CASE REPORT

Bogota Bag in the Treatment of Abdominal Wound Dehiscence

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Summary

A patient who underwent emergency laparotomy for rectal prolapse developed repeated abdominal wound dehiscence and subsequently an enteric fistula. The management of abdominal wound dehiscence is discussed, specifically with regards to the Bogota bag. Use of Bogota bag has been reported worldwide but this may be the first report here.

Key Words: Abdominal wound dehiscence, Bogota bag

Introduction

Abdominal wound dehiscence post laparotomy is a dreaded complication, which leads to severe morbidity and has a high risk of mortality. Primary closure of abdominal dehiscence can be disastrous, and has been found to be unsuitable in a majority of these patients[1,2,3]. Various methods of surgical repair have been described including mesh repair, vacuum pack, abdominal packing, placing tension sutures, closing only the skin and Bogota bag repair. This method of Bogota bag repair appears to be safe and effective in the management of burst abdomen and should be practiced more widely.

Case Report

A 45-year-old patient was referred to our unit for recurrent rectal prolapse. He had had an abdominal mesh rectopexy for irreducible rectal prolapse and the prolapse recurred on the second post-operative day and hence was referred to our unit. He had this rectal prolapse for 10 years. He was mentally subnormal. Examination revealed a large full thickness prolapsed rectum of 20cm. There was a midline laparotomy wound. Two days later, he developed a burst abdomen as well. Fig 1.

He underwent an emergency Delorme's perineal rectopexy with primary closure of the abdominal dehiscence, with tension suture after debridement of the wound edges. There was tension during closure due to dilated and oedematous bowel. The abdominal repair failed as 5 days later and he had another burst abdomen. Exploration revealed interloop abscess and the bowels were grossly dilated and oedematous. Debridement and thorough lavage was performed and the wound was covered with a Bogota bag, which was sutured to the fascial edge. Fig 2.

Three days later, the Bogota bag was changed and part of the wound was closed primarily with interrupted monofilament sutures. The bowel was adherent to the abdominal wall but no mobilization was done. Five days later, he was taken to theatre for another change of Bogota bag and an attempt to close the wound further. The wound was granulating well, and the bowel oedema had reduced markedly. The part of

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wound that had been sutured was healing well. But unfortunately, an overzealous attempt to mobilize the intestine resulted in a jejenal perforation. Though this perforation was repaired primarily, it leaked and resulted in a high output enteric fistula. A Foley's catheter was inserted into the fistula and low suction was applied to facilitate wound management. The Bogota bag was replaced to cover the intestines. He was started on parenteral nutrition and dressing was done daily.

One month later, the fistula was still persistent. The abdomen was explored under general anaesthesia via a small incision at the fistula site. Both the ends of the jejenum were mobilized and the unhealthy ends resected. Primary anastomosis was done and the abdominal wound was closed primarily. He was discharged two weeks later, the wound almost healed and no evidence of fistulation. He was reviewed in our clinic a month later and he was well.

Discussion

Full thickness abdominal wound dehiscence (burst abdomen) is a major catastrophe and is dreaded by all surgeons. It has an incidence of 1.4% with a high mortality of 24%[1] to 44%[2]. Various techniques have been described in the management of burst abdomen. Primary closure has been popularly practiced until recent times. It can be performed in fit patients, whose abdominal wound dehiscence is due to pure technical failure[1]. Placement of tension sutures is controvesial1. Most often, this method of closure would not be feasible, due to severe co morbid problems, severe wound infection, bowel oedema and peritonitis. Any attempt to close these wounds primarily will result in 50%[1] recurrence of the dehiscence with possibility of abdominal compartment syndrome, respiratory embarrassment and bowel ischaemia[1]. Retraction of the musculofascial planes is another major factor that makes it impossible to close these wounds. In these patients, open abdominal technique and use of damage-control staged laparotomy is advisable[1,2,3].

The primary aim must be debridement of the unhealthy wound edge rather than approximating the wound edges to close the defect. Many techniques have been used to cover the defect temporarily or permanently. The common methods are mesh repair, with either absorbable or non-absorbable mesh[1,2,3]. Mesh repair has been reported to have high complication rates of up to 80% with 23% incidence of enteric fistulation[1]. Using absorbable mesh and interposing omentum between bowel and the mesh[1,2] lessens this complication. Vacuum pack dressing is gaining popularity due to the ease of dressing and success rates[2,3]. A sterile sponge dressing is placed over the defect and covered with vacuum bag, and low continuous suction is applied. These wounds can be grafted with superficial skin graft later or be allowed to close by secondary intention. The above-mentioned repairs will definitely lead to incisional hernia that can be repaired much later. However, the major problems with the above techniques are intestines adhering to the mesh, to the wound edges and the abdominal wall.

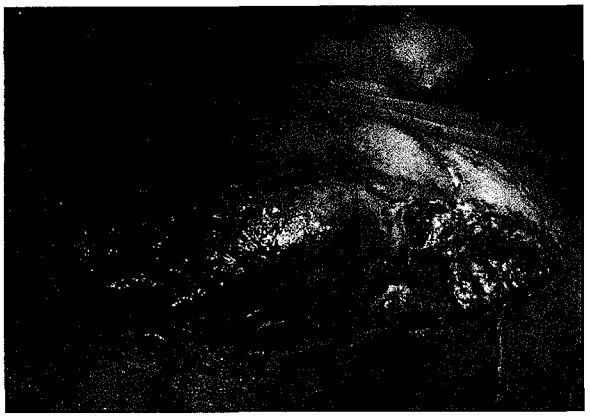

Fig. 1 : Abdominal dehiscence with small bowel prolapse.

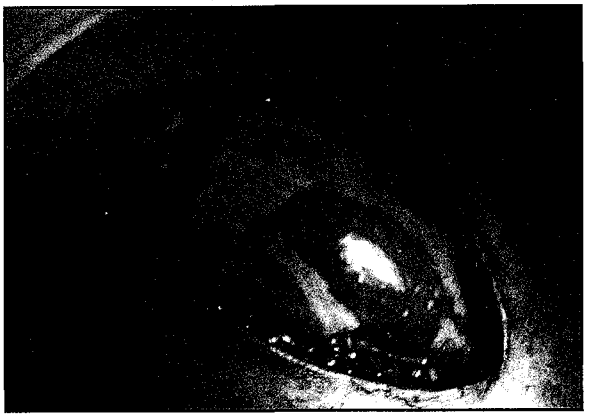

Fig. 2 : Bogota bag in place. Note the wound edges have been debrided completely.

This makes it almost impossible to perform a delayed primary repair and may lead to increase complication of iatrogenic enteric fistulation due to attempts at mobilization of the bowels.

Bogota bag is a simple plastic bag (urinary irrigation bag), which is placed over the abdominal defect and sutured to the wound edge or fascial edge[1,2,3]. This bag prevents musculoaponeurotic necrosis and allows free expansion of abdominal viscera to prevent abdominal compartment syndrome[2]. 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[3]. The bag is changed every week[1] to 2 weeks[3]. The abdomen usually can be closed by 2 weeks[3]. Even with the Bogota bag, the intestines do adhere to the abdominal wall. Attempts to mobilize the intestines can result in grave consequences (bowel perforation and fistulation) as in our patient. Paran et al[3] advocated pushing the bag laterally into the abdomen as far possible to provide maximum interposition between bowel and abdominal wall. They also report that to solve the problem of lateral retraction of the wound edge, they apply intravenous tubes as sutures through all the layers of the abdominal wall, and tighten it gradually over days at the bed side, as the oedema subsides, thereby approximating the wound edge slowly, and eventually are able to achieve primary fascial closure.

In conclusion, open abdominal technique and use of damage-control staged laparotomy, with application of Bogota bag offers a relatively safe and acceptable means of managing abdominal wound dehiscence. Mobilization of intestines from adhesions can result in enteric fistulation and hence should be avoided. Bogota bag helps to prevent these adhesions. Proper surgical technique is of utmost importance in preventing this dreaded complication of laparotomy, which prolongs hospital stay and requires intensive measures to manage.

References

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