

SURGERY, ITS DEFINITION AND TYPES

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ABSTRACT

Our current article included shedding light on general surgery, and the precise definition of it was discussed, and the most important types and features of each of them were mentioned in detail according to the actual applications that are taking place. An enhanced case by displaying its own image in order to clarify the condition of a disease or a specific injury. Some of them are optional (it is by the choice of the patient or any person who presents his condition to the surgeon, as recovery may be through treatment, so here the patient has the choice between having surgery or being satisfied with treatment and he will be cured), and the other section is mandatory (for the emergency situation that must In which there is a surgical intervention to treat an emergency situation and in which the life of the patient is preserved after verifying the severity of the disease or injury suffered by the patient).

KEYWORDS: *General Surgery*

INTRODUCTION

Surgery is defined as one of the medical specialties that depends in its performance on manual procedures and is applied by the presence of various technical tools on patients, for the purposes of detection and treatment, such as checking the presence of tissue damage that may occur due to certain diseases or injury. In 1965 a wide scale review was attitude through American surgeons for definition criteria of major surgery (1).Surgical procedures aim to treat an organ or tissue and improve its functionality or appearance. Surgical intervention is also called the term (surgery), surgeries can be performed on humans or animals, and the person who performs the surgery can be called a surgeon, and he may also be described as a medical practitioner, these terms are applied to doctors who specialize in medicine in general such as podiatrists and dentists who are known as (oral surgeons), as well as veterinarians, and in very rare cases, surgeons perform surgery on themselves. patient age been termed as a risk factor for morbidity and mortality after high risk involvements(2, 3). The surgical procedure may take a few minutes or up to hours, but often the surgical procedure cannot be a reliable continuous treatment or a periodic treatment. Surgical operations are performed in hospitals in operating rooms using various surgical tools and in the presence of a table for the patient and other instruments. The environment and all procedures used in the surgical operation must be subject to the principles and controls of sterilization, and all instruments used in operations must be surgical sterile free of contaminants and micro organisms. It must also be replaced or re-sterilized in case of contamination, as it has been used in a contaminated manner and touched non-sterile surfaces). The presence of crew members inside the operating room is necessary, and they must wear sterile clothing (robe, hat, gloves and masks must all be sterile), and their hands and arms must be washed with prepared alcohol or any antiseptic substance before each surgery. Surgical procedures may be performed only to survive a severe injury to become chronically disabled

and a burden to family and society (4,5,6). Often after each surgery, patients are instructed to refrain from eating or drinking the night before the surgery, to prevent the effect of the presence of food in the stomach on the medications given to the patient before and during the surgery, as well as to prevent vomiting for the patient during or after surgery. While the patient enters the operating room, the area where the surgery will be performed must be sterilized using a type of antiseptic such as; chlorhexidine-gluconate or povidine-iodine, to prevent or reduce contamination, and hair is cut if it is in the surgical site as a preparatory step before the operation. The patient is given the appropriate dose of anesthesia to prevent him from feeling pain when performing the surgery, as it includes cutting tissues and suturing the wounds.

DEFINITION OF SURGERY

Surgery is defined as a medical technique that is based on medical intervention in order to treat the affected organs and tissues. As a general rule, any procedure in which an incision occurs in organs and tissues or in which wounds are obtained from certain injuries is called surgery. There are other procedures that cannot specifically follow this description, such as (catheterization or endoscopy), but it can be considered one of the surgical procedures when it includes the usual preparations for surgical operations, such as anesthesia, sterilization, the provision of surgical tools, as well as suturing or stapling. Routine increased observation (intermediate or intensive care) after high-risk surgeries lead to prompt recognition, and management of postoperative complications, then limit of additional morbidity and mortality (7). Before performing the surgery, the patient's clothes must be replaced with other sterile clothes, and he is also asked to certify the details of the surgery that will be performed on him. All vital signs of the patient must be recorded and the nutrient fluid delivered to him through one of the parties, and some necessary medications such as antibiotics, analgesics and other necessary drugs must be given. In some cases of surgery, significant blood loss may induce the fast cascade of inflammation responses in early time for about (30 min) after the initiation of injury, then leading to a processes of organ dysfunction (8, 9). In Europe, we are increasing the interest of universities to study and practice surgery well, and as an example of those universities were (Montpellier, Padua and Bologna) they are very famous in this field, and the most prominent surgeons in the Middle Ages had books and manuscripts in medical surgery and one of those Books *The Great Surgery*, written in 1363, is one of the most famous texts on surgery until the seventeenth century.

SURGICAL TYPES

Surgical procedures are classified based on a number of factors such as the severity of the condition, the type of surgical procedure, the organ or tissue to be treated, as well as other factors no less important than the above, such as the degree of invasiveness (the degree of penetration into the body), and the tools used in the surgical operation. Depending on the type of surgery, the type of anesthesia that must be given to the patient may vary, either local or general. In the case of local anesthesia, the surgical site is sedated, but the patient remains somewhat conscious or slightly sedated. On the contrary, in the case of general anesthesia in which the patient is unconscious and paralyzed full movement, but breathing. The surgical types numerated as the following:

Elective Surgery

It is the surgery whose goal is to correct a specific condition that does not threaten the patient's life, and this type of surgery is often performed according to the patient's request and desire, and according to the presence of the surgeon and medical facilities. Many surgeries which necessary for the medical causes are elective surgeries, that are scheduled at a time for suited the hospital, surgeon, and patients. These included inguinal hernia-surgery, cataract-surgery, mastectomy

for breast-cancer, and the donation of a kidney or other organ by main living donor. Elective surgeries include the optional surgeries occurred for non-medical causes, such as cosmetic-surgery, including (face-lifts, breast-implants, lipo-suction, and breast-reduction), that aim to improve a patients' physical-appearance. LASIK-procedures can be elective, through what a patients weighs any risk against increasing the quality of life expectation. LASIK is nowadays the perfect elective-surgery in United Station (10).

Emergency Surgery

It is one of the types of surgery that is carried out in order to save the patient's life, so that he is forced to enter the operating room, and this type of surgery is performed in special emergency cases such as preserving one of the patient's limbs, or in order to enable one of the body's organs to perform its functional activities. If a surgery is very necessary, be simple classified like the adhesion and untwisted of the intestine, will be treated at an primarely stage and late stages also, this twist can interfere with the supply of blood, in this case the intestine will die, so must remove of the dead part of intestine to prevent death of the patient (11,12). There are many types of emergency surgery, as the following:

- Ectopic-pregnancy, and uterine-bleeding.
- Strangulated-hernia, and acute-intestinal obstruction.
- Acute-appendicitis, cholecystitis, and pancreatitis.
- Perforative- gastro duodenal ulcers.
- Intestinal-invagination.
- Gastrointestinal-bleeding.
- Renal-colic.
- Blockages bile-ducts (obstructive-jaundice).
- Acute-urinary retention.
- Rupture of the ovary, etc.

The surgeons at this clinic must be possess many years of practical's experiences and are highly trained in techniques of emergency-surgery, involving minimally invasive, and laparoscopic-operations. The diagnostics department at any hospital must be works all the clock, to allow any specialists to carry out almost necessary examinations, make an accurate-diagnosis, determination the emergency surgery scope, and preparation the patient that required surgery as quickly as soon as possible.

Exploratory Surgery, (Preliminary)

It is the surgery that is performed for the purpose of confirming and supporting the diagnosis of a specific disease condition. However, generally, there are many purpose and several applications of computer visions and more learning technologies in the surgery room still focusing of traditional surgery requirements, like procedures duration prediction, gesture determination, workflow-recognition, and tool-tracking in endoscopic-scenes (13, 14, 15).

Curative Surgery

Curative surgery whose goal is curative, that is, to treat certain conditions that have been previously diagnosed. It removes the cancerous-tumor, or growing in the body. Surgeons use this type of surgery when the cancerous tumor localized in a main part of the body. This treatment method is usually observed the primarily treatment. However, rest types of cancer-treatments, like radiations, must be used before\after the use of surgery method. Chemo-radiotherapy mostly chose for patients with un-resectable tumors, or who are not-candidates in surgery instituted on others factor (16, 17).

Amputation

It is a surgery performed to cut off one of the limbs of the body or the fingers. It represented by the remove of main limb by trauma, medical-illness, or surgery. As a surgery measures, it must be used for controlling the pain\ a disease-process in the affected limb, like malignancies and gangrene. With many cases, it is occurred on patients as a preventives surgery for such problems. In main countries, it is used for punished peoples who commits crimes (18, 19, 20, 21). It has been used as a planning in wars, and act of terrorisms, and sometimes it occurs in a war injuries. In many religions and cultures, minor amputations\ mutilations are observed a ritual-accomplishment (22, 23, 24). When done by an individual, executed the amputation who called as amputator (25, 26).

Re-Implantation

Is the surgery in which a part of the body that was previously cut is joined. in replacement when a device that used with infected, it is not uncommon for instant re-implantation to be copartner with an increasing risks of recurrent infections. As an outcome, patient must wait a given interval of previously time to a secondary implant. This can be intricate if the patient is subjected on the device's action, and an alternate medication may necessity to be used in the meddle time.

Reconstructive Surgeries

It is the surgery through which organs or places that are deformed or that suffer from a specific injury are reconstructed, and it related with trained, clinical, and re-imbursement implications. It is possess historically been indicated to as synonymous-plastic surgeries (27). In related to trained, plastic-surgery is a particulates medical specialties, and a surgeons can be a board certified plastic-surgeon by the (American-Board) of plastic-surgery (28). The re-constructive surgery isn't a specialty and there is no board-certified re-constructive surgeon.

In accurate form, re-constructive surgery should be different from cosmetic-surgery. So the re-constructive surgery purposes are:

- Improvement or restoration of normal functions.
- Restoration of normal appearance of abnormal\malformed body parts caused by main disease and some conditions.
- Improvement of the patient's life quality.

The main risks\ complications of re-constructive surgery:

All surgeries have complications. Some of them related to re-constructive surgery , are listed as the following types:

- Many problem concerned to anesthesia.
- Bleeding.
- Blood-clots.
- Infections.
- Healing-problems.
- Fatigue or tired.

Plastic Surgery

It is a type of surgery that improves the general appearance or some unaffected tissues for those who wish. Plastic surgery is one of the surgical specialties that involves the restoration or alteration of the human body. It can be divided into two distinct categories:

- Reconstructive Surgery.
- Cosmetic Surgery.

Reconstructive surgery is distinguished into several types, including (cranial surgery, microsurgery, hand surgery, and reconstructive treatment of burn areas. While cosmetic surgery is characterized by reconstructing a specific part of the body, leading to an improvement in its functional performance. Cosmetic surgery improves the general and external appearance of the body (30, 31).

Some complications concerned with re-constructive plastic surgery:

Every kind of surgery have some risks. People differs in anatomical properties and their abilities to heal. According to the kind of surgery there are many complications, and risks concerned to reconstructive plastic surgery, includes:

- Infections may be occur.
- Excessive bleeding
- Bruising.
- Difficult of wound-healing.
- Anesthesia-problems. And;
- Others.

Risks with complications increases when:

- Smoking.
- Have connective tissue damaging.
- Skin-damage with radiations therapy.

- Have decreasing circulation on the surgery site.
- Have H.I.V.
- Impaired of the immune system.
- With poor nutrition habits. And;
- Others.

Circumcision

It is a surgery in which the outer part of the skin of the penis is cut. In the more common case of the surgery, the fore-skin is extended by forceps, and then a circumcisions device must be cutch, finally the excessing of fore-skin occur. Topically injected-anesthesia is usually used for reducing of pain, and physiologic-stress (32).

Transplantation

This surgery involves removing an organ from the body or one of the limbs and replacing it with another from a donor, whether human or animal. , such as cardiac surgery (the term given to surgery performed on the heart), gastrointestinal surgery (the term given to surgery performed on any part of the gastrointestinal tract or any of its auxiliary glands), as well as orthopedic surgery (the term given to surgery that performed on bones or muscles).

Pericardium Surgery

It is the surgery that requires making small external incisions in a site of the body in order to insert a small machine into a specific cavity of the body, as is the case in a catheter. Unlike completely open surgeries, which require large incisions to reach the area of injury.

Laser Surgery

This type of surgery relies on the use of the laser as a key factor in cutting tissues or organs as an alternative to other conventional tools that are used to perform the same function. It used a laser in faced to the use a scalpel for cutting of tissues (33). For example involve the using of a laser-scalpel in otherwise conventional-surgery, and soft tissues laser-surgery, in which the laser beam vaporizes soft tissue with high water content.

Microsurgery

It is the surgery that relies on the use of microscopes so that the surgeon can see all the minute parts. Therefore, robotic surgery was developed such as the Da Vinci or Zeus surgical system, in which the robot during the surgery follows the instructions given by the surgeon and moves the tools through it. Micro-surgical cases particular vulnerable to potential-vascular, and thrombotic-complications. Nowadays, more studies are performed on SARS CoV-2 manifestations for infectious individuals required either micro-vascular free tissue transfers or amputations, monitoring increased risks of vasculitis, and micro-vascular thrombi (34, 35, 36).

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