

Types of Drains in Surgery

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ABSTRACT

Surgery is a medical discipline that has advanced significantly in recent decades thanks to advances in technology and medical research. Surgical drains are devices used to evacuate excess fluids that accumulate in the surgical wound. There are different types of drains that can be used depending on the area intervened and the type of fluid to be evacuated. Each type of drainage has specific advantages and disadvantages, and their choice will depend on the characteristics of the patient and the procedure.

KEYWORDS: drains, general surgery

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INTRODUCTION

Surgery is a medical discipline that has advanced significantly in recent decades thanks to advances in technology and medical research. However, surgical intervention remains a complex procedure that requires careful planning, execution and postoperative follow-up. One of the most important aspects of surgery is the management of fluid flow that occurs during and after the procedure, since excess fluids in the operated area can delay the patient's recovery and increase the risk of complications.

Placing drains in the surgical wound is a technique commonly used in surgery to prevent fluid accumulation and reduce the risk of complications. Drains are tubes or catheters that are placed inside the surgical wound to allow excess fluid to leave the body. The placement of drains can be essential in abdominal, thoracic, orthopedic and plastic surgery, among others.

The choice of the type of drain to use in surgery depends on several factors, such as the location of the surgical wound, the amount of fluid expected, and the length of time the drain is expected to remain in place. In this literature review article, the different types of drains used in surgery and their indications and placement techniques will be discussed. In addition, complications associated with drainage placement will be addressed and strategies to minimize these risks will be discussed.

Proper fluid flow management in surgery is essential for optimal patient recovery and prevention of complications. Therefore, it is important for surgeons to be familiar with the different types of drains available and to understand the proper indications and placement techniques for each type of

drain. It is also important for patients to be informed about drains and their role in postoperative recovery, so they can make informed decisions and collaborate in their postoperative care.

Surgical drains

Surgical drains are devices used to evacuate excess fluids that accumulate in the surgical wound. These fluids can be produced by bleeding, swelling, edema or oozing. The goal of drains is to reduce pressure inside the surgical wound, prevent fluid buildup, and decrease the risk of infection and other complications.

There are several types of drains that are used in surgery. The most common types of drains are described below:

Penrose drainage: This is a soft rubber tube that is placed in the surgical wound to allow excess fluid to leave the body. This drainage is commonly used in abdominal and thoracic surgery.

Suction drainage: is a tube connected to a vacuum pump that is used to suck excess fluid from the surgical wound. This type of drainage is commonly used in orthopedic surgery.

Jackson-Pratt drainage: This is a tube connected to a collection bag that is used to collect excess fluid from the surgical wound. This type of drainage is commonly used in plastic and reconstructive surgery.

Hemovac drainage: is a tube connected to a collection bag that is used to collect excess blood from the surgical wound. This type of drainage is commonly used in orthopedic surgery.

Placing drains in the surgical wound can be a valuable technique to prevent fluid accumulation and reduce the risk of complications. However, drain placement can also have

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complications, such as surgical wound infection, patient pain and discomfort, drain blockage, and loss of vital fluid. It is important for surgeons to be familiar with the different drainage placement techniques and to take steps to minimize the risk of complications.

An important technique for minimizing complications associated with drainage placement is proper surgical wound hygiene. It is essential that asepsis and antisepsis techniques are used to prevent surgical wound infection. In addition, it is important that the drain is carefully monitored for any potential complications.

DISCUSSION

The use of drains in surgery is a common and widely accepted practice. The choice of the type of drainage depends on the surgical procedure performed, the anatomy of the patient and the preference of the surgeon. Each type of drainage has specific advantages and complications associated with its use. Open drainage is the oldest type of drainage and consists of the placement of simple drainage tubes that allow the exit of fluid through an open wound. This type of drainage is useful in procedures where a significant amount of fluid or blood is expected after surgery. One of the advantages of this type of drainage is that it is easy to place and does not require additional equipment. In addition, it allows the elimination of infected material and reduces intra-abdominal pressure in patients with large intra-abdominal collections. However, complications associated with this type of drainage include wound infection, bleeding, pain, discomfort, and fluid leakage, which may lead to the need for a wound revision.

Closed drainage is another type of drainage used in surgery. This type of drainage uses pipes that connect to a closed collection system. Unlike open drainage, this type of drainage has the advantage of being more hygienic, since the liquid does not come into contact with the outside. In addition, it reduces the risk of wound infection and reduces the need to change the dressing. Another advantage of closed drainage is that it allows accurate measurement of the amount of fluid drained. However, complications associated with this type of drainage include the risk of tube obstruction, which may require the placement of a new drain, and the risk of fluid accumulation at the wound site, which may require the placement of a new drain.

Aspiration drainage is another type of drainage used in surgery. This type of drainage uses tubes that are connected to a suction source, allowing for faster and more effective removal of the liquid. In addition, aspiration drainage reduces the risk of fluid accumulation at the wound site and can speed wound healing. However, complications associated with this type of drainage include the risk of tube obstruction, the risk of wound infection, and the risk of damage to surrounding tissues due to negative pressure.

In addition, chest drains can be used in patients with pneumothorax, hemothorax or pleural effusion. The type of drainage used will depend on the size of the pleural space, the

type and amount of fluid to be evacuated and the duration of treatment. Drains can be inserted by thoracotomy, thoracoscopy, or image-guided percutaneous techniques.

As for abdominal drains, they are commonly used in gastrointestinal or liver surgeries to prevent fluid accumulation in the abdominal cavity, which can lead to complications such as abscess formation or surgical wound dehiscence. There are different types of abdominal drains, such as Jackson-Pratt drains, Penrose drains, or Redon drains. Each type has specific advantages and disadvantages, such as their ease of placement, the amount of flow they can drain, or the need for an external collection bag.

Finally, limb drains are commonly used in orthopedic surgeries to prevent the accumulation of blood or fluids in the operated area. Among the most commonly used types of extremity drains are Redón drains and vacuum drains. The latter are relatively new and are based on the creation of a vacuum in the intervened area to favor the exit of fluids and healing. Despite their advantages, they can also present complications such as infections or displacement of the device.

Complications associated with the use of drains may include infections, obstructions, displacement of the device, or injury to adjacent organs during insertion. In addition, patients may experience pain or discomfort due to the presence of the drain, which can affect their quality of life and delay their recovery. On the other hand, proper use of drains can prevent serious complications such as fluid accumulation or abscess formation, which can improve surgery outcomes and decrease hospitalization time.

CONCLUSION

In conclusion, the use of drains in surgery is a common and necessary practice to prevent postoperative complications. There are different types of drains that can be used depending on the area intervened and the type of fluid to be evacuated. Each type of drainage has specific advantages and disadvantages, and their choice will depend on the characteristics of the patient and the procedure. Despite the complications associated with the use of drains, their proper use can improve the results of surgery and decrease hospitalization time.

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