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Evaluation of the outcomes of surgically treated intestinal obstruction cases in Iraqi patients

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ABSTRACT— Intestinal obstruction is known as the most common surgical emergency in Iraq and represents a major challenge for most surgeons. This study aims to the evaluation of the outcomes of surgically treated intestinal obstruction cases in Iraqi patients. A study was conducted on patients who underwent surgical intervention for intestinal obstruction, where 60 patients from the hospital were included, and cases where their information and demographic data were fully available and were excluded. Sixty patients were included in this study (12 patients who had unfavorable surgical outcomes) and (48 patients who had favorable surgical outcomes), and the most common and frequent complication among patients was wound infection with 4%. Length of illness, comorbidity, intraoperative bowel condition, bowel resection was done, and length of hospital stay after operation were significantly independent factors associated with the surgical outcome management of intestinal obstruction.

KEYWORDS: Intestinal, obstruction, favorable, complication, comorbidity, abdominal, bowel.

1. INTRODUCTION

Intestinal obstruction (IO) is defined as a partial or complete blockage of the bowel that fails intestinal contents to pass through. It is one of the most common acute abdominal disorders that require emergency management [1], [2]. Based on anatomical location, IO is mainly classified as small bowel obstruction (SBO) and large bowel obstruction (LBO) [3]; it can also either be mechanical or functional and non-mechanical on basis of the underlying pathophysiology of obstruction [3].

The causes of bowel obstruction differ significantly. In Iraqi patients, the main causes were hernias and tumor, the leading causes of intestinal obstruction. The early identification of the disease through diagnosis contributes to the reduction of the mortality rate [4].

As for the management of patients with intestinal obstruction, which includes the presence of a correction to the deficiency hypovolemia, electrolytes depletion, Intestinal obstruction can be mechanically relieved, depending on several treatments, including intravenous fluid resuscitation, naso-gastric tube insertion [5], [6].

The unfavorable outcome of the surgical treatment of IO is primarily related to the seriousness of patients in the late stages of the disease, which is attributed to the late treatment of patients, as well as the diagnostic and tactical errors which are largely related to the increase in the proportion of the elderly and aging with comorbidities [7- 10].

Mortality in AIO, according to several authors, varies from 4 to 30% (D. RIDER V.P. et al., 2009). This difference in results is explained by the study of different groups of patients - by age, causes, forms, and stages of IO.

As for the average death rate is about 15%. Meanwhile, all researchers unanimously agree that more than half of all IO deaths occur in elderly and geriatric patients [11- 13].

2. Material and method

2.1 Patient sample

60 patients were collected from different hospitals in Iraq, where the study was specialized in evaluation outcomes of surgically treated intestinal obstruction cases in Iraqi patients.

2.2 Study design

A study was conducted on patients who underwent surgical intervention for intestinal obstruction, where 60 patients from the hospital were included, and cases where their information and demographic data were fully available were excluded.

Patients' independent variables were collected, including age, gender, hospitalization claim, clinical characteristics related to patients before surgery, and clinical characteristics during and after surgery.

The statistical analysis program SPSS IBM SOFT 22 was used to analyze the data and demographic information of the patients that were collected based on the electronic record in the hospital

Patients were distributed according to gender into 40 male patients and 20 female patients. The marital status of the patient was studied, in addition to the educational level.

2.3 Statistical analysis

The results of patients were expressed using the mean values and the standard deviation as ± and recorded the logistic regression to the ages of patients to know the resulting differences in addition to logistic regression for complications found by relying on the reliability field (CI-95%). The statistical differences between the parameters were also recorded using (p-value)

2.4 Study period

After obtaining the necessary licenses and requirements from the competent committees to collect patients, the study period was a full year for collecting primary and secondary data from 22-3-2020 to 1-5-2021

2.5 Aim of study

This study aims to Evaluation of the outcomes of surgically treated intestinal obstruction cases in Iraqi patients

3. Results

The ages in this study were classified into four groups, where the patients were distributed according to age (31-50) witnessed the most distribution to patients by 35% for 21 patients, then 16-30 to 20 patients by 33.3, (above 50) for 15 patients with 25% as shown in table 1 below.

Table 1 – Distribution of patients according to age

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Age	Frequency	P%	Chi – square	P value
≤15	4	6.6	1.92	0.84
16- 30	20	33.3		
31 – 50	21	35		
Above 50	15	25		

Table 2- Socio-demographic characteristics of patients of IO

Sex		
Male	45	75
Female	15	25
Level education		
uneducated	12	20
Students school	5	8.33
Secondary	25	41.6
College	15	25
Higher education	3	5
Smoking		
Yes	10	16.66
No	50	83.3

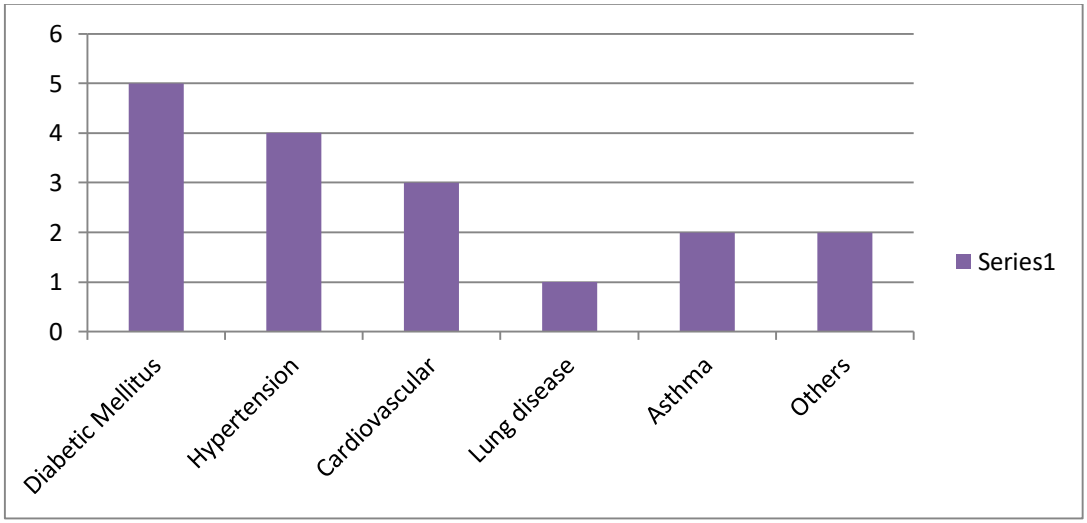

Fig 1- The presence of diseases (Comorbidity)

Table 2- Distribution of patients according to the Previous history of abdominal

P	c	P%
Previous history of abdominal		
Yes	15	24.8
NO	32	53.33
Intestinal obstruction	4	6.6
Appendicitis	4	6.6
Peritonitis	3	5
Gynecologic and obstetric cases	2	3.3
Unknown	2	3.3

Table 3- Preoperative clinical characteristics of IO patients

P	C	P%
Care		
NG tube inserted	15	25
Rectal tube deflation	13	21.6
IV fluid resuscitation	10	16.6
others	22	36.6
symptoms		
Vomiting	10	16.6
Abdominal pain	8	13.3
Crampy abdominal pain that comes and goes.	5	8.3
Constipation	5	8.3

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Swelling of the abdomen.	4	6.6
Diarrhea	9	15
Others	19	31.66

Table 4- Result of a patient at Intraoperative procedure

	C	P
Intraoperative diagnosis		
Adhesion and band	2	3.3
Small bowel obstruction	40	66.6
ileosigmoid knotting	3	5
Large bowel obstruction	10	16.6
Strangulated hernia	4	6.66
Intussusception	1	1.6
Intra-operative bowel condition		
Viable intestinal obstruction	33	55
Untwisting the volvulus	10	16.6
Hartman's colostomy	7	11.6
Gangrenous intestinal obstruction	10	16.6
Duration of illness		
>48 h	33	55
≤48	27	45
Hospital stays		
More than 8 days	50	83.3
Less and equal eight days	10	16.6

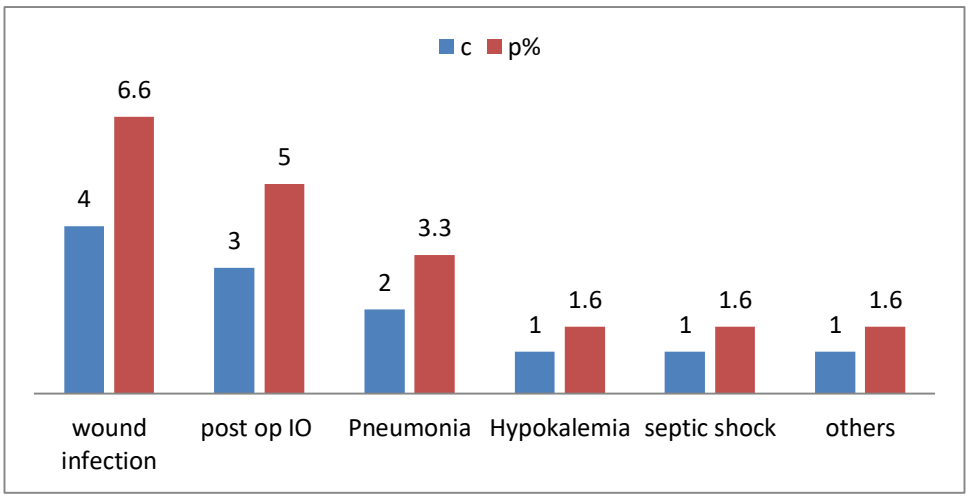

Table 5- Types of postoperative complications documented from patients who had unfavourable surgical management outcomes of IO

4. Correlation

Table 6- Factors associated with surgical management outcome of IO

P	Fav	Un fav	P-value
Intra-operative bowel condition			
Viable intestinal obstruction	25	8	0.003
Untwisting the volvulus	9	1	0.07
Hartman's colostomy	6	1	0.02
Gangrenous intestinal obstruction	8	2	0.04
Duration of illness			
>48 h	25	8	0.045
≤48	23	4	0.084
Hospital stays			
More than 8 days	42	8	0.004

Less and equal 8 days	6	4	0. 23
Comorbidity			
Yes	7	5	0.65
No	40	8	0.001

5. Discussion

Intestinal obstruction is one of the causes that threaten the lives of patients in emergency situations, and several reasons were found in this study that led to the occurrence of intestinal obstruction.

It is small bowel obstruction in 40 patients with 66.6%, followed by large bowel obstruction in 10 patients with 16.6%, followed by a strangulated hernia in 4 patients with 6.66%, and ileosigmoid knotting in 3 patients with 5%.

The complications that occurred after surgery were studied in this study. The most frequent complications for patients were wound infection for four patients with 6.6%, post-op IO for three patients with 5%, and pneumonia for two patients with 3.3%; and this study was conducted In Canada, similar to our study by Gor Hamplton, development of complications was observed in patients and an increase in the mortality rate for four patients with 3.5%. This study is in line with the study of Andlov Giber 2006 [14], [15], but a decrease in mortality was observed with 2.2%. This depends on several reasons, including Age in addition to the presence of comorbidities in patients and fever [16].

Also, this study revealed the existence of several factors associated with the result of surgical management of intestinal obstruction, including length of illness, in addition to the condition of the intestine and the length of stay of patients Postoperative [17].

In this study, the proportion of males was three times that of females. Patients were distributed according to gender, to 45 male patients with 75% of the population and 15 female patients to 25%. No statistical differences were found in the effect of gender on treatment outcomes in terms of mortality and morbidity. In this study, fever was less frequent, and health care after 48 hours of illness was about twice as likely.

Unfavorable outcome of those who were seeking health care before 48 hours of illness which is consistent with the study conducted in Gondar .and Chiro [18]; this may be due to late submission on arrival

6. Conclusion

We conclude from this study that it provided an advanced and insightful view into the surgical management of patients with intestinal obstruction, and it was noted that the majority of patients had favorable outcomes from the management of surgical operations to intestinal obstruction in the hospital,

The common factors associated with unfavorable management, which include (common morbidity, duration of illness, bowel condition, and length of stay in the hospital) through these factors was adopted in the design of a strategy aimed at increasing the favorable outcome of surgery and contribute to reduce the results of unfavorable management, as assessment and detection to the risk factors and correctly applying the infection prevention protocol contributes to early detection of complications.

7. Recommendation

- It is possible the intestinal obstruction may recur after surgery if the sutures of the intestine inside the patient's body are affected, as is the case with any surgery in the abdominal cavity.
- Simple cases of IO that do not require surgical intervention improve within only 2 to 5 days, and cases that require surgical intervention stay in the hospital between 7 to 8 days after the operation.

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