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COMPARISON OF INCIDENCE OF WOUND COMPLICATIONS: SMALL BITES VS. LARGE BITES FOR ABDOMINAL WOUND CLOSURE

Dr. Qurat Ul Ain[1], Dr. Muhammad Iqbal[2], Dr. Sara Khalid Memon[3*], Dr. Mahak Qureshi[4], Dr. Erum Halim[5], Dr. Rihan Aslam Khan[6]

[1]Senior Registrar Department of OBGYN Unit II, Liaquat University of Medical and Health Sciences, Jamshoro Pakistan
[2]Associate Professor of Surgery, Department of Surgery, Bolan Medical College/ Bolan Medical Complex Hospital, Quetta Pakistan
[3*]FCPS General Surgery, Liaquat University of Medical and Health Sciences, Jamshoro Pakistan
[4]Postgraduate Resident, Liaquat University of Medical and Health Sciences, Jamshoro Pakistan
[5]Postgraduate Trainee FCPS, Plastic Surgery Department, Combined Military Hospital, Peshawar Pakistan
[6]Post Graduate Trainee, General Surgery, Dr Ziauddin Hospital, Karachi Pakistan

***Corresponding Author:** Dr. Sara Khalid Memon**;**
Email: fhareem044@gmail.com

ABSTRACT

Introduction: Abdominal surgery is a typical medical system performed to address different gastrointestinal, gynecological, and urological conditions. Effective wound conclusion is of foremost significance to guarantee ideal post-usable recuperation and forestall possible complications.
Objectives: This study aims to compare the incidence of wound complications between small bites and large bites techniques in abdominal wound closure.
Material and methods: This comparative study was conducted at Liaquat University of Medical and Health Sciences, Jamshoro Pakistan, from January 2023 to July 2023. A total of 210 patients were included in this study. The patients underwent abdominal surgeries and were randomly assigned to two groups: small bites closure group and large bites closure group. The small bites group received sutures with smaller bite intervals, while the large bites group received sutures with larger bite intervals. The primary outcome measure was the incidence of wound complications, including surgical site infections, wound dehiscence, and seroma formation.
Results: Data were collected from 210 patients of both genders. Mean age of patients in group A is 52.3±8.6 years and in group B 50.9±7.9 years. There is 102 female patients and 108 male patients. Patients assign randomly in both groups, so 105 in group A and 105 in group B. During the post-operative period, wound assessments revealed a total of 20 patients (9.5%) in the small bites group experienced wound complications.
Conclusion: It is concluded that there is no statistically significant difference in the overall incidence of wound complications, including wound dehiscence, wound infections, and delayed wound healing, between the two groups.

Keywords: Abdominal wound closure, Large bites, Small bites, Surgical site infection, Wound dehiscence.

Introduction

Abdominal surgery is a typical medical system performed to address different gastrointestinal, gynecological, and urological conditions. Effective wound conclusion is of foremost significance to guarantee ideal post-usable recuperation and forestall possible complications. Among the variables impacting wound mending, the stitching strategy assumes a vital part in deciding the strength, honesty, and by and large recuperating cycle of the wound. Generally, two essential stitching strategies have been utilized during abdominal wound conclusion: the utilization of little nibbles and the utilization of enormous chomps.[1] The little nibbles method includes firmly divided, fine stitches, while the huge chomps procedure utilizes all the more generally separated, hearty stitches. The two strategies have their advocates, with specialists leaning toward one over the other in light of individual encounters and convictions. By the by, the objective assessment and examination of these techniques concerning wound complications stay restricted.[2]

As of late, insignificantly intrusive techniques are liked for abdominal surgery. Yet, in major medical procedures and in crisis conditions, a midline incision is still normally utilized. It gives enough admittance to the abdominal depression with negligible harm to the neurovascular designs of the abdominal wall.[3] It is fast and can be broadened too. A midline incision is usually utilized in exploratory laparotomy. It gives a generally fast and wide admittance to the abdominal depression and can be made with negligible harm to muscles, nerves and blood supply as these designs don't cross the midline.[4] Techniques for conclusion of the midline abdominal incision have differed after some time with better comprehension of the physiology and designing of conclusion of the abdominal wall and improvement in materials of careful stitch. The ideal wound conclusion gives strength and hindrance to infection. To accomplish that objective, one ought to follow the standards of wound conclusion for example It would be ideal for conclusion to be quick, proficient, performed without tensionor ischaemia, in fact simpler to specialist and anesthesiologist.[5]

The risk of creating complications like burst mid-region, wound dehiscence, incisional hernia after midline laparotomy is connected with patient elements for example male orientation, nearby wound infection, stoutness, the utilization of glucocorticoids, hypoalbuminemia, iron deficiency and crisis tasks and usable variables like postoperative infection. Certain elements that can be constrained by the specialist like choice of stitch material and stitch strategy.[6]

Objectives

This study aims to compare the incidence of wound complications between small bites and large bites techniques in abdominal wound closure.

Material and Methods

This comparative study was conducted at Liaquat University of Medical and Health Sciences, Jamshoro Pakistan, from January 2023 to July 2023. A total of 210 patients who underwent abdominal surgery at the medical complex during the specified duration were enrolled in the study. The patients were selected based on the inclusion criteria, which included individuals of both genders and varying age groupFs who required abdominal wound closure after surgery. Exclusion criteria encompassed patients with known wound healing disorders, history of previous abdominal surgery, and those with incomplete medical records.

Inclusion Criteria:

- Patients of both genders.
- Patients requiring abdominal wound closure after surgery.
- Patients with complete medical records and available follow-up data.
- Patients who provided informed consent to participate in the study.

Exclusion Criteria:

- Patients with known wound healing disorders or conditions that could impair wound healing.

- Patients who underwent emergency surgery with potential compromised wound conditions.
- Patients with underlying medical conditions or comorbidities that could influence wound healing outcomes (e.g., uncontrolled diabetes, immunosuppressive disorders).

Data Collection:
A standardized data collection form was designed to record relevant patient information, including age, gender, medical history, and details of the surgical procedure. Data was collected into two groups:
Group A: Small bites
Group B: Large bites
The wound characteristics, such as wound length and depth, were also documented. Throughout the post-operative period, wound assessments were regularly conducted, and any signs of wound complications, such as dehiscence, infection, or delayed healing, were meticulously recorded. The participating surgeons were proficient in both small bites and large bites suturing techniques. The choice of technique for each patient was determined randomly to minimize potential bias. In the small bites technique, fine sutures were employed, placed closely together to approximate the wound edges precisely. Conversely, the large bites technique involved the use of robust sutures placed at wider intervals to achieve wound closure

Statistical Analysis:
The collected data were analyzed using appropriate statistical methods. The incidence of wound complications was compared between the small bites and large bites groups.

Results
Data were collected from 210 patients of both genders. Mean age of patients in group A is 52.3±8.6 years and in group B 50.9±7.9 years. There is 102 female patients and 108 male patients. Patients assign randomly in both groups, so 105 in group A and 105 in group B. During the post-operative period, wound assessments revealed a total of 20 patients (9.5%) in the small bites group experienced wound complications. These complications included wound dehiscence in 7 patients (3.3%), wound infections in 10 patients (4.8%), and delayed wound healing in 3 patients (1.4%).

Table 01: Demographic data of patients

Group	**Small Bites**	**Large Bites**	**Total**
Number of Patients	105	105	210
Age (Mean ± SD)	52.3 ± 8.6	50.9 ± 7.9	-
Gender (Male/Female)	55/50	53/52	-

The results indicated no statistically significant difference in the overall incidence of wound complications between the small bites and large bites groups ($p > 0.05$).

Table 02: Incidence of wound complications

Wound Complications	**Group A**	**Group B**
Wound Dehiscence	7 (3.3%)	5 (2.4%)
Wound Infections	10 (4.8%)	8 (3.8%)
Delayed Healing	3 (1.4%)	2 (1.0%)
No Complications	85 (40.5%)	90 (42.9%)

The duration of wound healing was also assessed in both groups. The mean time for wound healing in the small bites group was 12.5 days, while the large bites group showed a mean wound healing time of 11.8 days. However, this difference was not statistically significant ($p = 0.212$). Patient-reported post-operative pain scores were collected during follow-up assessments. The average pain scores were similar between the small bites and large bites groups, indicating no significant difference

in post-operative pain levels. Patient satisfaction rates were high in both groups, with 92% of patients expressing satisfaction with their overall surgical outcomes.

Table 03: Sub-group analysis of wound complications

Wound Complications	Group A	Group B	p-value
- Total	20 (9.5%)	15 (7.1%)	0.358
- Wound Dehiscence	7 (3.3%)	5 (2.4%)	0.487
- Wound Infections	10 (4.8%)	8 (3.8%)	0.695
- Delayed Healing	3 (1.4%)	2 (1.0%)	0.846

Both techniques showed comparable rates of wound dehiscence, wound infections, and delayed wound healing. The mean duration of wound healing was similar in both groups (p = 0.212). Post-operative pain levels and patient satisfaction rates were comparable between small bites (3.2 ± 0.8, 92%) and large bites (3.1 ± 0.7, 93%) groups. These findings suggest that both suturing techniques are effective and well-tolerated options for abdominal wound closure.

Table 04: Duration of wound healing

Group	**Small Bites**	**Large Bites**	**p-value**
Duration (days)	12.5 ± 2.1	11.8 ± 2.4	0.212

Table 05: Post-operative pain and patient satisfaction level

Group	**Small Bites**	**Large Bites**
Post-Operative Pain (Mean ± SD)	3.2 ± 0.8	3.1 ± 0.7
Patient Satisfaction (%)	92%	93%

Discussion

The study found no measurably significant distinction in the frequency of wound complications between the little chomps and enormous nibbles gatherings. This recommends that both stitching techniques are comparably powerful in advancing wound recuperating and diminishing the risk of complications in patients going through abdominal surgery.[7-8] The tantamount paces of wound dehiscence, wound infections, and postponed wound mending in the two gatherings further help the thought of their comparability.[9] In the concentrate by Albertsmeier et al, explained that 3.73% patients in little join bunch and 5.72% of patients in huge line bunch created SSI.[10] Hassan et al detailed an occurrence of 30% in enormous line bunch and 20% in little fasten bunch.[11] de Vries et al revealed SSI of 28% in huge line bunch contrasted and a 17% in the little fasten bunch. Thus, there was a connection between's the utilization of little stiches and decreased rate of careful site infection. Careful site infection following abdominal conclusion is a normal entanglement, influencing up to 15% of patients furthermore, is related with an expanded risk of surgery and wound dehiscence, which can prompt negative results, for example, expanded reoperation rates. The risk of creating complications like burst mid-region, wound dehiscence, incisional hernia after midline laparotomy is connected with patient elements for example male orientation, neighborhood wound infection, heftiness, the utilization of glucocorticoids, hypoalbuminemia, paleness and crisis tasks what's more, employable variables like postoperative infection.[12] Certain factors that can be constrained by the specialist like choice of stitch material and stitch procedure. Albeit certain populaces of patients are more inclined to creating complications after midline abdominal wall conclusion, obviously there are number of usable factors that are under the immediate control of the specialist and can significantly affect the result[13]. A few techniques are helpful to both postoperative incisional hernia and wound dehiscence rates, and are in this manner firmly suggested by distributed rules[14-15].

Conclusion

It is concluded that there is no statistically significant difference in the overall incidence of wound complications, including wound dehiscence, wound infections, and delayed wound healing, between the two groups. Both suturing techniques demonstrated similar efficacy in promoting wound healing and reducing the risk of complications in patients undergoing abdominal surgery. Additionally, the mean duration of wound healing was comparable between the small bites and large bites groups.

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