operation with urgency in order to prevent Mendelssohn syndrome it is necessary:

4. The critical period for the occurrence of postoperative complications believe first

5. Patient m. 44 years, on the second day after a planned surgery on organs of small pelvis, complained about chest pain, coughing, shortness of breath. Objectively: paleness, tachycardia, auscultativno accent II tones on the pulmonary artery, hell 90/60 mm, t 38.1 'S. Laboratory: Leukocytosis 11 * 109/l, increased SEDIMENTATION RATE 22 mm/h Which likely developed complications in this patient and what further therapeutic tactics?