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ORIGINAL ARTICLE

Operative versus Non-operative Management of Adhesive Small Bowel Obstruction

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ABSTRACT

Background: Adhesive intestinal obstruction is a frequent consequence following abdominal surgery. Bowel obstruction affects about 95% of persons who have abdominal surgery. This study aimed to provide better management and determine best time for surgical intervention for patients with Adhesive Small bowel obstruction (ASBO). **Subjects and Methods:** This prospective randomized clinical trial was conducted in General Surgery Department, Zagazig University Hospitals. The study included 30 patients of adhesive small bowel obstruction. Patients in this study were divided randomly into two groups: Group (A) included 15 patients underwent non operative (conservative) management and Group (B) included 15 patients underwent operative management. **Results:** Our results showed that 8 (53%) cases of patients in the conservative group underwent surgical intervention due to failure of conservative management and 13(86.6%) of patients in the operative group underwent early exploratory laparotomy. Open appendectomy was the commonest previous operation in all study group followed by Cesarean section. Recurrence of SBO was 7 (46.6%) in the conservative group in comparison 2(13.3%) in the operative group with P value 0.0042, recurrence of SBO was significantly higher in the conservative group. **Conclusion:** Surgery performed early during 24 h of admission in patients of ASBO has shown to be highly effective, with a lower rate of recurrence.

Keywords: Adhesive Small bowel obstruction, Operative versus Non-operative Management.

INTRODUCTION

Acute intestinal obstruction is among the most frequent surgical emergencies. Constipation, vomiting, distention, and abdominal pain are the hallmarks of small intestinal blockage. Intra-abdominal adhesions account for around 75% of small bowel obstruction, typically resulting from prior surgery **[1,2].** Small bowel obstruction occurs in up to 9% of patients following abdominal operations [3, 4]. Of those patients, up to 33% will require surgical intervention **[5, 6].** Following colorectal and oncologic gynecological surgery, the risk of ASBO is at its highest **[4]**.

Three basic procedures form the basis of managing adhesive small bowel obstruction (ASBO): CT imaging, biological testing, and clinical evaluation. Given that prior abdominal surgeries frequently result in ASBO, surgical intervention may appear like an uncertain course of action. Effective conservative treatment may, on the one hand, leave adhesions behind and cause more episodes of intestinal obstruction in the future. However, in popular belief, surgery might be the cause of newly formed adhesions **[7].**

Management:

Correcting fluid and metabolite imbalances is the first step in stabilizing and resuscitating the patient.

Decompression via nasogastric tube. Not only may early imaging and clinical evaluation help with diagnosis, but they can also reveal whether surgery is necessary. It is obvious that individuals who present with clinical and/or radiological evidence of strangulation need to have surgery right away. It may be helpful to consider the traditional clinical signs and symptoms of gut ischaemia, which include fever, leucocytosis, abdominal wall pain, high lactate and C-reactive protein, and chronic, continuous discomfort (as opposed to colicky) **[6].**

Non-operative management (Conservative); the cornerstone of non-operative management is NPO and decompression using a naso-gastric tube and should further include fluid resuscitation, correction of electrolyte disturbances, and a regular clinical and imaging reassessment.

Operative treatment; historically, open surgery has been the standard treatment for adhesive small bowel obstruction. In recent years, laparoscopic surgery for ASBO has been introduced. The potential benefits of laparoscopy include less extensive adhesion reformation, earlier return of bowel movements, reduced post-operative pain, and shorter length of stay.

Less than two laparotomies, one fibrous adhesion causing blockage, and non-medial laparotomy (Mc Burney incision) were the prognostic criteria for effective laparoscopic adhesiolysis.

Conversely, in cases where there were more than two laparotomies, open surgery was recommended. One may regard the existence of several adhesions to be a relative contraindication. The existence of intestinal necrosis brought on by the blockage, extremely dilated loops since they reduce the area of operation, severe comorbidity, including hemostatic, pulmonary, and cardiovascular conditions.

AIM OF THE WORK

This study aimed to provide better management and determine best time for surgical intervention for patients with adhesive small bowel obstruction (ASBO).

METHODS

This prospective controlled randomized clinical trial was conducted at emergency unit, Zagazig University Hospitals during period from March 2023 to January 2024. The study included 30 patients of adhesive small bowel obstruction. Patients in this study were divided randomly into two groups: Group (A) included 15 patients underwent non operative (conservative) management and Group (B) included 15 patients underwent operative management. the mean age of the conservative group (39.6 ± 12.56) and operative group (32.9±14.8) with P value 0.097. The patient or a first-degree relative provided written informed permission, and the research ethics committee approved the study (IRB # 10301-1-1-2023) of Faculty of Medicine, Zagazig University. The work was done in conformity with the World Medical Association's Code of Ethics (Declaration of Helsinki) for human studies.

Inclusion criteria were patients with diagnosis of adhesive small bowel obstruction above the age of 12, both male and female. The exclusion criteria were individuals who have never had abdominal or pelvic surgery, Patients with obstruction due to other identifiable causes, such as incarcerated hernia, Patients with signs and symptoms with strangulation underwent operative management immediately, patient refusal Patients unfit for surgery according to American Society of Anesthesiologists.

All patients underwent history taking, full general and local examination. Routine lab investigations including Complete Blood Count (CBC), electrolytes, C-reactive protein (CRP), coagulation profile, liver and kidney function. Plain X-ray erect and supine position. CT abdomen and pelvis with IV and oral water-soluble contrast (Gastrografin). All patients were quickly hydrated with Ringer lactate solution and had their electrolyte and acid-base imbalances addressed following the clinical and radiological diagnosis of adhesive SBO. Follow up the progress of the contrast by X-ray at definitive point of time at 8h ,at 16h , at 24, 36h if the contrast reach the colon or not .

Preoperative preparations:

Decision making protocol for management of ASBO

Correcting fluid and metabolite imbalances was the first step towards stabilizing and resuscitating the patient. Decompression via nasogastric tube. Using an IV and an oral water-soluble contrast agent for a CT scan (Gastrografin) was done. After suitable intravenous fluid resuscitation and 4 hours of stomach decompression, the water soluable contrast was given via nasogastric tube. After the nasogastric tube was clamped, an abdominal X-ray was obtained to monitor whether the contrast had reached the cecum or not.

Group (A): Non operative (Conservative) management:

The two mainstays of non-operative therapy were naso-gastric tube decompression and nil per os (NPO). Additional non-operative care should involve electrolyte disturbance correction and fluid resuscitation and a regular clinical and imaging reassessment. Patients with failure of conservative treatment, underwent operative management .

Failure of non-operative treatment

Persistent obstruction more than 72 h ,NGT drainage volume more than 500 ml in 3rd day, failure to passage of the contrast to the colon within 36 h , development of symptoms and signs of strangulation increased abdominal pain ,worsening fever and leukocytosis ,all were considered indications for surgery.

Group (B): operative management:

An early surgical intervention (within 24 hours of arrival) was suggested by the decision-making protocol for ASBO patients. within the period of resuscitation and investigation of selected patients to operative group, some of patients were spontaneous improved and the contrast reach the colon within 24 h and didn`t need operative intervention at time of index admission.Before a surgical procedure: all patients received preoperative antibiotics combined with metronidazole at a dosage of 15 mg/kg IV and cefazolin at a dose of 30 mg/kg (maximum dose 2 g).

Surgical abdominal exploration.

Open exploratory laparotomy (figure 1); the best option was a vertical midline incision since it allowed for a quick access into the peritoneum and is generally safe and bloodless. The peritoneum was exposed in a virgin area, preferably by expanding the incision suitably, as there was a possibility that the underlying bowel was adherent to the parietal peritoneum. This required extreme caution. Depending on the expected pathology, the incision was made in the upper, middle, or lower midline. If needed, it was expanded in either direction. A careful examination of the intestines Adhesiolysis was done for those with adhesive band through avascular planes. It is best to do a second examination of the colon after the case is finished to make sure no enterotomies or serosal injuries were overlooked. Any damage seen was fixed, with 3/0 Vicryl or PDS sutures used for primary closure in two layers for bowel injuries smaller than 2 cm. When laceration was more than one-half of the diameter of the lumen, segmental resection and anastomosis was done.

Laparoscopic exploratory laparotomy (figure 2); the initial trocar was placed 5-10 cm away from the patient's previous scar. A minimum of 3 trocars were used, one can use three 5-mm trocars or one 11-mm trocar for the camera, and two 5-mm trocars for the laparoscopic instruments. Blunt and sharp dissection of adhesions to the abdominal wall was down with laparoscopic scissors or the electrocautery Figure 2a, b.

Follow up:

All patients stayed in the hospital under observation till improvement of the general condition. Follow up nutritional status of the patient and any symptoms or sign of sepsis and bacterial infection. IV antibiotics, strong IV analgesic, fluid replacement and electrolytes corrections. Follow up of intestinal sounds and passage of flatus or stool and start oral feeding according to patient exploratory findings. After the patient had been discharged from the hospital, patients were followed up in the outpatient clinic every week for 1 month then every 2 weeks for 2 months then every month for next 3 months. The patient was informed to come to ER if any of intestinal obstruction manifestations occurred as, vomiting, sever colicky pain abdominal distention.

STATISTICAL ANALYSIS

All data from the patient's history, clinical examination, laboratory and imaging tests, and outcome measures were collected, tabulated, and analyzed using the Statistical Package for the Social Sciences (SPSS version 20.0).

RESULTS

Patients were randomized into 2 groups included 15 patients in each group, 15 patients in Group A conservative group, 15 patients in Group B operative group. Our results showed that 8 (53%) cases of patients in the conservative group underwent surgical intervention due to failure of conservative management and 7 (46%) cases showed spontaneous success for conservative management. And 2 (13.3%) patients in the operative group showed improvement and did not need surgery

Regarding the age of the study group: the mean age of the conservative group was (39.6 ± 12.56), the maean age of the operative group was (32.9 ± 14.8) with P value 0.097. The conservative group showed 4(26%) patients were below <30 years and 9 (60%) were in between 30-60 y and 2(13%) >60 years. The operative group showed 9(60%) <30 years, 4(26%) in between 30-60 y, 2(13%) >60 years with P value0.115 table (1). Noticed that the

most common age of the operative group is below 30. And the most common age of the conservative group is in between 30-60 years. The patients of the conservative group were 8 (53%) male and 7(46%) female, the patients of the operative group were 7 (46%) male and 8(58%) female with P value 0.052. Noticed that the most common sex of the conservative group is male and the most common sex for the operative group is female as shown in table (1)

In terms of clinical presentation:

The patients of the conservative groups showed that 12 (80%) patients complained of abdominal pain,10 (66.6%) nausea & vomiting, 9 (60%) constipation and the patients of the operative group 13 (86.6%) complained of abdominal pain, 11 (73.3%) nausea and vomiting, 9 (60%) Constipation. Noticed that the most common clinical presentation of both group is abdominal pain with P value 0.955. It had no statistical difference between two groups. The number of previous SBO of attacks in the conservative group were 1-2 in comparing with 1-4 in the operative group with P value 0.031 which is more significant in operative group table (2) .

Regarding the radiological findings 7(46.6%) patients of the conservative group showed Free peritoneal fluid and 8 (53.3%) patients in the operative group with P value 0.715, both group showed similar results 66.6% in Feces sign there was no statistically difference between both group regarding the radiological findings , but the free peritoneal fluid was more common in the operative group **table (2) .**

Our results about the laboratory findings table 2 Showed that CRP 24.8 ± 7.91 (mg/L) and WBC 9.61 ± 0.8 (G/L) more common in operative management in comparing with conservative group CRP 22.53 ± 8.59 (mg/L) and WBC 9.28 ± 1.05 (G/L) P value 0.229 but it had no statistically difference between two groups .

Regarding previous operations in the study group: History of open cholecystectomy 2 (13.3%) in the conservative group and 1 (6.6%) in the operative group , Open appendectomy 3 (20%) in the conservative group and 6 (40%) in the operative group , Cesarean section 2 (13.3%) in the group of conservative management and 3 (20%) in the operative group , Hysterectomy 2 (13.3%) in the conservative group and 1 (6.6%) in the operative group , Splenectomy 1 (6.6%) in the conservative group and 1 (6.6%) in the operative group , Perforate peptic ulcer 1(6.6%) in the conservative group and 2(13.3%) in the operative group, Perforate appendix 2(13.3.%) in the conservative group, Intussusception 2(13.3%) in the conservative group, 1(6.6%) in the operative group, Umbilical hernioplasty 1(6.6%) in the conservative group **table (3). Noticed that in our study**: Open appendectomy (40%) was the most common previous operation. in operative group followed by Cesarean section (20%) ,Open Appendectomy (20%) was the most common previous operation n conservative group followed by Cesarean section (13.3%) and open cholecystectomy (13.3%). Open appendectomy was the most prevalent previous operation in all research groups, followed by cesarean section.

Previous incisions in the study group; the Kochar's Subcostal incision was 2(13.3%) in the conservative group , 1 (6.6%) in the operative group and the McBurney's incision was 3 (20%) in the conservative group ,6 (40%) in the operative group and the Pfannsteil's incision was similar 4 (26.6 %) in the both groups and Upper mid line incision was 2 (13.3%) in the conservative group and 3 (20%) in the operative group and Lower mid line incision was 2 (13.3%)in the conservative group but the transverse incision was 1(6.6%) in the operative group and 2(13.3%) in the conservative group **table (3)** .

Regarding the Time interval between surgery and obstruction attack (years): It measured 9.2 ± 5.16 in the conservative group and 5.73 ± 4.4 in the operative group. It was more significant increase in the conservative group with P value 0.029 as shown in table **3.**

Post-operative data of the studied cases:

Intraoperative findings in patients underwent surgical interventions; our results showed 8 (53%) of patients underwent surgical operation due to failure conservative management in conservative group, 13 (86.6%) patients in operative group with early operative intervention . Adhesolysis due single band adhesion were 3 (37%) in the group of failure conservative management and 8 (61.5%) in the early operative group with P value 0.774. Adhesolysis due to matted adhesion were 1 (12.5%) in group of failure conservative management and 3 (23%) in operative group with P value 0. 640.Ischemic bowel was found in 2 (25%) of group of failure conservative management and 1 (7.6%) in early operative group with P value 0.715. Bowel perforation was found in 1 (12.5%) group of failure conservative management, 1 (7.6%) in early operative group with P 0. 871.Stoma was required only in 1

(12.5%) failure conservative management with P value 0.031 **table (4).** noticed that need for stoma and ischemic bowel more common in group of failure conservative management.

Factors affecting success of conservative treatment in this study 8 patients showed failure of conservative management in comparison with 9 patient showed spontaneous success of conservative management (7 patient in the conservative group and 2 patient in the operative group)**.** The mean age of group of the failure of conservative management 36 ± 12.4 and 42.29 ± 11.71 in group with successful conservative management with P value 0.154 there is no statistical differences in between 2 groups regarding the age most of patients of failure conservative management below the age of 40. **Sex** 3 (38%) patients were male and 5 (62%) patients were female in group failure conservative management and 5 (56%) males 4 (44%) females in successful group with P value 0.797, there is no statistically differences in between 2 groups regarding the sex as shown in table 5.

In terms of the clinical presentation group of failure conservative mangment the abdominal pain was found in 7 (87.5%), nausea &vomiting was found in 6 (75%) ,constipation was 5 (62.5%) , group of successful conservative the abdominal pain was 6 (67.5%), nausea &vomiting was found in 6 (67%) , constipation was 5 (55%) with P value 0.976 7, there is no statistically differences in between 2 groups regarding clinical presentation . **The number of previous SBO attacks** it was 1-4 in successful group and 1-4 in failure group with P value 0.562 with no statistically difference. **Time interval between surgery and obstruction attack (years)** it was 7.22± 5.26 i n successful group and 9.5 ± 5.87 in failure group with P value 0.204 with no statistically difference as shown in table 5 . **The Radiological findings:** the free peritoneal fluid was found in 7 (87.5%) the group of failure of conservative management and 3(33%) in the group of successful conservative management with P value0.047 it was statistically difference with failure conservative management and a predictive factor for failure conservative management, and feces sign in CT was found in 5 (62.5%) in group of failure conservative management and 3 (33%) of patients group of successful conservative with P value 0.076 . **The laboratory investigation**: the WBCs was 8.58 ± 0.37 in the successful group and 9.94 ± 1.01 in the failure conservative group with P value 0.00089 and CRP was 17.22 ± 2.54 in successful conservative group in comparison to 27.5 ± 9.01 in failure conservative group with P value 0.0024 . Both results of WBCs and CRP had significant value as a predictive factor for failure of conservative management if CRP more than 20 and WBCs more than 9. **The Previous operations** Open cholecystectomy was found in 2 (25%), Open appendectomy 2 (25%), Hysterectomy 1 (12.5%) , Perforate peptic ulcer 1 (12.5%), Perforate appendix 1 (12.5%), Umbilical hernioplasty 1 (12.5%). in failure conservative group with P value 0.993 , Open appendectomy 1 (11%), Hysterectomy 1(11%), Perforate peptic ulcer 1 (11%), Perforate appendix 1 (11%), Intussusception 2 (22.5%) in successful conservative group with P value 0.993 , there was no significant value in between both groups regarding previous operations as shown in **table 5.**

The short term outcome in the study group :

The mortality rate in both groups; It was 1 (6.6%) in both group with P value0.057. one patient died in the operative group after 2 days from operation due to pulmonary embolism the intraoperative findings was matted adhesions and underwent adhesolysis, another one patient died in the conservative group after failure conservative management and underwent surgery, after 2 weeks from operation due to chest condition ending in multi-organ failure and the intraoperative findings was ischemic bowel and underwent resection and anastomosis as shown in table 6 . **The recurrence of SBO:** The recurrent cases were 9 cases 5 of them from the successful conservative group , 4 from patients who had surgical intervention (2 of them in early operative intervention group and other 2 due to failure of conservative management) .in brief the recurrence was 7 (46.6%) in the conservative study group at all, and 2(13.3%) in the operative study groups with P value 0.0042, recurrence of SBO was significantly higher in the conservative group. The 5 recurrent cases of the successful conservative group had been recurrent within 1-2 months 2 of them need surgery with complex adhesions were found interaoperative , the 4 recurrent cases from operative group had been recurrent within 5-6 months and had been discharged after conservative management as shown in **table 6** .

Table (1): Descriptive data of the study population:

Clinical presentation	Conservative group	Operative group	p
Abdominal pain	12 (80%)	13 (86.6%)	0.955
Nausea &vomiting	10(66.6%)	11(73.3%)	
Constipation	9(60%)	9(60%)	
Number of previous SBO attacks	1-2 (mode=1)	1-4 (mode=2)	0.031
Radiological findings			
Free peritoneal fluid	7(46.6%)	8 (53.3%)	0.715
Feces sign	10 (66.6%)	10 (66.6%)	1
Laboratory tests			
WBC count (G/L)	9.28 ± 1.05	9.61 ± 0.8	0.173
CRP(Mg /L)	22.53 ± 8.59	24.8 ± 7.91	0.229

Table 2: preoperative data of the study group

Clinical presentation	Conservative group	Operative group	p
Abdominal pain	12 (80%)	13 (86.6%)	0.955
Nausea &vomiting	10(66.6%)	11(73.3%)	
Constipation	9(60%)	9(60%)	
Number of previous SBO attacks	1-2 (mode=1)	1-4 (mode=2)	0.031
Radiological findings			
Free peritoneal fluid	7(46.6%)	8 (53.3%)	0.715
Feces sign	10 (66.6%)	10 (66.6%)	1
Laboratory tests			
WBC count (G/L)	9.28 ± 1.05	9.61 ± 0.8	0.173

Table (3): Previous operations and previous incisions in the study group:

Previous operations	Conservative group A	Operative group B
Open cholecystectomy	2 (13.3%)	1 (6.6%)
Open appendectomy	3 (20%)	6 (40%)
Cesarean section	2 (13.3%)	3 (20%)
Hysterectomy	2 (13.3%)	1 (6.6%)
Spleenectomy	1 (6.6%)	1 (6.6%)
Perforate peptic ulcer	1(6.6%)	2(13.3%)
Perforate appendix	2 (13.3%)	-
Intussusception	1(6.6%)	1(6.6%)
Umbilical hernioplasty	1(6.6%)	-
Previous incisions		
Kochar's Subcostal incision	2(13.3%)	1 (6.6%)
McBurney's incision	3 (20%)	6 (40%)
Pfannsteil's incision	4 (26.6 %)	4 (26.6%)
Upper midline incision	2 (13.3%)	3 (20%)
Lower midline incision	2 (13.3%)	-
Transverse incision	2(13.3%)	1(6.6%)

Table (4): Postoperative data of the studied cases:

Intraoperative findings	Conservative group A	Operative group B	P
	Failure of conservative Management (N=8)	Early Operative group (N=13)	
Single band adhesion	3 (37%)	8 (61.5%)	0.774
Matted adhesion	1 (12.5%)	3 (23%)	0.640
Ischemic bowel	2 (25%)	1 (7.6%)	0.715
Bowel perforation	1 (12.5%)	1 (7.6%)	0.871
Stoma requirement	1 (12.5%)	0	0.031

Table (5): Factors affecting success of conservative treatment:

Item	Successful conservative (N=9)	Failed conservative (N=8)	p value
Age	42.29 ± 11.71	36 ± 12.4	0.154
Gender			
Male	5 (56%)	3 (38%)	0.797
Female	4 (44%)	5 (62%)	
Previous surgery			
Appendectomy	1 (11%)	2 (25%)	0.993
Cesarean section	2 (22.5%)	-	
Cholecystectomy	-	2 (25%)	
Hysterectomy	1 (11%)	1 (12.5%)	
Splenectomy	1 (11%)	-	
Perforated PU	1 (11%)	1 (12.5%)	
Perforated appendix	1 (11%)	1 (12.5%)	
Intussusception	2 (22.5%)	-	
Umbilical hernioplasty	-	1 (12.5%)	
Time interval between surgery and obstruction attack (years)	7.22 ± 5.26	9.5 ± 5.87	0.204
Clinical presentation (symptoms)			
Abdominal pain	6 (67%)	7 (87.5%)	0.976
Vomiting	6 (67%)	6 (75%)	
Constipation	5 (56%)	5 (62.5%)	
Number of previous attacks	1-4 (mode=1)	1-4 (mode=2)	0.562
Lab. investigations			
WBCs	8.58 ± 0.37	9.94 ± 1.01	0.00089
CRP	17.22 ± 2.54	27.5 ± 9.01	0.0024
Radiological signs			
Free peritoneal fluid	3 (33%)	7 (87.5%)	0.047
Feces sign (CT)	3 (33%)	5 (62.5%)	0.076

Table 5: Post-operative data of the studied cases:

Interaoperative findings	Conservative group A	Operative group B	P
	Failure of conservative Management (N=8)	Early Operative group (N=13)	
Single band adhesion	**3 (37%)**	**8 (61.5%)**	**0.774**
Matted adhesion	**1 (12.5%)**	**3 (23%)**	**0.640**
Ischemic bowel	**2 (25%)**	**1 (7.6%)**	**0.715**
Bowel perforation	**1 (12.5%)**	**1 (7.6%)**	**0.871**
Stoma requirement	**1 (12.5%)**	**0**	**0.031**

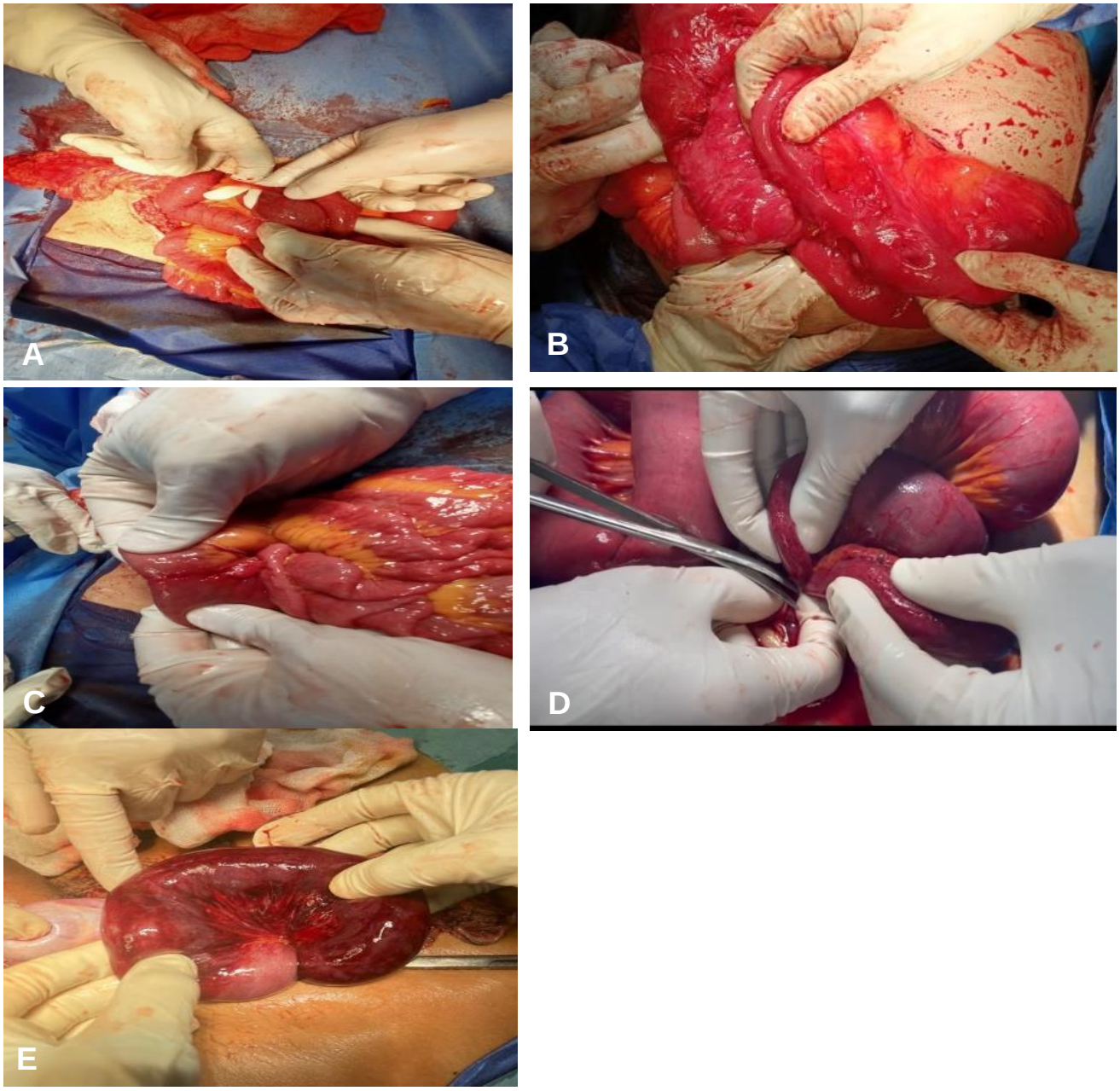

Figure (1): A; single Adhesive band, **B;** complex adhesions, **C;** serosal injury during adhesolysis , **D:** Dissection of adhesions, **E;** Gangrenous bowel loop due to adhesion

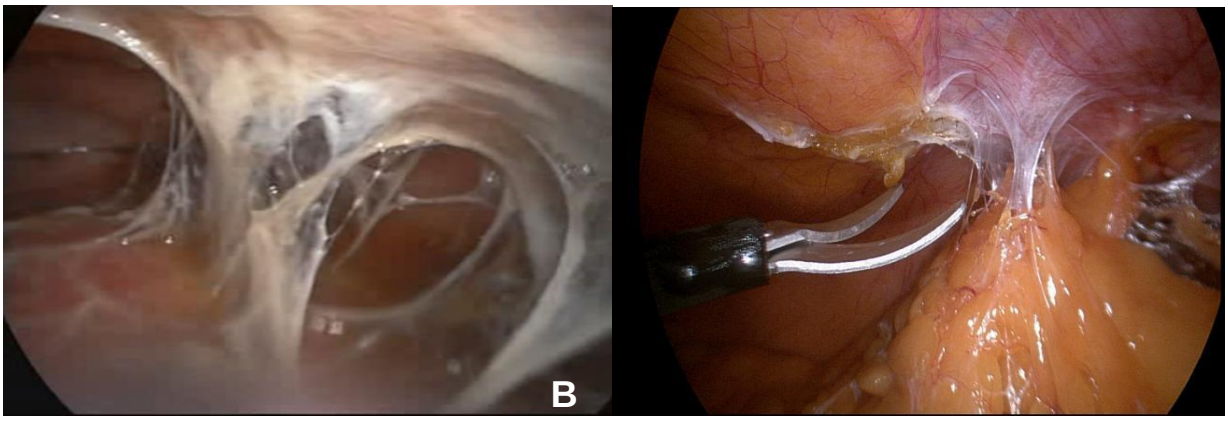

Figure (2): A: Intestinal adhesions seen by laparoscope. **B**: Dissection of adhesions

DISCUSSION

To improve ASBO therapy and identify the ideal timing for surgical surgery for ASBO patients, we carried out this prospective study. Within the current study, patients who failed conservative care were most frequently under 40 years old, with the surgical group's average age being under 30, and the conservative group's average age being between 30 and 60 years old. found that patients under 40 years old had a similar requirement for surgical treatment either early or as a result of conservative treatments failing. This finding was consistent with a study by **Strike et al.** that found that younger patients had a higher chance of needing recurrent abdominal surgery **[8].**

Our study showed that the most common sex of the conservative group is male and the most common sex for the operative group and group of failure of conservative management is female this result was similar to study of **Strike et al. [8]** who reported that female sex show the greatest risk for requiring repeat abdominal surgery.

Adhesions can be the cause of pain if they limit the movement or distensibility of peritoneum or bowel. Stretching pain secondary to adhesions attached to the liver, intestine, or other organs may also contribute to chronic abdominal pain; and the adhesions can partially or intermittently cause intestinal obstruction. One study noted that small adhesions appear to cause recurrent pain without other symptoms, whereas large adhesions produce pain in combination with symptoms indicative of intermittent bowel obstruction **[9]**.

Our study showed that the most common clinical presentation of the operative group is abdominal pain 86.6% of the cases and second most common presentation is nausea and vomiting 73.3%.The most common clinical presentation of the conservative group is abdominal pain (80%) and the most common clinical presentation for failure of conservative management is abdominal pain (87%).and number of previous SBO attacks In the conservative group were 1-2 in comparing with 1-4 in the operative group with P value 0.031 which is more significant in operative group. Our findings concur with those of **Khalil et al.,** who discovered in their investigation that the number of prior ASBO events significantly influenced the likelihood of experiencing a recurrent episode with patients treated conservatively **[10]**. Noticed that abdominal pain and increase number of previous attacks are more common in operative group.

Our study showed that Open appendectomy (40%) was the most typical prior procedure in operative group followed by Cesarean section (20%), Open Appendectomy (20%) was the most typical prior procedure in conservative group followed by Cesarean section (13.3%) and open cholecystectomy (13.3%). Open appendectomy was the most typical prior procedure in all study group followed by Cesarean section .Our results are similar to **Kabbash et al.** who discovered in their research that of all procedures, postoperative adhesion bowel obstruction is most strongly associated with lower pelvic surgery. Notable surgical procedures include those for gynecologic disorders, colorectal diseases, and appendicitis. More often than upper GI procedures, blockage results from lower abdominal and pelvic surgery **[11].**

Our study showed that laboratory findings showed that CRP 24.8±7.91 (mg/L) and WBC 9.61 ± 0.8 (G/L) more common in operative management in comparing with conservative group CRP 22.53 ± 8.59 (mg/L) and WBC 9.28 ± 1.05 (G/L) P value 0.229 but it had no statistically difference between two groups.

Our study about Time interval between surgery and obstruction attack (years) measured 9.2±5.16 in the conservative group and 5.73±4.4 in the operative group .It was more significant increased in the conservative group with P value 0.029.

Our study about interaoperaive findings showed that single band adhesolysis is more common in operative group than group of failure of conservative TTT also noticed that need for stoma and ischemic bowel more common in group of failure of conservative TTT what mean that early operative associated with high survival benefit and less need for complex surgery our results are similar to **Pedro et al. [12],** they found that patients with ASBO who receive early surgical intervention have a considerable survival advantage, a lower risk of systemic and local complications, and a shorter hospital stay.

Our study showed that SBO recurrence was less common in operative group (13.3%) and group of failure of conservative management (25%) than conservative group (46.6%). Our findings concur with those of **Behman et al.** who discovered in their research that surgical intervention for the initial episode of ASBO is linked to a markedly lower chance of recurrence**[5]**.

Although it is possible, laparoscopic adhesiolysis for small intestinal blockage is only appropriate

when carried out by a skilled laparoscopic surgeon on a carefully chosen patient base. The higher morbidity rate associated with laparatomic conversion must be prevented by carefully choosing patients. The following variables need to be taken into account: the quantity of prior laparatomies, the kind of surgery, the degree of adhesion, the amount of time since the onset of symptoms, the degree of bowel loop dilatation on X-ray pictures, in combination with ischemia and intestinal necrosis. Laparoscopic adhesiolysis is a dependable and safe procedure**[13].**

Our study about factors affecting success of conservative treatment we found difference between 2 groups statistically non significance except in laboratory findings, we found WBCs and CRP had significant value as a predictive reason to conservative management's failure if CRP more than 20 and WBCs more than 9.

CONCLUSION

The initial evaluation should focus on the identification of potential Complications such as ischemia, strangulation, perforation, peritonitis, and systemic sepsis as urgent surgical management is required in these cases.

CONFLICTS OF INTEREST

The authors report no conflicts of interest.

FUNDING

None declared

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