

Article

Evaluation Quality-Life of 120 Patients with Acute Intestinal Obstruction: A Cross-Sectional Study

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Abstract: Acute blockage of the intestine is among the most frequent surgical emergencies. Over several decades, its aetiology evolved. The aim of the study is to estimate the risk of bowel strangulation and to evaluate the health quality - life of patients after the operative. A study was conducted on 120 patients with acute intestinal obstruction who underwent surgery in different hospitals in Iraq during the period from March 2023 to September 2024. This study recorded the clinical and demographic outcomes of the patients as well as the prediction of intestinal strangulation. This findings shown patients with ages (31 - 40) years were the most prevalent in the total patients, which include 40%, males was 65%, and females were 35%, abdominal pain was the symptoms which enrolled the most rate of patients, which got 90%, adhesion was the factor which prevalence into patients with 45%, laparotomy surgery time was 4.2 ± 0.3 hours, blood loss was 850.3 ± 46.38 mL, duration of hospital was 9.24 ± 2.68 days, rate of complications was 40%, and the most factor was wound infection with 11.67%. According to our research, the most frequent reasons of obstruction in the large and small intestines, respectively, were malignant tumors and adhesions, which might have fatal or seriously life-threatening effects.

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1. Introduction

Intestinal blockage has been recognized as a separate medical issue for millennia. It is a rather common surgical problem [1]. One of the most common, important, and difficult practical problems that general surgeons handle is acute abdominal pain patients. About 20% for surgical hospitalizations in acute abdominal problems are caused by intestinal obstruction [2,3,4,5]. This is additionally among the more prevalent grounds for urgent surgery. Early identification and timely treatment can prevent irreversible ischemia and transmural necrosis in patients of all ages, including children, therefore reducing mortality and long-term morbidity [6,7,8].

Intestinal obstruction may be caused by either lumen occlusion or aberrant propulsion that impedes or delays the movement of intestinal contents through the gastrointestinal tract [9,10,11,12].

The traditional quadruple of pain, distension, vomiting, and complete constipation is used to diagnose dynamic obstruction. It may be divided into two categories: major bowel blockage and minor bowel obstruction (high or low) [13,14]. The following presenting types of mechanical blockage of the intestines are also possible: acute, chronic, acute upon chronic, as well as subacute. Acute intestinal blockage often affects the small intestine and is characterized by an abrupt onset of severe central abdominal discomfort that is colicky, distension, early vomiting, and constipation. Additional symptoms which include dehydration, hypokalemia, fever, and localized soreness [15,16,17].

Gastrointestinal drainage, fluid as well as electrolyte replenishment, and blockage alleviation are all part of the treatment for acute intestinal obstruction. The first two measures are the cornerstone of postoperative care and are always required before the surgical removal of blockage [18,19,20]. Surgical therapy is indicated for most cases for intestinal blockage but should be deferred until resuscitation has been successful, providing there is no sign of strangling and/ or indications of closed-loop obstruction. Bowel blockage is very variable in both prevalence and causes across the world, based on characteristics such as age, region, dietary habits, and ethnicity [21,22,23,24,25].

2. Patients and Methods

This cross-sectional study on 120 patients having acute intestinal blockage, ages ranging from 20 to 60, was conducted on a hospital that specializes in different hospitals in Iraq.

Participants in the trial might include any patient between the ages of 20 and 60 with an x-ray showing an air-fluid level in the abdomen greater than 3 centimetres and a clinical diagnosis for intestinal obstruction.

A comprehensive medical history, a physical examination, as well as standard and relevant investigations were carried out for every patient. Patients are diagnosed alongside acute intestinal obstruction with the use of their medical history, a physical examination, and relevant blood tests, along with radiographic procedures such as chest and abdominal x-rays, ultrasound, and, if necessary, a CT scan. Patients scoring a three or below were treated conservatively, but most patients with a score of less than 3 underwent investigation. Patients who had exploratory therapy participated in this study that was carried out based on this particular severity score.

After the data were imported into Microsoft Excel, the statistical analysis was performed using the statistical application SPSS version 21.0. The student t-test was employed to compare the mean values amongst those patients, and a chi-square test was performed to compare frequency. A p-value of less than 0.05 indicated statistical significance.

3. Results

Table 1. Participants' demographic and clinical characteristics

Characteristics	Number of participants: 120	Percentage, %
Age		

20 – 30	24	20%
31 – 40	48	40%
41 – 50	27	22.5%
51 – 60	21	17.5%
Sex		
Male	78	65%
Female	42	35%
BMI, Kg/m ²		
Underweight	21	17.5%
Normal weight	12	10.0%
Overweight	45	37.5%
Obesity	42	35.0%
Smoking status		
Yes	66	55%
No	54	45%
Comorbidities		
Yes	68	56.67%
No	52	43.33%
Hypertension	54	45.0%
Diabetes	47	39.17%
Heart failure	11	9.17%
Kidney disease	14	11.67%
Asthma	8	6.67%
Education status		
Primary	22	18.33%
Secondary	34	28.33%
University/Post – graduated	64	53.33%
Economic status, \$		

< 460	78	65.0%
460 – 732	24	20.0%
> 732	18	15.0%

Table 2. Distribution of patients with intestinal obstruction according to patients' clinical and diagnoses factors

<i>Variables</i>	<i>Participants, 120</i>	<i>Percentage, %</i>
Symptoms		
Abdominal pain	108	90.0%
Constipation	84	70.0%
Nausea and vomiting	66	55.0%
Abdominal tenderness	90	75.0%
Abdominal distension	54	45.0%
Anorexia	96	80.0%
Weight loss	102	85.0%
Guarding and rigidity	105	87.5%
Etiological factors		
Adhesion	54	45.0%
Bands	6	5.0%
Gangrenous Obstructed Hernia	3	2.50%
Intussusception	12	10.0%
Malignancy	10	8.33%
Obstructed hernia (Non gangrenous)	7	5.83%
Tuberculosis	25	20.83%
Volvulus	3	2.50%
Location		
Large intestine	42	35.0%
Small intestine	78	65.0%
Degree of obstruction		

Complete	39	32.50%
Incomplete	81	67.50%
Other factors		
Albumin (g/l)	4.3 ± 0.8	
Haemoglobin (g/l)	125.8 ± 9.0	

Table 3. Laparotomy surgical outcomes

Variables	Number of cases: 120	Percentage, %
Surgical time, hrs, mean ± Sd	4.2 ± 0.3	
General Anesthesia	120 [100%]	
No. of Bleeding cases	15	12.5%
Blood loss, mL	850.3 ± 46.38	
Duration of hospital, days	9.24 ± 2.68	
Mortality rate		
Yes	14	11.67%
No	106	88.33%

Table 4. Postoperative complications

Complications	Participants, 120	Percentage, %
<i>Wound infection</i>	14	11.67%
<i>Wound dehiscence</i>	10	8.33%
<i>Anastomotic leak</i>	7	5.83%
<i>Bleeding</i>	3	2.5%
<i>Intraabdominal collection</i>	2	1.67%
<i>Stoma complication</i>	2	1.67%
<i>Systemic complications</i>	3	2.5%
<i>Sepsis</i>	2	1.67%
<i>Shock</i>	1	0.83%

<i>Malnutrition</i>	4	3.33%
<i>Total</i>	48	40%

Table 5. Assessment quality – life of patients with intestinal obstruction after operative by questionnaire QLQ-C15-PAL

<i>Items</i>	<i>Quality–life scores, mean ± sd</i>
Physical functioning	45.36 ± 13.28
Emotional functioning	57.84 ± 8.64
Fatigue	66.78 ± 6.48
Nausea & vomiting	74.94 ± 4.66
Pain	68.52 ± 6.74
Dyspnoea	62.19 ± 8.94
Insomnia	61.95 ± 5.83
Appetite loss	71.82 ± 9.02

4. Discussion

A total of 120 patients with acute intestinal obstruction was participated in this study. Our study found that the majority of patients were in ages ranged between (31 - 40) years, which include 48 cases. As per Research conducted in the United States [26], the age group affected most were those within the age brackets of 60-70 years. Age range study in Germany [27] indicated that the most common age range affected was between 20-60 years (64.03%), followed by age brackets over 60 years (26.7%). The current findings shown males with 65% and females with 35%. In a study conducted in Spain [28], it was shown that 76% of the patients were males. This is in line with the results of other studies [29,30,31], where the male-to-female ratio was 2.1:1.9 and 1.85:1 respectively.

The most common presenting symptom, according to [32] British research, was stomach discomfort, which was followed with vomiting as well as abdominal distention. Additionally, it was shown that the primary signs were constipation (90%) and vomiting (78.6%), whereas the primary symptoms increased bowel sounds (66%), abdominal pain (65.3%), and guarding. Despite the little deviations that were observed, these results are in line with the literature [33,34]. The clinical features are constipation (86.66%) and vomiting (78%). We found that 90% of patients in the study experienced abdominal discomfort and that stiffness and guarding happened in 78.33% of instances [35]. Ninety percent of the patients had distention, and eighty-seven percent had constipation.

Distension was the most common sigmoid volvulus sign (78%) in a study of people with large bowel blockage caused by volvulus. Constipation and pain were the symptoms that were most prevalent (56%), as well as 53% of patients having cecal volvulus (87%) [36]. Additionally, in a survey of individuals with obstruction caused by big and small intestine intussusception, the most common symptoms and signs were stomach pain, nausea, vomiting, or abdominal distension, respectively [37,38]. The most common causes of intestinal obstruction, as reported in the literature, were adhesions (27%) as well as blocked

inguinal hernias (35%). The most common type of hernia was an inguinal hernia (71.0%), which was followed by an incisional hernia (22.4%). An inguinal hernia was the most common cause for strangling hernias, accounting for two cases; an incisional hernia followed. In the present study, the etiology of intestinal obstruction was found to be adhesion in 45% of cases, bands in 5% of cases, intussusception in 10% of cases, malignancy in 8.33% of cases, non-gangrenous obstructed hernia in 5.7% of cases, gangrenous obstructed hernia in 2.3% of cases, and tuberculosis in 20.83% of cases. The duration of hospitalization in this study was found to be 9.24 ± 2.68 days on average. The study carried out in the Netherlands reported an average length of stay of 9.39 days, with a range of 4 – 23 days. Patients' average hospital stay was found to be eight days. In this study, laparotomy treatment was applied in all 100% of the cases.

5. Conclusion

The study's findings showed that tiny intestinal obstructions were more common than major bowel obstructions. The most common causes of major intestine obstructions were found to be cancer and adhesions, respectively. The majority of intra-operative operations were anastomosis and intestinal resection, whereas the most common method of treating IO was laparotomy. The two most frequent post-operative complications were face dehiscence and wound infection.

REFERENCES

- [1] T. A. Tuca, E. Guell, E. Martinez-Losada, and N. Codorniu, "Malignant Bowel Obstruction in Advanced Cancer Patients: Epidemiology, Management, and Factors Influencing Spontaneous Resolution," *Cancer Manag. Res.*, vol. 4, pp. 159-169, 2012.
- [2] H. Markogiannakis, E. Messaris, D. Dardamanis, N. Pararas, D. Tzertzemelis, P. Giannopoulos, et al., "Acute Mechanical Bowel Obstruction: Clinical Presentation, Etiology, Management, and Outcome," *World J. Gastroenterol.*, vol. 13, no. 3, pp. 432-437, 2007.
- [3] G. Miller, J. Boman, I. Shrier, and P. H. Gordon, "Etiology of Small Bowel Obstruction," *Am. J. Surg.*, vol. 180, no. 1, pp. 33-36, 2000.
- [4] N. M. Foster, M. L. McGory, D. S. Zingmond, and C. Y. Ko, "Small Bowel Obstruction: A Population-Based Appraisal," *J. Am. Coll. Surg.*, vol. 203, no. 2, pp. 170-176, 2006.
- [5] S. Paydar, S. Shokrollahi, S. Jahanabadi, F. Ghaffarparand, Z. Malekmohammadi, A. Akbarzadeh, et al., "Emergency Operating Room Workload Pattern: A Single Center Experience From Southern Iran," *Bull. Emerg. Trauma*, vol. 1, no. 1, pp. 38-42, 2013.
- [6] G. Miller, J. Boman, I. Shrier, and P. H. Gordon, "Natural History of Patients With Adhesive Small Bowel Obstruction," *Br. J. Surg.*, vol. 87, no. 9, pp. 1240-1247, 2000.
- [7] G. Barmparas, B. C. Branco, B. Schnüriger, L. Lam, K. Inaba, and D. Demetriades, "The Incidence and Risk Factors of Post-Laparotomy Adhesive Small Bowel Obstruction," *J. Gastrointest. Surg.*, vol. 14, no. 10, pp. 1619-1628, 2010.
- [8] M. S. Shaikh and K. R. Dholia, "Current Spectrum of Acute Intestinal Obstruction at CMC Larkana," *Med. Channel*, vol. 16, no. 2, pp. 74-78, 2010.
- [9] R. Cirocchi, I. Abraha, E. Farinella, A. Montedori, and F. Sciannameo, "Laparoscopic Versus Open Surgery in Small Bowel Obstruction," *Cochrane Database Syst. Rev.*, vol. 17, no. 2, pp. 751-755, 2010.
- [10] T. W. Khanzada and A. Samad, "Etiological Spectrum of Dynamic Intestinal Obstruction, Department of Surgery, Isra University Hospital, Hyderabad, Pakistan," *Gomal J. Med. Sci.*, vol. 12, no. 1, pp. 35-36, 2006.
- [11] S. J. Tiwari, R. Mulmule, and V. N. Bijwe, "A Clinical Study of Acute Intestinal Obstruction in Adults Based on Etiology, Severity Indicators, and Surgical Outcome," *Int. J. Res. Med. Sci.*, vol. 5, pp. 3688-3696, 2017.

- [12] A. A. Otu, "Tropical Surgical Abdominal Emergencies: Acute Appendicitis," *Trop. Geogr. Med.*, vol. 41, no. 2, pp. 118-122, 1989.
- [13] B. T. Fevang, J. Fevang, L. Stangeland, O. Soreide, K. Svanes, and A. Viste, "Complications and Death After Surgical Treatment of Small Bowel Obstruction: A 35-Year Institutional Experience," *Ann. Surg.*, vol. 231, no. 4, pp. 529-537, 2000.
- [14] J. Kössi, P. Salminen, and M. Laato, "The Epidemiology and Treatment Patterns of Postoperative Adhesion-Induced Intestinal Obstruction in Varsinais-Suomi Hospital District," *Scand. J. Surg.*, vol. 93, no. 1, pp. 68-72, 2004.
- [15] J. A. Attard and A. R. MacLean, "Adhesive Small Bowel Obstruction: Epidemiology and Prevention," *Can. J. Surg.*, vol. 50, no. 4, pp. 291-300, 2007.
- [16] B. Kotiso and Z. Abdurahman, "Pattern of Acute Abdomen in Adult Patients in Tikur Anbessa Teaching Hospital," *East Cent. Afr. J. Surg.*, vol. 12, pp. 47-52, 2007.
- [17] D. S. Quill, H. B. Devlin, and K. R. Deham, "Surgical Operation Rates: A 12-Year Experience in Stockton on Tees," *Ann. R. Coll. Surg. Engl.*, vol. 65, no. 7, pp. 248-253, 2007.
- [18] S. Ullah, M. Khan, N. Mumtaz, and A. Naseer, "Intestinal Obstruction: A Spectrum of Causes," *JPMI*, vol. 23, pp. 188-192, 2009.
- [19] P. Mucha, Jr., "Small Intestinal Obstruction," *Surg. Clin. N. Am.*, vol. 67, no. 3, pp. 597-620, 1987.
- [20] U. Ihedioha, A. Alani, P. Modak, P. Chong, and P. J. O'Dwyer, "Hernias Are the Most Common Cause of Strangulation in Patients Presenting With Small Bowel Obstruction," *Hernia*, vol. 10, no. 4, pp. 338-340, 2006.
- [21] S. Maniselvi and S. P. Gayathre, "Etiology and Outcome of Intestinal Obstruction: An Institutional Prospective Study," *Int. Surg. J.*, vol. 5, pp. 1341-1344, 2018.
- [22] A. Osuigwe and S. Anyanwu, "Acute Intestinal Obstruction in Nnewi Nigeria: A Five-Year Review," *Niger. J. Surg. Res.*, vol. 4, no. 3, pp. 14-16, 2002.
- [23] S. Adhikari, M. Z. Hossein, A. Das, N. Mitra, and U. Ray, "Etiology and Outcome of Acute Intestinal Obstruction: A Review of 367 Patients in Eastern India," *Saudi J. Gastroenterol.*, vol. 16, no. 4, pp. 285-287, 2010.
- [24] M. Akrami, A. Ghaeini Hesarooeih, M. Barfei, V. Zangouri, and Z. Alborzi, "Clinical Characteristics of Bowel Obstruction in Southern Iran: Results of a Single Center Experience," *Bull. Emerg. Trauma*, vol. 3, no. 1, pp. 22-26, 2015.
- [25] R. T. Kuremu and G. Jumbi, "Adhesive Intestinal Obstruction," *East Afr. Med. J.*, vol. 83, no. 6, pp. 333-336, 2006.
- [26] J. Perea García, T. Turégano Fuentes, B. Quijada García, A. Trujillo, P. Cereceda, B. Díaz Zorita, et al., "Adhesive Small Bowel Obstruction: Predictive Value of Oral Contrast Administration on the Need for Surgery," *Rev. Esp. Enferm. Dig.*, vol. 96, no. 3, pp. 191-200, 2004.
- [27] K. C. Lau, B. J. Miller, D. J. Schache, and J. R. Cohen, "A Study of Large-Bowel Volvulus in Urban Australia," *Can. J. Surg.*, vol. 49, no. 3, pp. 203-207, 2006.
- [28] A. Zubaidi, F. Al-Saif, and R. Silverman, "Adult Intussusception: A Retrospective Review," *Dis. Colon Rectum*, vol. 49, no. 10, pp. 1546-1551, 2006.
- [29] T. Drapanas and J. Stewart, "Acute Sigmoid Volvulus," *Am. J. Surg.*, vol. 101, no. 1, pp. 70-77, 1961.
- [30] B. J. Moran, "Adhesion-Related Small Bowel Obstruction," *Colorectal Dis.*, vol. 9, pp. 39-44, 2007.
- [31] X. Z. Chen, T. Wei, K. Jiang, K. Yang, B. Zhang, Z. X. Chen, et al., "Etiological Factors and Mortality of Acute Intestinal Obstruction: A Review of 705 Cases," *Zhong Xi Yi Jie He Xue Bao*, vol. 6, pp. 1010, 2008.
- [32] A. Y. Mohamed, A. Al-Ghaithi, J. M. Langevin, and A. H. Nassar, "Causes and Management of Intestinal Obstruction in a Saudi Arabian Hospital," *J. R. Coll. Surg. Edinb.*, vol. 42, pp. 21-23, 1997.
- [33] B. J. Moran, "Adhesion-Related Small Bowel Obstruction," *Colorectal Dis.*, vol. 9, pp. 39-44, 2007.
- [34] J. C. Pal, S. R. De, and D. Das, "The Pattern of Acute Intestinal Obstruction in a Peripheral District in Eastern India," *Int. Surg.*, vol. 67, pp. 41-43, 1982.
- [35] A. Wysocki and J. Krzywoń, "Causes of Intestinal Obstruction," *Przegl. Lek.*, vol. 58, no. 6, pp. 507-508, 2001.
- [36] B. Kirshtein, A. Roy-Shapira, L. Lantsberg, E. Avinoach, and S. Mizrahi, "Laparoscopic Management of Acute Small Bowel Obstruction," *Surg. Endosc.*, vol. 19, no. 4, pp. 464-467, 2005.
- [37] O. O. Lawal, O. S. Olayinka, and J. O. Bankole, "Spectrum of Causes of Intestinal Obstruction in Adult Nigerian Patients," *S. Afr. J. Surg.*, vol. 43, no. 2, pp. 34-36, 2005.

- [38] Y. Yilma, "Management Outcome of Small Intestinal Obstruction in Mizan Aman General Hospital, Ethiopia," *J. Clin. Exp. Pathol.*, vol. 8, pp. 359, 2018.