

Frequency of Abdominal Wound Dehiscence /Burst Abdomen in Patients of Laparotomy

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ABSTRACT

Background: Wound dehiscence is a surgical problem in which a wound crack along a surgical incision. It is sometimes called wound disruption, wound breakdown or wound separation.

Objective: To find out the frequency of abdominal wound dehiscence in patients with laparotomy.

Study design: Descriptive cross sectional study.

Material and methods: 385 patients having age of 12-70 yrs with sign of laparotomy have participated such that blunt abdominal trauma, fire arm injury and peritonitis. Patients had been admitted in the surgical unit. After comprehensive history, complete physical and systematic examination have been done. Data was analyzed using SPSS version 10.0. For indication of laparotomy and wound dehiscence, frequency and percentage were presented.

Result: 263 male (68.31%) and 122 female (31.69) participated in study. Mean age was 35.72 ± 12.732 . About 4.42% (n=17) patients had abdominal wound dehiscence. In 12-30 years age group, 4/152 patients had abdominal wound dehiscence. Among the age group 31-50 years, 7/177 patients and in age 51-70 years, 6/56 patients had wound dehiscence.

Conclusion: In laparotomy patients, abdominal wound dehiscence is prominent obstacle that can be noticed pre operatively and genuine measurements should be taken to lessen its frequency.

Keywords: Wound dehiscence, laparotomy, peritonitis

INTRODUCTION

When intestine, omentum or viscera are noticed through abdominal wound, it is regarded as abdominal wound dehiscence. It ranges from 0.4% to 3.5%. Frequency of burst abdomen in Asian countries ranges from 4.1 to 6.6% . 10-30% of burst abdomen occurs in emergency cases by Indian authors. The abdominal wound disruption is divided into two phases such as partial or complete disruption.

Exploratory laparotomy is a laparotomy helps in obtaining informations that cannot be collected through clinical diagnostic method. Its process was conducted to notice intra abdominal injury. Peritoneal breach is not obligatory to visual wound mandating surgery^{1,2}. The aim of laparotomy was important in patients with penetrating abdominal pain (PAT)³. Exploratory laparotomy becomes chief tool in finite facilities⁴. It is regarded as special surgical tool when bleeding is profused⁵.

Exploratory laparotomy with capsula endoscopy , CT and mesenteric angiography for the diagnosis of ovarian with unclear gastrointestinal bleeding in patients have been used⁶. When diagnostic peritoneal lavage is positive then exploratory laparotomy is performed⁷.

Laparotomy is regarded as finer option in case of ventilation, intra abdominal hypertension pain and dehiscence⁸. Following exploratory laparotomy, wound infection and healing is very difficult. Naturally skin repair itself after injury is called wound healing⁹.

Two factors ,local and systematic factors effect the speed efficacy and manner of wound healing¹⁰. Other factors like skin substitutes, biomembrane, scaffolds and many other biologics promote wound healing through different processes¹¹. Factors like diabetes , arterial and venous diseases, Infection, metabolic deficiencies of old age contribute to non healing of wounds¹².

In wound healing, time plays important role¹³. If tissue epithelization over demanded area is slow, a scar will produce¹⁴. If epithelization is fast, the healing will result in regeneration¹⁵. Wound healing is divided into two phases, early phase and cellular phase¹⁶.

Epithelization of tissues move to the wound area from barrier between wound and environment¹⁷. Contraction is important phase in wound healing and repair¹⁸. Moisture helps in wound healing fast¹⁹.

As stem cells have the ability to differentiate. Therefore, plays important part in wound healing²⁰.

MATERIALS AND METHODS

Before starting the study, acceptance was acquired from ethical committee of hospital through OPD/ER department, the patients have been mentioned in the study in consecutive mode. All patients who have history of blunt trauma, penetrating trauma like fire arm and stab wound to abdomen or after x ray are abdomen or ultrasound indication revealed indication of peritonitis were registered in the study after proceeding their informed written agreement. For more direction, all patients were admitted in the surgical unit. Complete general, physical and systematic examination was done after comprehensive history. Laparotomy was schemed and done under the supervision of consultant who were having at least 5 years of experience. Their name ,age gender, address and sign of laparotomy hence all information had been put down in a predesigned performa.

Data was examined using SPSS version 10.0. To calculate mean and standard deviation for qualitative variables such as age descriptive statistics was utilized. For wholly categorical variables such as gender, sign of laparotomy and dehiscence of wound, frequency and percentages were handed out. Data has been stratified by age , gender, and indication of laparotomy. Following variables such as dehiscence of wound, chi square has been used with 5% level of significance to know the difference by age , gender and indication of laparotomy following outcome variables such as dehiscence of wound.

RESULTS

Considered patients have mean age of 35.72 ± 12.732 , 263 male (68.31%) and 122 female (31.69%) took part in study. 4.42% (n=17) patients had abdominal wound dehiscence that accounted for 3.38% (n=13) male and 1.04% female (n=4). In 12-30 years age group, 4/152 patients ,in 31-50 years age group, 7/177 patients, in 51-70 years age group 6/56 patients had dehiscence of wound. 8/218 patients (peritonitis) as indication of laparotomy had wound dehiscence. 6/105 patients (abdominal trauma) had wound dehiscence after laparotomy whereas 3/62 patients (firearm injuries) showed this state after surgery.

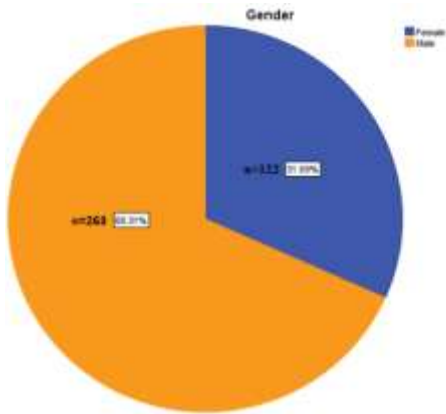


Figure 1: Gender distribution of the study population

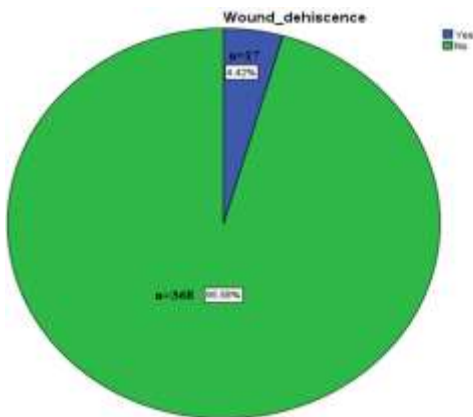


Figure 2: Frequency of wound dehiscence among study patients

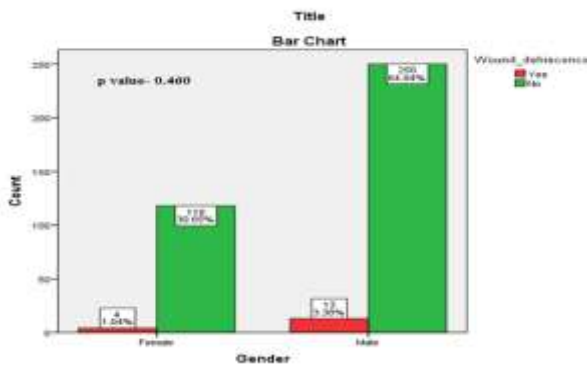


Figure 3: Stratification for wound dehiscence with respect to gender

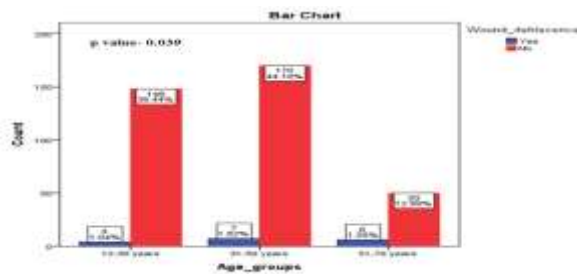


Figure 4: Stratification for wound dehiscence with respect to different age groups

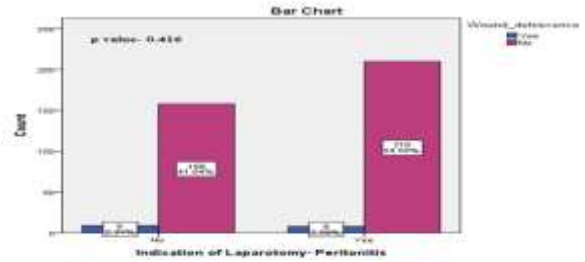


Figure 5: Stratification for wound dehiscence with respect to patients with Peritonitis

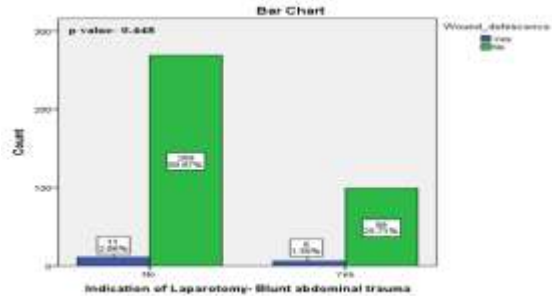


Figure 6: Stratification for wound dehiscence with respect to patients with blunt abdominal trauma.

DISCUSSION

When intestine, omentum or other viscera's were observed in abdominal wound, a burst abdomen is present. Literature description incidence comprises from 0.6% to 6%^{21,22}. Observational incidence in the tertiary hospitals ranges around 5-9%²³. Its occurrence observes within 6th or 8th day after operation. There are some factors relating to the burst abdominal incidence are closure, incidence, suture, coughing, distention, vomiting, jaundice, diabetes mellitus, anaemia and wound infection²⁴. In different studies, male to female ratio of abdominal wound dehiscence was 2.3²⁵. It is quite close to present study such as 2.15. The mean age of patients was 35.72 ± 12.732. This study showed that incidence of abdominal dehiscence is 4.42%. Other study has showed different incidences for example 0.6-6% laparotomies with different risk factors, 15 to 23% among serious risk element and emergency surgeries²⁶. Some studies showed 5.9% in 117 patients²⁷. Sign of laparotomy was Peritonitis in patient (56.6%), 27.3% cases in blunt abdominal trauma patients and firearm injuries in 16.1% in operated wound and 122 female patients developed abdominal wound in present study.

The frequency of abdominal wound dehiscence in age groups 12-30 years, 4/15 patients (2.65%), 31-50 years of age group 7/177 patients (3.95%) had developed wound dehiscence.

CONCLUSION

Abdominal wound dehiscence in laparotomy patients is an observed complication that can be forecasted pre-operatively and genuine measurements must be held to lessen its frequency.

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