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WOUND DEHISCENCE: STILL A CHALLENGE FOR SURGEONS

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ABSTRACT

Background: A variety of procedures are performed in both General Surgery and Gynecological and Obstetrical settings among which exploratory laparotomy is a common one. A number of indications are there for exploratory laparotomy in both specialties; however complications remain the same and wound dehiscence is one of most devastating. Wound dehiscence which can be complete or partial is a challenge for surgeons. The aim of this study was to find out the frequency of wound dehiscence in patient who underwent exploratory laparotomy both settings.

Methodology: This multicenter prospective comparative study was conducted from Jan 2009 to December 2009. Hundred patients of both genders admitted and operated in emergency and elective surgical ward of Bhittai General Hospital, Hyderabad and Department of Gynecology & Obstetrics, Muhammad Medical College, Mirpurkhas were included in this study after obtaining informed consent. Sampling technique used was non-probability convenience sampling. Fifty patients were randomized into two groups A & B each. Patients with abdominal traumatic wound were randomized into group A. Fifty patients operated for elective general surgery and OBG were included in Group B.

Results: A total of 100 patients were included in this and randomized into two equal groups of 50 patients each. Out of 100 patients 12 patients (12%) had wound dehiscence. A total of 4 patients (4%) had widespread wound dehiscence whereas 8 patients (8%) had incomplete wound dehiscence. In this study 3 patients (6%) patients were having burst abdomen in Group-A out of which 2 (4%) were male and 1 (2%) was female. Whereas 5 patients (10%) had burst abdomen in Group-B out of which 3 (6%) were male and 2 (4%) were female.

Conclusion: Many origins of wound dehiscence are avoidable. By optimizing systemic parameters of patient especially with regarding to effective and judicial control of infection and nutritional status, frequency of wound dehiscence can be controlled.

Keywords: wound dehiscence, burst abdomen, exploratory laparotomy

INTRODUCTION

Wound dehiscence is a frequently reported post-operative complication encountered by surgeons, especially in emergency cases.[1] The deeper layers of wound are involved and infected and the covering skin is mostly spared. Wound dehiscence is more reported in male patients various causing factors have identified which includes suturing material and technique, poor surgical technique and increased intra-abdominal pressure leading to poor wound healing.[1] An increased frequency of wound dehiscence is associated with layered closure of abdomen rather than mass closure and reason and factors associated with wound dehiscence are more understandable today as compared with old times due to increased understanding of pathophysiology of the underlying process of dehiscence. Optimized technique with regular follow-up results into better outcome and decreased frequency of dehiscence. Choice of incision is dependent on many variables including the tension lines of skin which determines the anatomical position like in transverse

TABLE I
Gender Distribution

	Group A n=50	Group B n=50
Males	27 (54%)	31 (62%)
Females	23 (46%)	19 (38%)

TABLE II
Patients with wound dehiscence

	Number of patients N=100	Percentage (%)
Wound dehiscence	12	12
- Complete	4	4
- Partial	8	8

abdominal wall, however many surgeons prefer the midline incision due to its easy access to abdominal cavity.[2]

The surgical experience of surgeon is an important variable in wound dehiscence. Suture material is also an important factor in determination of dehiscence. It is suggested that monofilament suture like Prolene should be used to prevent dehiscence.[3]

A number of other factors also play an important role in determination of outcome of wound dehiscence which can be controlled by delayed closure of wound dehiscence which also includes wound infection. Judicious use of broad spectrum antibiotics should be considered. Tight sutures also lead to dehiscence which can be controlled by delay closure of wound or removing of alternate sutures. Wound infection should be dealt aggressively because it determines the morbidity and mortality.

METHODOLOGY

This multicenter prospective comparative study was conducted from Jan 2009 to December 2009 for a period of one year. After obtaining informed consent patients were included in this study. Sampling technique used was non-probability convenience sampling. Hundred patients of both genders admitted and operated in emergency and elective surgical ward of Bhittai General Hospital, Hyderabad and Department of Gynecology & Obstetrics, Muhammad Medical College, Mirpurkhas were included in this study. Fifty patients were randomized into two groups A & B each. Patients with abdominal traumatic wound were randomized into group A.

Fifty patients operated for elective general surgery and OBG were included in Group B. In both groups of Patients all baselines investigations were done. Patients with co-morbidities were excluded from this study. All relevant information regarding study was recorded on a predesigned proforma. All cases were operated by consultants. Wounds were examined on 3rd, 5th and 8th postoperative day. Any infection, seroma and other collections were dealt accordingly.

RESULTS:

A total of 100 patients were included in this and randomized into two equal groups of 50 patients each. In group A, 27 patients (54%) were male whereas 31 patients (62%) were females. In group B, 23 patients (46%) were male whereas 19 patients (38%) were females. (Table I)

Out of 100 patients 12 patients (12%) had wound dehiscence. A total of 4 patients (4%) had widespread wound dehiscence whereas 8 patients (8%) had incomplete wound dehiscence. (Table II). In this study 3 patients (6%) patients were having burst abdomen in Group-A out of which 2 (4%) were male and 1 (2%) was female. Whereas 5 patients (10%) had burst abdomen in Group-B out of which 3 (6%) were male and 2 (4%) were female.

A few of patients had partial wound dehiscence which was observed a week later after surgery. In Group-A only one patient (2%) had partial wound dehiscence where as in Group B partial wound dehiscence was observed in 2 patients (4%) only. In group-A 4 patients were having serogenous discharge where as in group B 6 patients were having serogenous discharge.

DISCUSSION

Ever since exploratory laparotomy is practiced, wound dehiscence is a common complication faced by surgeons, which if not treated accordingly, can lead to life threatening situations.[3,4] Wound dehiscence also termed as burst abdomen needs early detection and prompts treatment failing to which leads to disastrous consequences. Varying frequency of wound dehiscence has been reported in international and local literature.[1,3,4] A few of authors have reported wound dehiscence of 1-2% where is the frequency in local literature is quite high i.e. around 6%.[5,6,7] It is also reported that male gender is more frequently encounter the wound dehiscence and same was observed in this study as well. In cases of severe infection or sepsis; it is advised that the instead of closure of wound it should be left open till the infection is controlled. Once the infection is controlled the wound can be closed with delayed wound closure.[7]

It is reported in literature that majority of cases having burst abdomen are operated during emergency[5] and same was observed in our study as well. A large number of surgeons now prefer the midline incision instead of Para median incision for abdominal exploration because of easy accessibility to all quadrants of abdomen as it is easy and simple to perform and close.

Among a number of variables responsible for burst abdomen wound closure is of utmost importance. One of major consideration should be given to the length of suture as compare with the length of wound and the closure should be tension free.[7] A number of technique for the closure of abdominal have been discussed in international literature,[3] among those the large number of authors are of view that continues running non absorbable suture is best method for closure of abdominal wound.[7] The quality of suture material is also of utmost value, because the breakdown of suture will result into wound opening, which might result into wound dehiscence. Few authors have mentioned that in patients having wound dehiscence broken sutures were found which might cause the dehiscence of wound.[8]

A number of factors are unavoidable among which the foregoing pathology of abdomen is important for example peritonitis. Wound dehiscence is observed frequently in patients having peritonitis. Threat of such patients can be foresighted by abdominal wound dehiscence risk index. A number of other factors are also mentioned in recent published literature including persistent infection, serous discharge, and nutritional status of patient are among most important detrimental factors determining the fate of wound and makes wound more exposed to dehiscence.[9,10]

CONCLUSION

Various causes of wound dehiscence are preventable. Patients need to be well prepared for surgery beforehand especially with regarding to effective and judicial control of infection and optimizing all systemic parameters of patient including nutritional status of patients.

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