



“STUDY OF RISK FACTORS FOR ABDOMINAL WOUND DEHISCENCE WITH EMPHASIS ON ITS PREVENTION AND MANAGEMENT”

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ABSTRACT

Burst abdomen (abdominal wound dehiscence) is a severe post-operative complication. Burst abdomen is defined as post-operative separation of abdominal musculo-aponeurotic layers. The study aims to find etiological factors of burst abdomen in hospitalised patients, evaluate current management methods and to compare conservative and operative approach with respect to complication and outcomes. All cases presenting with abdominal wound dehiscence after surgery were included. An elaborate clinical history was taken in view of the significant risk factors, the types of surgery performed, type of disease involved and management methods and their outcome.

KEYWORDS : Abdominal wound dehiscence, Burst abdomen

INTRODUCTION:

Wound dehiscence is described as partial or complete disruption of an abdominal wound closure with or without protrusion and evisceration of abdominal contents before cutaneous healing.

Wound dehiscence is a serious postoperative complication associated with high mortality and morbidity. Having significant impact on health care cost associated with a mortality rate of 15-20%. Because of high mortality medical and surgical preventive measures are necessary in peri-operative period. Good knowledge of risk factors is mandatory for prevention.

Dehiscence is a partial or total separation of previously approximated wound edges, due to a failure of proper wound healing. This scenario typically occurs 5 to 8 days following surgery when healing is still in the early stages.

The causes of dehiscence are similar to the causes of poor wound healing and include ischemia, infection, increased abdominal pressure, diabetes, malnutrition, smoking, and obesity. Superficial dehiscence is when the wound edges begin to separate and by increased bleeding or drainage at the site. The clinician should investigate the wound for worrisome signs, including infection or necrosis. Prompt identification is important for preventing worsening dehiscence, infection, and other complications. Evisceration is a complication of complete wound dehiscence, where intra-abdominal organs herniate through the open wound.

Abdominal wound dehiscence (burst abdomen, fascial dehiscence) is a severe postoperative complication, with mortality rates reported as high as 45%. The incidence, as described in the literature, ranges from 0.4% to 3.5%.

Abdominal wound dehiscence can result in evisceration, requiring immediate treatment. Prolonged hospital stay, high incidence of incisional hernia, and subsequent reoperations underline the severity of this complication

The goal of the underlying study was to evaluate possible risk factors for abdominal wound dehiscence and to design a risk model based on independent risk factors. This model can be used to assess the risk for individual patients, and it may prove useful for prevention strategies in clinical studies, e.g., development of alternative closure techniques, in high-risk patients.

AIM- Is to study the various risk factors leading to abdominal wound dehiscence and its prevention and surgical management.

OBJECTIVES-

To assess the incidence of wound dehiscence in patients undergoing abdominal surgery, to assess the risk factors causing abdominal wound dehiscence in elective and emergency abdominal surgery, type of disease involved in causing abdominal wound dehiscence, measures to effectively prevent and manage the abdominal wound dehiscence.

MATERIAL AND METHODS:

THE STUDY OF RISK FACTORS FOR ABDOMINAL WOUND DEHISCENCE WITH EMPHASIS ON ITS PREVENTION AND MANAGEMENT was conducted at Index Medical College Hospital and research Centre, Indore. The study included the patients who got admitted in department of General Surgery between March 2019 to September 2020. It was an observational study of the patients who had undergone elective and emergency abdominal surgeries and developed abdominal wound dehiscence following the surgery.

Inclusion Criteria:

- All patient who had under gone elective and emergency abdominal surgery irrespective of either sex, gender and they had abdominal wound dehiscence following the surgery.
- Patients who gave consent for the investigation and treatment.

Exclusion Criteria:

- All patients with wound dehiscence on sites other than abdomen.
- Patient not willing to give consent for further management.
- Patient who had left hospital against advice.

Data Collection and Methods

Registration details of all the patients including their name, age, sex were noted. Consent of each patient was taken. A thorough history of each patient was taken regarding education of the parents, family history, history of previous surgery or any treatment, history of drug allergy, history of any co morbidity, history of steroid intake. The study includes all cases who presented with abdominal wound dehiscence after the abdominal surgery. An elaborate clinical history and clinical examination was been conducted. The data was noted on proforma which included all the risk factors like age, gender, nature of disease, type of surgery, nutritional status, anemia, co-morbidities (diabetes mellitus, hypertension, chronic obstructive pulmonary disease, steroid use, immunodeficient state). Wounds were examined after 3rd post-operative day of surgery to see the signs of wound infection, Patients were managed accordingly as and when required.

Sample Size: 60 cases of abdominal wound dehiscence are evaluated in the study period of 18 months. Hence this study is feasible for sample size of 60 patients.

Statistical Analysis: All the quantitative variables in the present study such as age and sex distribution of patients with abdominal wound dehiscence were expressed in terms of frequency and percentage.



Wound Dehiscence In Case Of Exploratory Laparotomy With Perforation Repair



Wound Dehiscence In A Duodenal Ulcer Perforation Case

RESULT AND OBSERVATION

The present study entitled “STUDY OF RISK FACTORS FOR ABDOMINAL WOUND DEHISCENCE WITH EMPHASIS ON ITS PREVENTION AND MANAGEMENT” is carried out in the Department of General Surgery, at Index Medical College and Hospital and research centre , Indore (Madhya Pradesh) .

Table 1: Incidence of abdominal wound dehiscence in different age groups.

Age group	No. of case	Percentage
20 - 30	04	6.66%
31 – 40	11	18.33%
41 – 50	15	25%
51 – 60	18	30%
>60	12	20%
Total	60	100

Abdominal wound dehiscence was seen in all age group, the most common age group was found to be 51- 60 years (30%). The youngest patient age observed was 24 yrs. The oldest patient age observed was 70 yrs in our study. The mean age of patient affected was 52 yrs. (S.D = 12.69) .

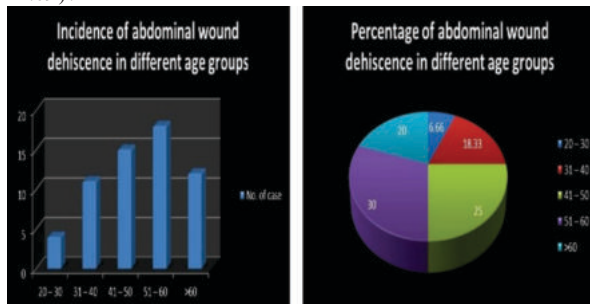


Table 2: Distribution according to gender

Sex	No. of case	Percentage
Male	46	76.66
Female	14	23.33
Total	60	100

Out of 60 patients 46 were male (76.66 %) and 14 were females (23%).The male : female ratio is 23:77 in our study .

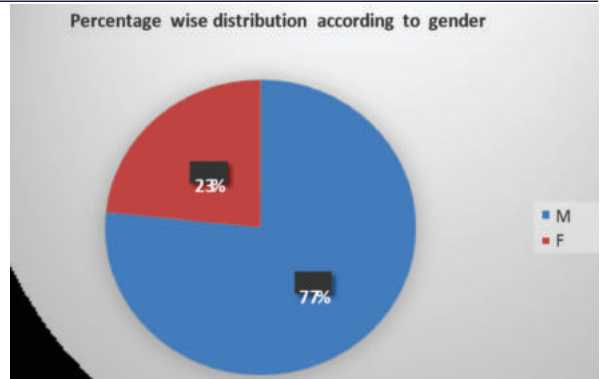
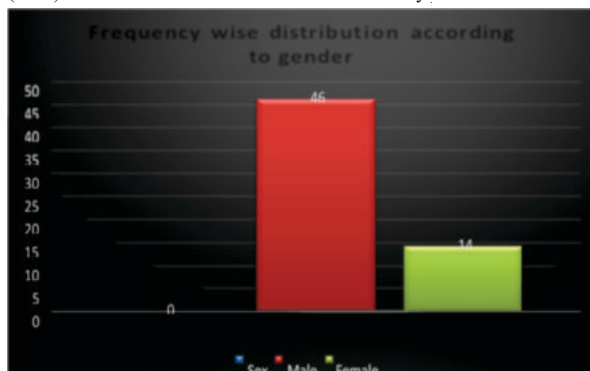
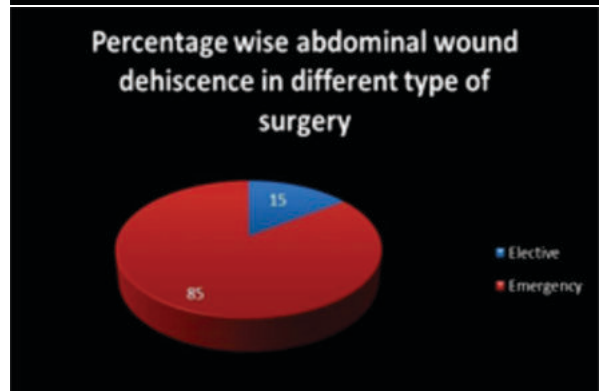
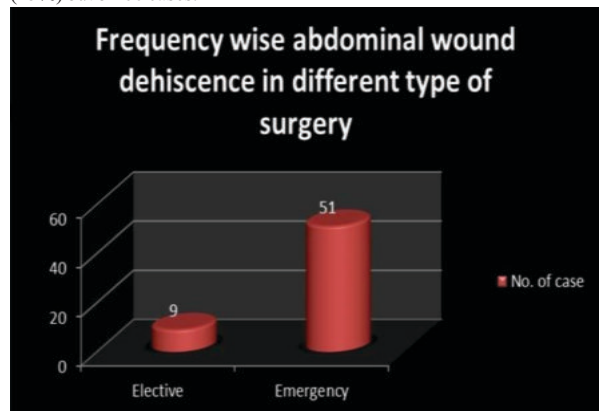


Table 3 : Incidence of abdominal wound dehiscence in different type of surgery

Type of surgery	No. of case	Percentage
Elective	9	15 %
Emergency	51	85%
Total	60	100%

Wound dehiscence in our study was found to be more common in emergency surgeries 51 (85%) as compared to elective surgeries 09 (15%) out of 60 cases.



Incidence of abdominal wound dehiscence of different type of procedure done out of 60 cases, perforation repair was performed for 26 cases, Resection & anastomosis for 15 cases, Appendicectomy for 5 cases & other procedures were also done like splenectomy, mesentery repair, adhenolysis etc. In our study majority of cases were of perforation repair.

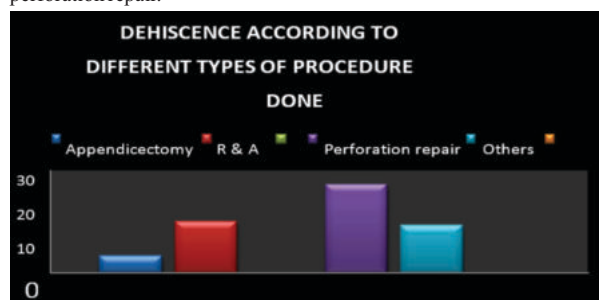


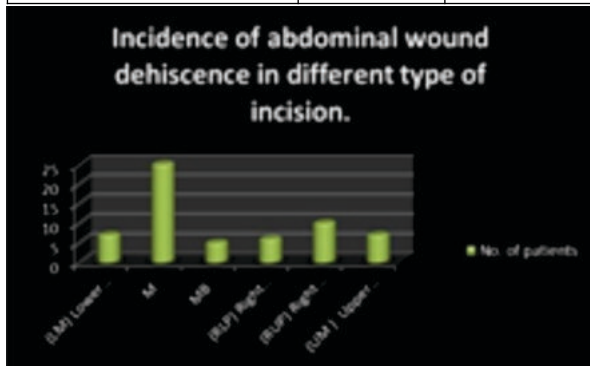
Table 4:

Type of procedure	No. of case	Percentage
Appendectomy	05	8.33%
R & A	15	25%
Perforation repair	26	43.33%
Others	14	23.3%
Total	60	100

Incidence of abdominal wound dehiscence in different type of incision. The majority of the cases in our study were operated with Midline incision 25 cases (41.66%). 10 cases were operated with right upper paramedian incision (16.66%).

Table 5:

Type of incision	No. of patients	Percentage
(LM) Lower midline	07	11.66%
Midline	25	41.66%
Mc Burney's	05	8.33%
(RLP) Right lower paramedian	06	10%
(RUP) Right upper paramedian	10	16.6%
(UM) Upper midline	07	11.66%
Total	60	100%



Management of wound dehiscence

In our study 24 cases were managed conservatively, 18 by secondary suturing and 18 cases by tension suturing.

Table 6:

Type of Wound Dehiscence	No. of patients	Management
Partial wound dehiscence	24	Conservative Management
	18	Secondary suturing
Complete wound dehiscence	18	Tension suturing
	00	Mesh repair



Summary:

It is an observational study of risk factors for abdominal wound dehiscence with emphasis on its Prevention and management. Study was conducted in the duration of 18 months from March 2019 to September 2020 at Index Medical college, hospital and research centre Indore, in the department of general surgery. 60 patients were taken in this study, who had undergone abdominal surgeries. All the age groups were considered in the study and the most common age group for abdominal wound dehiscence was 51 - 60 yrs.

Incidence was commonly seen in males, female: male ratio being 7:23.

Surgical procedures which included perforation closure carried higher incidence of wound dehiscence. According to our study the patients who underwent emergency surgery carried higher risk of perforation. The midline incision had higher incidence of wound dehiscence as compared to other incisions.

In our study 51 patients had anemia. Out of 60 patients of abdominal wound dehiscence, perforation closure was done in 26 cases, Malignancy resection with anastomosis in 13 cases, 05 cases of Blunt trauma abdomen underwent exploratory laparotomy with either splenectomy or mysentry repair and other 16 cases were found in our study.

In our study diabetes and hypertension were the major co morbid factors which were associated with abdominal wound dehiscence. Incidence of abdominal wound dehiscence was more common with the patients who had BMI > 24.9 followed by patients with BMI < 18.5. The two type of wound dehiscence were observed, namely complete wound partial wound dehiscence. The patient who had complete wound dehiscence they were managed by tension suturing. The patients who had partial wound dehiscence they were managed either conservatively or by secondary suturing.

CONCLUSION:

Abdominal wound dehiscence is a serious sequel of impaired wound healing. Factors contributing in wound dehiscence are as- Old age, anemia, malnutrition, obesity, hypoproteinemia, any co morbid condition, emergency procedure. During intra operative phase, peritoneal contamination, improper choice of suture material & poor suturing technique predisposes to burst abdomen. Midline incisions has higher incidence of wound dehiscence. If the above risk factors are well understood and proper management is done, there can be a significant decrease in morbidity and mortality. Management of abdominal wound dehiscence needs sincere attention by the treating surgeon on early identification of risk factors and effective proper closure techniques. Further studies to investigate management of wound dehiscence and innovative techniques like negative pressure wound devices, VAC therapy are still in progress.

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