ORIGINAL RESEARCH PAPER
VOLUME-6 | ISSUE-8 | AUGUST - 2017 | ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 78.46
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

DAMAGE CONTROL SURGERY - UROBAG AS AN ALTERNATIVE TO BAGOTA BAG FOR LAPAROSTOMY

General Surgery

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KEYWORDS:

Damage control, Abdominal compartment syndrome, Temporary abdominal closure

INTRODUCTION

Throughout history surgical principles were based on anatomical repairs with the goal to make primary and definite organic repair. In the last decade, a greater importance has been given in repairing physiological features of the surgical patient. This resulted in the concept of damage control surgery with special emphasis on the need for open abdominal maintenance (laparotomy)[1].

Laparostomy comprises a surgical approach where the abdominal wall is not sutured by plans and left open, allowing a regular inspection and drainage of intracavitary content [2,3]. Its usage is indicated in cases of abdominal trauma, damage control surgery, sepsis of abdominal origin, severe acute pancreatitis, retroperitoneal hematomas and necrotizing fasciitis, allowing a continuous evaluation of intra-abdominal pressure in order to avoid the development of abdominal compartment syndrome[2,4-7].

According to the consensus carried out by the World Society of the Abdominal Compartment Syndrome (WSCAS - 2004), abdominal compartment syndrome is defined as a condition where organ dysfunction is caused by sustained intra-abdominal hypertension above 20 mmHg. However, it is known that values below this (> 12 mmHg) will also cause organ dysfunction, but to a lesser degree. Abdominal hypertension is divided in degrees [2]: (1) 12-15 mmHg; (2) 16-20 mmHg; (3) 21-25 mmHg; and (4) > 25 mmHg.

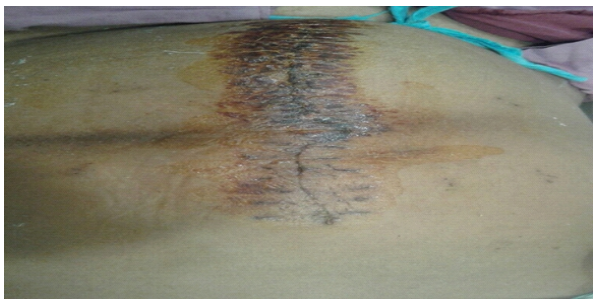
CASE REPORT

A 35 year old male had under gone Ileofemoral bypass vascular graft surgery for the illac block and was referred to us, for alternate method for abdominal closure , keeping in view that there should be no increased in intra abdominal pressure, leading to Abdominal compartment syndrome and pressure over the graft .

MATERIAL and METHOD

Patient had undergone laparotomy with midline incision , it was a challenging situation closing the abdomen primary as there were possibility of increased abdominal pressure leading to Abdominal compartment syndrome. So with the available resources at that time , we used a sterile urobag, cut it open and applied it like a sheet over the open midline incison , on the anterior abdominal wall, covered by a surgi film as a second layer of closure between which a negative suction drain was kept , so that all the peritoneal secretion is collected in the drain which acts as a vacuum and low continuous suction is maintained and at the same time there is aseptic closure of the abdominal wall without tension.

Patient was hemodynamically stable and post-operatively dressing was done twice and was observed for any signs of sepsis or allergies. Once the peritoneal secretion and edema was settled and adequate healing of the vascular graft was confirmed, we planned for a definitive management in form of single layer abdominal closure.



DISCUSSION AND RESULTS

Open abdomen as a damage control procedure has been recommended since 1979. The technique allows extensive drainage of pus through the wall opening and it also facilitates the washing of the peritoneal cavity trough scheduled surgeries or on demand as required [8]. In this procedure, the lining of the abdominal wall is not completely aligned, allowing a regular inspection on the condition of the handles and drainage of the intra-cavity content [8]. This procedure is indicated in situations such as severe pancreatitis, severe sepsis, abdominal trauma, and post vascular bypass surgeries where there are chances of increased abdominal pressure post closure, leading to failure of vascular graft.

For the open abdomen to be feasible, various techniques of temporary closure of abdominal cavity have been studied. The ideal technique needs to protect the abdominal content, prevent from evisceration (opening of the abdominal layer), preserve the fascia, minimize visceral damage, allow quantification of fluid loses to the third space allowing selective plugging, minimize domain loss, decrease bacteria amount, infection and inflammation, and keep patient dry and intact[8].

Bogota bag

Initially described in 1984, plastic bags utilized to contain parenteral solutions were used to coat the abdominal opening on the patient for a second surgical intervention [8]. Afterwards, the polyvinyl chloride (plastic bag) was adopted to maintain the abdomen open, technique initially called as Bogota bag or Borraez's bag [8]. It consists of a sterilized (by gas) plastic bag used for closure of abdominal wounds,

being sutured to the skin or fascia of the anterior abdominal wall [8].

The sterile Uro bag technique that has advantages over bagota bag is the availability of material , lower cost, fast and easily executed, and not dependent on a great experience of the surgeon. For allowing a great visibility and entrance in the abdominal cavity, it promotes greater control of the abdominal pressure and enables several revisions. Moreover, it allows abdominal decompression, does not cause inflammatory reactions or allergies, and this technique can used in any kind of surgery, from traumas to tumor removal. This bag prevents musculoaponeurotic necrosis and allows free expansion of abdominal viscera to prevent abdominal compartment syndrome'. It allows direct visualization of the intestines beneath the bag and is a good form of dressing, as the intestines do not adhere to it. This method of dressing facilitates planned re-operation for definitive treatment'. The bag is changed every week' to 2 weeks'. The abdomen usually can be closed by 2 weeks'.

However, in case of bagota bag it has higher rates of eviscerations and skin lacerations, implying greater need for abdominal drainage and wash-ups, higher rates of intestinal adhesion to the abdominal wall, difficulty in controlling the third space and leaks and requires sterilization.

CONCLUSIONS:

Sterile Uro Bag was an effective means of closure of open abdominal wound and prevented the complications due to open abdominal wounds or closure under tension.

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