



A PROSPECTIVE AND COMPARATIVE STUDY ON ABDOMINAL WOUND DEHISCENCE AND ITS MANAGEMENT IN A TERTIARY CARE CENTRE

Dr Binod Kumar	Associate Professor, Dept. Of Surgery, PMCH, Patna
Dr Roshani Prasad*	Junior Resident, Dept. Of Surgery, PMCH, Patna *Corresponding Author
Dr Sushil Kumar	Senior Resident, Dept. Of Surgery, PMCH, Patna
Dr Kumari Rashmi	Junior Resident, Dept. Of Surgery, PMCH, Patna

ABSTRACT

OBJECTIVES: To find out the effective way of management of abdominal wound dehiscence after emergency laprotomy.

MATERIAL AND METHODS: This study was carried out in Department of Surgery, PMCH, Patna from June 2017 to May 2018. A total of 65 patients undergoing emergency laprotomy through a midline incision were included in the study. They were followed by wound examination from second post operative day onwards to see normal or otherwise healing and findings were recorded. The cases of wound dehiscence were divided into two groups i.e. group A, managed with thorough abdominal wound dressings only and group B, managed with thorough abdominal dressing and later on by tension suturing.

RESULTS: 10 patients (15.3%) develop wound dehiscence. Out of 10, 6 patients were from Group A who were managed by regular abdominal wound dressing while the rest by deep tension suture. The outcome of deep tension suture was associated with less morbidity, less number of further surgeries and low mortality.

CONCLUSION: Thorough abdominal wash with copious amount of normal saline followed by regular dressing and then deep tension suturing is still an effective way of management of patient with wound dehiscence.

KEYWORDS :

INTRODUCTION:

Abdominal wound dehiscence is a terminology which is commonly used to explain separation of different layers of an abdominal wound before complete healing has taken place. Other terms used interchangeably are acute laparotomy wound failure and burst abdomen. Wound dehiscence usually occurs when a wound fails to achieve required strength to withstand stresses placed upon it. Dehiscence occurs when overwhelming forces disrupt sutures, when absorbable sutures dissolve too rapidly or when tight sutures cut through tissues through unnecessary pressure.

Acute wound failure may be partial or complete¹. In partial dehiscence, only the superficial layers or part of the tissue layers reopen. In complete wound dehiscence, all layers of the wound thickness are separated, revealing the underlying tissue and organs, which may protrude out of the separated wound. It is one amongst the most feared post-operative complications for the surgeons and is of greatest regard because of risk of burst abdomen, the need for immediate intervention, and the possibility of repeat dehiscence, surgical site infection, and incisional hernia formation². Abdominal wound dehiscence is reported to be a severe postoperative complication, with death rates reported as high as 45%. Incidence as reported in literature peaks from 0.4% to 3.5%³. Many risk factors are accountable for wound dehiscence such as surgeries in emergency set up, intra-abdominal bacterial infection, malnutrition, decreased Hb, elderly age >65 years, systemic co-morbidities (uremia, diabetes mellitus) etc⁴. Good knowledge of these risk factors is compulsory for prophylaxis. Mortality and morbidity in the form of increased hospital stay, long term repeated consultations, with extra burden on health care resources can be reduced by highlighting the risk factors for wound dehiscence, the incidence rate and prophylactic measures to prevent or reduce the incidence of wound dehiscence⁵. Abdominal wound dehiscence has been a long term dilemma for which no surgical unit has come with a 100% plan (i.e. none of the surgical units worldwide has reported 0% failure rate). However many institutes globally have been trying successfully to achieve and keep failure rates well below 1%. These statistics however do not discourage the

continuing research in attempts to eliminate the problem. A wide variety number of publications have been done in the past ten years trying to explain how this problem can be overcome.

The objective of this study was to determine the prevalence of abdominal wound dehiscence with different risk factors, co morbidities and their effective management.

MATERIALS AND METHODS:

This comparative cross-sectional study was conducted in Department of Surgery, PMCH, Patna from June 2017 to May 2018. A total of 65 cases, irrespective of the age and sex, undergoing laparotomies through a midline incision, were included in the study. Patients under 12 years of age or operated through other incisions were excluded from the study.

A detailed history and clinical examination was conducted. The data was noted on a proforma which also included all the major risk factors for wound dehiscence like age, gender, nature of disease, emergency surgery, nutritional status of patient, anemia, jaundice and presence of comorbidities (diabetes mellitus, hypertension, chronic obstructive pulmonary disease, steroid use, immunodeficiency states etc). Baseline investigations and total protein, albumin/globulin ratio were noted in all cases as well as abdominal radiographs and ultrasonography. CT scan abdomen was also done where required. After optimization of patient and anesthesia clearance every patient underwent laparotomy through a midline incision.

Postoperatively, abdominal wounds were examined from third postoperative day onwards on daily basis to see the signs of wound infection, dehiscence including redness (erythema), seroma formation, discharge of serosanguinous fluid or pus from one or more sites and subsequently partial or complete wound dehiscence.

Partial wound dehiscence was managed conservatively by laying open the wound, daily wound wash and dressing along

with intravenous antibiotics according to culture and sensitivity.

Cases of Partial wound dehiscence were divided randomly into two groups i.e. group A, managed with thorough abdominal wash and dressing and group B, managed with thorough abdominal wash and tension suturing. In group A patients, regular wound dressing was done. First the wound was washed with copious amount of normal saline then the wound was dressed with EUSOL. In Group B, deep tension applied using Nylon -1 no. with suture 2 cm from wound edges and 3 cm apart with a plastic tube of 4 cm length to avoid cutting of skin. Interrupted mattress sutures also applied in between the deep tension sutures. Patients of both groups received broad spectrum antibiotics.

RESULTS:

In this study major number of patients belonged to the age group between 41- 50 years, youngest age was 22 years and oldest patient was 82 years. All the cases were operated in the emergency by midline incision.

38 cases i.e. (58.4%) in the presenting study have undergone procedures which are classified as contaminated and no case has undergone clean surgery.

Table 1: Different types of surgical wound presenting with abdominal wound dehiscence.

Type of surgical wound	No.of cases	Percentage
Clean	0	0
Clean contaminated	11	16.9%
Contaminated	38	58.4%
dirty	16	24.6%

In this study, from 65 cases with abdominal wound dehiscence, perforation closure was done in 31 cases, resect ion anastomosis for 19 cases, appendectomy for 9 cases and other procedure like intestinal obstruction, Gut CA, splenectomy, mesenteric tear, adhesiolysis, stricturoplasty etc Out of 65 cases 39 pts had B.M.I > 25 and 26 patients had B.M.I < 25. Out of 65 cases 33 patients had Hb% more than 10 g/dl and 32 patients had Hb% less than 10 g/dl. Malnutrition, DM, HT, pulmonary diseases, anemia etc. are important risk factors for wound dehiscence. Average stay was 18 which increases economic burden both on hospital and patients. There were no deaths.

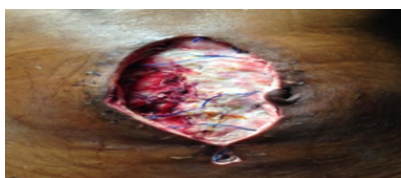


Figure 1: Wound dehiscence in a duodenal ulcer perforation case.

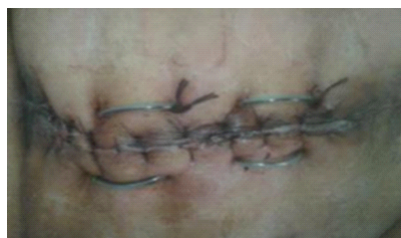


Figure 2: Tension suturing.

DISCUSSION:

A wound dehiscence is considered present when the abdominal wound site following surgery. It occurs mostly on 6th to 8th day post operatively. Factors relating to the incidence are suture material, closure technique, postop

erative coughing and vomiting, distention, obesity, malignancy, hypoproteinaemia, anaemia, immunocompromised states and contaminated surgeries⁶. The frequency of wound dehiscence 15.3% in our study was 11.5%. The higher frequency of wound dehiscence is in contrast with many Western studies which showed an incidence of 0.4 to 3.5% but is in accordance with the study done by Mathur⁷ which showed that the problem of wound dehiscence is much more prevalent in South East Asia than the Western world. This may be attributable to poor nutritional state of patients, delayed presentation to the tertiary care hospitals, poor quality of suture material, disease like tuberculous abdomen which is endemic to countries of South East Asia and higher load of emergency surgeries.

Our study showed that deep tension suturing is a simple an effective way of managing partial wound dehiscence which is associated with less morbidity and mortality. The mean length of stay was significantly higher in abdominal dressing group than Deep tension suturing group and later development of incisional hernia was also a problem which was seen in dressing group which increased the frequency of re-explorations and further surgeries on patients.

CONCLUSION:

Deep tension suture is an effective way of managing patients with partial wound dehiscence and associated with less morbidity in terms of length of stay, further need of re-operations and later development of incisional hernia as compared to only dressing.

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