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ORIGINAL ARTICLE

Frequency of Adhesive Intestinal Obstruction following Gynecologic Surgery

BUSHRA NABI[1], ASIF MEHMOOD[2]
[1]*Assistant Professor, Obs and Gynae, Khalifa Gul Nawaz Teaching Hospital Bannu*
[2]*Associate Professor, General Surgery, Khalifa Gul Nawaz Teaching Hospital Bannu*
Correspondence to: Asif Mehmood, Email: surg_asif@hotmail.com

ABSTRACT

Background: Adhesive intestinal obstruction (AIO) is a frequent and severe postoperative complication of abdominopelvic surgery, especially of gynecologic surgeries. It is the cause of morbidity in patients, recurrent hospitalizations and augmented medical charge. Although there has been a rise in surgical methods, AIO has continued to be a clinical issue, particularly in those clinical environments whereby open gynecologic surgeries are commonly conducted.

Objective: To establish the incidence of adhesive intestinal obstruction in the aftermath of gynecologic surgery in a tertiary care hospital.

Methods: It is a retrospective observational study that took place in a Khalifa Gul Nawaz Teaching Hospital Bannu during the period April 2023 to September 2023. The review of hospital records concerning women who had undergone gynecologic surgery was conducted and the cases that were subsequently admitted with intestinal obstruction were identified. The diagnosis of adhesive intestinal obstruction was done on the clinical feature, the basic radiological results and operative confirmation where necessary. The descriptive statistics were applied to analyze the data about patient demographics, type of gynecologic surgery, time interval to presentation, and management outcomes.

Results: Among 1,246 gynecologic surgeries performed in the study, 64 patients experienced adhesive intestinal obstruction and a frequency of 5.1 was obtained. The highest age-related group that was most affected was the 41 50 years age group. The most commonly associated procedure was total abdominal hysterectomy. Almost 50 percent of the patients were reported in less than one year of surgery. In 65.6% the conservative management was successful and in 34.4% surgery was necessary.

Conclusion: Adhesive bowel obstruction is an observable complication after gynaecologic surgery and a considerable percentage of patients would need to be admitted and treated. The morbidity that is associated with it should be minimized through preventive surgical measures and early diagnosis.

Keywords: Adhesive intestinal obstruction; Gynecologic surgery; Postoperative complications; Intestinal obstruction.

INTRODUCTION

Adhesive intestinal obstruction (AIO) is a well-known and severe abdominopelvic operation complication and a major proportion of emergency surgical hospitalizations all over the world[1]. It is caused by the development of fibrous bands between bowel loops or between bowel and peritoneal surfaces after surgical trauma, inflammation or infection. These attachments may affect the motility of the intestine or become mechanically obstructing, which entails severe morbidity of patients and re-hospitalization[2].

Gynecologic surgery plays a significant role as a cause of postoperative development of adhesion owing to the proximity of the female reproductive organs with the intestinal tract[3]. Hysterectomy, myomectomy, salpingo-oophorectomy and pelvic oncologic surgeries usually entail a significant peritoneal dissection, tissue manipulations and uncovered surfaces, which are all risk factors contributing to the development of adhesions. The risk is also elevated when there is a complication of pelvic inflammatory disease, endometriosis or malignancy[4].

The clinical picture of adhesive intestinal obstruction in the postoperative period of a gynecologic surgery is diverse. However, there are those patients who present with acute symptoms including abdominal pain, vomiting and distension but others might later develop intermittent or chronic obstruction several months to years following the first operation[5]. Such variability usually slows the diagnosis and predisposes to the bowel ischemia, perforation, and emergency surgery.

Even though it has been demonstrated that minimally invasive gynecologic procedures lead to a decreased likelihood of adhesion formation, these procedures do not remove the risk of developing adhesion completely[6]. Open gynecologic surgeries are still prevalent in most developing and resource-limited facilities because of inadequate access to laparoscopic services and this adds even more weight to the adhesion issues. Moreover, showing up late and having less follow-ups are also factors that lead to worse results in such populations[7].

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Adhesive intestinal obstruction does not only impact on the quality of life of the patients but it also places a huge burden on the healthcare systems due to extended hospitalization, readmission rates, and high workload on surgeries[8]. The use of adhesion-reduction agents, careful surgical technique, and lesser tissue trauma have proven to be variable in success, and the importance of further assessment of postoperative outcomes has been highlighted.

Although the two are known to be associated, local statistics regarding the incidence of adhesive intestinal obstruction in relation to gynecologic surgery are still scarce in most areas. Differences in surgery, patient characteristics and healthcare system structure require localized assessment that will allow to estimate the extent of the issue and define high-risk groups.

Objective: To find the incidence of adhesive intestinal obstruction after gynecologic surgery and to evaluate its clinical application in the management of the postoperative patient.

MATERIALS AND METHODS

The study was a retrospective observational study, which was carried out Khalifa Gul Nawaz Teaching Hospital Bannu during the period April 2023 to September 2023.

The sample size of the study was composed of 1246 female patients who had already received gynecologic surgery in the study hospital and had been subsequently admitted with characteristics that were indicative of intestinal obstruction. Reviewed surgeries were gynecologic surgeries such as hysterectomy, myomectomy, adnexal surgeries, and other pelvis surgeries that are open. The patients who had a history of gynecologic surgery elsewhere were excluded so as to make sure that the surgical records were accurate and comprehensive.

Data Collection: Medical records, operation theaters registers, discharge reports, and emergency admissions were used to gather data. The sources of information that were retrieved consisted of patient age, type of gynecologic surgery, surgical approach, time interval between surgery and the onset of symptoms, presenting clinical features, diagnostic modality, management approach and the final outcome of the hospital stay. Only clinical data that is

usually provided routinely, as well as simple investigations like plain abdominal radiographs and ultrasound reports were utilized, without the need to use costly imaging or laboratory procedures.

Diagnostic Criteria: In cases where surgical intervention was needed, adhesive intestinal obstruction was diagnosed by clinical presentation with particular assistance of the available radiological results and intraoperative evidence. Clinical manifestations were abdominal pain, vomiting, distension and constipation and radiologic testing was mainly based on plain abdominal X-rays with either air-fluid levels or bowel loop dilations. Further examination like CT was not deemed necessary to include.

Management Protocol: The patients were treated in accordance with the normal hospital procedures. Nasogastric decompression, intravenous fluids, analgesia, and close clinical attention were considered conservative management. Surgery has been done in those patients that failed to respond to the conservative treatment or their presence of complications like strangulation or peritonitis. No anti-adhesion prevention strategies that were specialized or expensive to implement in management were used.

Outcome Measures: The major outcome measure was the occurrence rate of adhesive intestinal obstruction after gynecologic surgery. The type of original gynecologic procedure related to obstruction, time to presentation, mode of management, and in-hospital outcome such as recovery or surgical intervention were secondary outcomes.

Data Analysis: Basic statistical measures were used to enter and analyze data. The frequencies, percentages, means, and ranges were calculated using the descriptive statistics. The presentation of results was in a tabular and figure format to give a clear representation of the findings without involving complex and expensive statistical software.

Ethical Considerations: The institutional ethical review committee granted the study approval. Since the research was a retrospective study, an informed consent was not applicable. Anonymity of all personal identifiers was used to ensure patient confidentiality in the collection and analysis of data.

RESULTS

Within a period of five years, 1, 246 gynecologic surgeries were conducted at the tertiary care hospital. Among them, 82 of the patients were admitted bearing the characteristics of intestinal obstruction after undergoing gynecologic surgery before. Intestinal obstruction was established as adhesive in 64 patients with an overall frequency of 5.1% of all gynecologic surgical operations. The summary of these findings was compiled in Table 1.

The patients with adhesive intestinal obstruction were aged between 26 and 68 years with an average of 44.3 with SD of 9.6. Most of the patients (37.5) were in the 41-50 years age group then 31-40 years. Table 2 presents age distribution of the affected patients.

When information is considered based on the nature of gynecologic surgery, the most common surgery was total abdominal hysterectomy that presented 40.6% of adhesive cases of intestinal obstruction. This was succeeded by adnexal and myomectomy operations. Fewer cases were found to have been post-gynecologic oncologic. Table 3 provides the data on the correlation between the type of surgery and the occurrence of obstruction.

There was a significant difference in time between presentation with intestinal obstruction and the gynecologic surgery. Almost a half of the patients (46.900) appeared within one year after the surgery, and 21.900 gained symptoms after more than three years after the surgery. Such distribution emphasizes the early and delayed onset of postoperative adhesions as shown in Table 4.

In terms of management, majority of the patients were originally accorded a conservative treatment. Treatment was also successful in 42 patients (65.6) with conservative treatment and 22 (34.4) patients underwent surgical intervention because of the failure of the conservative management or the development of complications. The contrast of conservation and surgical management outcome is described in Table 1, which illustrates a greater percentage of successful non-surgery management.

Generally, most of the patients had an uneventful recovery. Nevertheless, patients undergoing surgical treatment had more prolonged hospital stays than patients undergoing conservative management, which highlights the clinical and resource impact of adhesive intestinal obstruction after undergoing gynecologic surgery.

Table 1: Frequency of Adhesive Intestinal Obstruction Following Gynecologic Surgery (n = 1,246)

Outcome	Number of Patients	Percentage
No intestinal obstruction	1,182	94.9%
Adhesive intestinal obstruction	64	5.1%
Total gynecologic surgeries	1,246	100%

Table 2: Age Distribution of Patients with Adhesive Intestinal Obstruction (n = 64)

Age Group (Years)	Number of Patients	Percentage
21–30	8	12.5%
31–40	16	25.0%
41–50	24	37.5%
51–60	12	18.8%
>60	4	6.2%

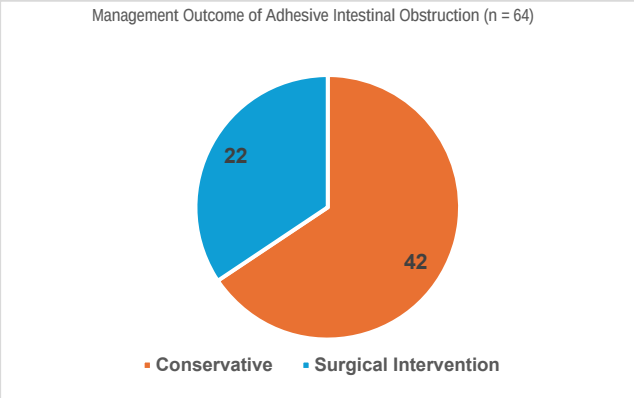
Table 3: Type of Gynecologic Surgery Associated with Adhesive Intestinal Obstruction (n = 64).

Type of Surgery	Number of Patients	Percentage
Total abdominal hysterectomy	26	40.6%
Myomectomy	14	21.9%
Adnexal surgery	12	18.8%
Gynecologic oncologic surgery	8	12.5%
Other procedures	4	6.2%

Table 4: Time Interval Between Surgery and Presentation with Obstruction (n = 64)

Time Interval After Surgery	Number of Patients	Percentage
< 1 year	30	46.9%
1–3 years	20	31.2%
> 3 years	14	21.9%

Figure 1: Management Outcome of Adhesive Intestinal Obstruction (n = 64)



DISCUSSION

Adhesive intestinal obstruction (AIO) is still considered one of the most significant long-term complications of abdominopelvic surgery and still plays a significant role in causing postoperative morbidity.

The rate of adhesive intestinal obstruction within one week of gynecologic surgery in the current study was 5.1% that correlates with the rates reported in other hospital-based retrospective studies with frequencies ranging between 3% and 10% based on the type of surgery and length of follow up in those studies[9,10]. This strengthens the fact that gynaecologic surgeries are a significant risk factor of bowel obstruction caused by adhesions.

The age group of 41-50-years that presents the highest proportion of cases in this study is in line with what has been reported on literature that, women in this age bracket often face major gynecologic surgeries that include hysterectomy and myomectomy, thus exposing them to cumulative trauma of the peritoneum[11]. Age in itself might not be a risk factor independent of the other factors; but it indicates the nature as well as the magnitude of the operations that are normally done at this age.

The procedure that was best related was total abdominal hysterectomy, which comprised over two-fifths of AIO. The result is in agreement with preceding evidence which showed that open hysterectomy has increased risk of adhesion than less invasive procedures because of the significant amount of tissue manipulation and wider peritoneal dissection[12,13]. Also prominent were myomectomy and adnexal surgeries especially when huge fibroids were present or dense pathology of the pelvis.

Almost 50 percent of the patients in this study have reported intestinal obstruction during the first year of surgery, and this result is an indication that the formation of adhesions resulting in the development of clinically significant obstruction can happen very soon after surgery. Other studies have reported similar presentations at an early age although delayed presentations several years later on the surgery are also well documented and were also reported in our data[14,15]. This highlights the protracted character of the complications associated with adhesion and the requirement of continued monitoring in the course of follow-up.

The success rate of conservative management was around two-thirds of patients and this is consistent with published reports that showed that initial non-operative management is successful when there is no strangulation or peritonitis[16]. The importance of conservative management can be emphasized by the success of the conservative management style, especially in resource-constrained environments where preventing repeat surgery lowers the risk of the patient and the cost of health care. Nevertheless, the percentage of patients who needed surgical treatment remained high, which stresses the random nature of adhesive bowel obstruction.

Surgical patients had prolonged hospital stay, which was an indicator of more morbidity rate and recovery period of re-operation. The adhesiolysis surgery in itself poses the threat of additional adhesion development, which forms a cycle of repetitive obstruction as reported in the older literature[17]. This highlights the need to be careful with the surgical procedure in the initial operation to reduce adhesion.

The results of the present study also justify the increased attention to the preventive measures, such as soft tissue manipulation, high-quality hemostasis, and the reduction of the peritoneal trauma in the course of the gynecologic surgery[18]. Although adhesion-prevention barriers and agents have demonstrated some advantage, their application is still restricted in most hospitals because of the cost-impediment and inconsistent supply[19].

By and large, the current research will add useful local data concerning the burden of adhesive intestinal obstruction after gynecologic surgery and aligns with the global evidence that has emphasized this complication as a persistent or lingering clinical problem[20]. Procedure-specific awareness of the risk and prompt identification of the symptoms could help to decrease the morbidity rate and ameliorate patient outcomes.

Limitations: There are a number of limitations in this study. Its retrospective nature depended on the nature of medical records that might have been inaccurate and/or incomplete and hence resulted in under reporting of cases. The experiment was done at one tertiary care hospital, which does not ensure the broad applicability of outcomes. Also there was no uniform availability of the data on the long-term follow-up, which may have underestimated the delayed presentations of adhesive intestinal obstruction. Nonetheless, the study does offer some valuable information on the incidence and clinical presentation of adhesive intestinal obstruction in a real life hospital practice of a gynecologic surgery unit.

CONCLUSION

Adhesive intestinal obstruction is a serious and comparatively common complication after gynecologic surgery, which adds to a lot of postoperative morbidity and healthcare use. The results of the present paper indicate that a significant percentage of women experience adhesive intestinal obstruction following significant gynecologic surgeries, especially the open ones, including total abdominal hysterectomy. The vast majority of cases can be treated conservatively, but still, a significant amount of needed cases involves surgical intervention, which prolongs the hospitalization and burden the patients. These findings underscore the relevance of the use of careful surgical procedure and early detection of signs and symptoms as well as proper follow-up of the patient after surgery to minimize the effects of this avoidable complication and overall patient outcome.

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