



**ANALYTICAL STUDY OF ABDOMINAL WOUND DEHISCENCE IN A TERTIARY CARE HOSPITAL**

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**ABSTRACT**

**Background:** Wound dehiscence is one of the most dreaded complications faced by the surgeons. It refers to post-operative separation of abdominal musculo-aponeurotic layers. It's incidence in the adult population is reported to be 0.3-3.5% and among elderly it is as high as 10%.

**Objective:** To assess the association and prevalence of Risk factors involved in causing Abdominal wound dehiscence and to study the incidence of wound dehiscence in elective and emergency surgery and also incidence based on type of incision taken during the surgery.

**Methodology:** In this study 50 patients of post-operative abdominal wound dehiscence were studied at General Surgery Department, Government General Hospital, Kadapa.

**Results:** Majority of the patients were in the age group between 51- 60 years with the mean age of the affected patients being 44.23 years, with an equal incidence among males and females. The incidence was found to be high in surgeries done in emergency compared to those done in elective settings. Most common predisposing factors being anemia, diabetes mellitus and hypoproteinemia.

**Conclusion:** Intra-peritoneal infection is the most important factor in predicting wound dehiscence. Patient factors like old age, anemia, malnutrition, obesity, patients with peritonitis, hypertension, diabetes, act as determinant for wound dehiscence. Emergency procedure is more prone for wound dehiscence.

**KEYWORDS :** wound dehiscence, anemia, hypoproteinemia, diabetes mellitus, intra-peritoneal infection, emergency surgery.

**INTRODUCTION:**

ABDOMINAL WOUND DEHISCENCE (Acute wound failure or burst abdomen) refers to post-operative separation of abdominal musculo-aponeurotic layers<sup>1</sup>. It's incidence in the adult population is reported to be 0.3-3.5% and among elderly it is as high as 10%<sup>2,3</sup>. It is one of the most dreaded complication faced by surgeons and is of greatest concern because of the need for intervention, the risk of evisceration, surgical wound infection, recurrence and Incisional hernia formation<sup>1</sup>. With this background we have conducted a study to assess the association and prevalence of risk factors causing Abdominal wound dehiscence. Also to study the incidence of wound dehiscence in elective and emergency surgery and also incidence based on type of incision taken during the surgery.

**METHODOLOGY**

Our study was a prospective study conducted on 50 patients who developed gaping of abdominal wound and discharge from the surgical site in Department of General Surgery, Government General Hospital, Kadapa with during the period between January 2021 to December 2021 for a period of 1 year.

**Inclusion Criteria:**

1. Patient's age > 15 years.
2. Patients presenting with abdominal wound dehiscence after undergoing elective and emergency surgery.

**Exclusion Criteria:**

1. All female patients who developed wound dehiscence after any Gynecological procedure.
2. All patients who refuse Investigations and treatment.
3. Patients managed outside and referred here for management of abdominal wound dehiscence.

4. Patients getting discharged against medical advice before completion of treatment.

**RESULTS**

**Age Wise Distribution:**

In this study majority of the patients belong to age group between 51 to 60 years. Youngest patient was 16 years and the oldest patient was 75 years of age. The mean age of the patients affected was 44.23 years.

AGE	NO. OF CASES	PERCENTAGE
<20	7	14
21-30	6	12
31-40	10	20
41-50	8	16
51-60	13	26
61-70	5	10
>70	1	2
<b>TOTAL</b>	<b>50</b>	<b>100</b>

Most of the patients were in the age group of 51-60 years, followed by 31-40 years.

**Sex Wise Distribution:**

GENDER	NO.OF CASES	PERCENTAGE
MALE	24	48
FEMALE	26	52

There is almost an equal incidence of abdominal wound dehiscence in both male and females.

**Co-Morbid Conditions:**

TYPE OF INCISION	NO. OF CASES	PERCENTAGE
UPPER MIDLINE	5	10
MIDLINE	31	62

KOCHER'S	1	2
RIGHT PARAMEDIAN	3	6
TRANSVERSE	6	12
MCBURNEY'S	4	8
TOTAL	50	100

CONDITIONS	NO OF CASES	PERCENTAGE
DIABETES MELLITUS	15	30
HYPOPROTEINEMIA	19	38
ANEMIA	34	68
MALIGNANCY	5	10

It was observed that 68% of the patients who developed wound dehiscence were anemic.

Diabetes mellitus, Hypoproteinemia and anemia are the most important risk factors for wound dehiscence.

#### Frequency Of Abdominal Wound Dehiscence In Relation To Type Of Incision:

Out of 50 cases 30 cases (72%) were with midline incision. Out of the total cases, 78 % affected were with vertical incisions.

#### Effect Of Emergency Surgery In Development Of Wound Dehiscence:

SURGERY	No. of CASES	PERCENTAGE
EMERGENCY	35	70
ELECTIVE	15	30

In the present study, out of 50 cases 35(70%) were operated as emergency surgeries. It clearly indicated an increased incidence of wound dehiscence in patients who underwent an emergency procedure compared to elective procedure probably due to intra-abdominal sepsis, lack of bowel preparation and other patient factors.

## DISCUSSION

#### Comparison Of Sex Distribution:

SEX	OUR STUDY	JOHN SPILLIOTIS et al <sup>4</sup>	FREDDY M.PENNIN CKX et al <sup>5</sup>
MALE	24(48%)	9(60%)	88(75%)
FEMALE	26(52%)	6(40%)	29(25%)

In our study it was found that 48% were males with 52% being females. Our study showed that there was no gender predilection and that sex was not a risk factor for wound dehiscence.

In the study conducted by JOHN SPILLIOTIS et al<sup>4</sup>, there was 60% incidence in males with 40 % in females.

In the study done by FREDDY M.PENNIN CKX et al<sup>5</sup> showed that 75 % were males with females only being 25% which showed a higher incidence of wound dehiscence in males.

#### Comparison Of Age Group:

AGE	OUR STUDY	S H WAQAR et al <sup>6</sup>	CAVIT COL et al <sup>7</sup>
MEAN	44.23 years	39.67 years	53 years

In our study the mean age of group was found to be 44.23years, whereas in the study conducted by SH WAQAR et al<sup>6</sup> which showed a mean age of 39.67 years. In the study conducted by CAVIT COL et al<sup>7</sup> mean age was higher compared to our study which was 53 years.

#### Comparison Of Incidence In Elective And Emergency Surgery:

TYPE OF SURGERY	OUR STUDY	S H WAQAR et al <sup>6</sup>	AFZAL et al <sup>8</sup>
EMERGENCY	70%	72%	90%
ELECTIVE	30%	28%	10%

Our study showed that 70% of the patients who developed abdominal wound dehiscence had undergone surgeries in

emergency. In a study conducted by S H WAQAR et al<sup>7</sup> showed similar results whereas in the study done by AFZAL et al<sup>8</sup> showed that 90% of the patients who developed wound dehiscence had undergone surgeries in emergency clearly showing a higher incidence of wound dehiscence in patients who underwent surgeries in emergency.

The study by Afzal s et al<sup>8</sup> in DHQ hospital Faisalabad from January 2002-June 2003 the main risk factors associated with wound dehiscence were anemia, obesity, hypoproteinemia, diabetes mellitus etc; In our study 68% of patients had anemia, 38% had hypoproteinemia, 30% diabetes mellitus and sepsis being a major determinant with 62% of the cases.

In a study conducted in the University of Copenhagen, Hvidovre hospital in 2001 shows that the incidence of wound dehiscence is more common in patients with vertical incision than in those with transverse incision(p=0.0001)<sup>9</sup>.

In our study out of 50 patients 72% patients underwent surgery with midline incisions and 6% patients with right para-median incisions i.e; 78% of the patients with vertical incisions had wound dehiscence.

## CONCLUSION

Abdominal wound dehiscence causes significant morbidity and mortality.

Intra-peritoneal infection is the most important factor in predicting wound dehiscence.

Patient factors like old age, malnutrition (anemia, hypoproteinemia) obesity, patients with peritonitis, hypertension, diabetes, act as determinant for wound dehiscence.

Surgeon factors like vertical incisions, improper suture techniques and improper aseptic precautions which may lead to wound infection and then wound dehiscence.

Emergency procedure is more prone for wound dehiscence.

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