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## Acute Intestinal Obstruction in Misurata Central Hospital

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### Abstract:

**Aim:** To identify and analyze the clinical presentation, management and outcome of patients with acute bowel obstruction along with the etiology of obstruction and the incidence and causes of bowel ischemia, and resection.

**Methods:** This is a retrospective observational study of all adult patients admitted with intestinal obstruction to the surgical department in Misurata central hospital in the period of one year, between March 2007 and February 2008.

**Results:** Of the 54 consecutive patients included in the study, the clinical presentations were abdominal pain, abdominal distension, vomiting, constipation and obstipation. Adhesions (50%), obstructed hernias (37%), and large bowel cancer (9%) were the most frequent causes of obstruction. Bowel resection was performed in 15 cases, 5 of them to resect large bowel cancer and 10 of them because of bowel gangrene due to strangulated hernias, adhesions, volvulus and mesenteric embolism.

**Conclusion:** Close and careful clinical evaluation along with proper investigations is essential for decision of management of patients with acute bowel obstruction to avoid serious complications.

**Key words:** bowel obstruction; constipation; adhesion; bowel resection; obstructed hernia.

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### Introduction:

Acute mechanical bowel obstruction is a common surgical emergency that is frequently encountered in abdominal surgery.<sup>1,2</sup> It constitutes a major cause of morbidity and financial expenditure in hospitals around the world<sup>3</sup> and a common cause of admissions to emergency surgical departments.<sup>4,5</sup> Intestinal obstruction belongs to highly severe conditions, requiring a quick and correct diagnosis as well as immediate, rational and effective therapy.<sup>6</sup>

This common surgical emergency carries a reasonable prognosis if recognized and treated promptly. However, in cases that present late, or go undiagnosed, or are resuscitated inadequately before surgery, there can be high mortality and morbidity.

Surgeons are concerned about bowel obstruction because strangulation, causing bowel ischemia, necrosis and perforation might be involved, and it is often difficult to distinguish simple obstruction from strangulation. Although close and careful clinical evaluation, in conjunction with laboratory and radiologic studies, is essential for the decision of proper management of patients with acute bowel obstruction,<sup>2</sup> a preoperative diagnosis of bowel strangulation

cannot be made or excluded reliably by any known parameter, combinations of parameters, or by experienced clinical judgment.<sup>7-9</sup> Immediate and correct diagnosis of this condition and its etiology is essential, and appropriate treatment is important.

We therefore, conducted this retrospective study to identify and analyze the clinical presentation, the etiology as well as the management and the outcome of these patients.

### Materials and Methods:

This is a retrospective observational study of all adult (over 14 years old) patients admitted to the Department of Surgery, Misurata central Hospital, with a diagnosis of acute bowel obstruction between March 2007 and February 2008.

Patients with paralytic ileus were excluded from the study.

All adult patients with clinical and radiological evidence of acute bowel obstruction were included in the study.

Clinical data, management, operative findings, etiology of obstruction, complications and the final outcome of the patients were collected from the patients' files.

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Intraoperative findings were also recorded with great emphasis on the etiology of obstruction as well as the incidence and causes of bowel ischemia and gangrene.

#### Results:

During the one year study period, 54 consecutive adult patients with acute bowel obstruction were admitted and composed our study group. More than 70% of patients aged above 40 years as shown in table (1).

There was no significant difference in sex distribution (table 2). Regarding clinical presentation, abdominal pain represented the most common symptom 51 (94.4%) whereas abdominal distension in 37 patients (68.5%), vomiting in 34 patients (63%) and constipation in 32 patients (59%), Table (3).

In terms of history of previous operations, 24 patients representing (44%) of the group had no history of previous surgery, while 30 patients (56%) had undergone previous surgical procedures, Table (4).

In the study group, the cause of obstruction was adhesions in 27 patients (50%), obstructed hernia in 20 patients (37%) and bowel cancer in 5 patients (9%), Table (5).

Moreover, all patients with adhesive obstruction had previous abdominal operations.

Regarding the management, we found that 24 patients were successfully treated conservatively (44%) most of them were cases of post operative adhesions, and 30 patients were operated (56%), the reasons for operation were either no response to conservative treatment or the cause of obstruction mandated the surgical treatment, as strangulated hernia, cancer, Table (6).

Large bowel cancer was found in 5 patients (9%) in sigmoid, descending and transverse colon.

In the operated group (30 patients), bowel resection was performed in 15 cases, cancer was the cause in 5 patients, and in 10 cases, and bowel gangrene in 10 cases, Tale (7).<sup>7</sup>

#### Discussion:

Acute bowel obstruction remains a common surgical emergency,<sup>2</sup> which is a frequent cause of admission to hospital emergency surgical departments.<sup>4,5</sup>

Regarding clinical presentation of our patients, abdominal pain (94.4%), abdominal distension (68.5%), vomiting (63%), constipation (59%), obstipation (13%) were the most common symptoms.

Our results, (which are mainly compared to Markogiannakis H and others study, carried in Hippokration Hosp, Athens medical school) even though some differences are noticed, are in accordance with the literature.<sup>1,10,11</sup> Particularly, Cheadle et al reported abdominal pain (92%), vomiting (82%), abdominal tenderness (64%), and distention (59%) as the most frequent symptoms and signs,<sup>12</sup> whereas abdominal distension, bilious vomiting, absolute constipation and abdominal pain were the main signs and symptoms in another series.<sup>13</sup> Perea et al prospectively studied 100 patients with adhesive small bowel obstruction and found that the presenting symptoms were vomiting (77%), colicky abdominal pain (68%), absence of passage of flatus and/or feces (52%), and constant pain (12%), whereas abdominal distension constituted the most frequent clinical sign with a prevalence of 56%.<sup>10</sup>

Adhesions, incarcerated hernias, and large bowel cancer constitute the most frequent causes of obstruction.<sup>3,5,14</sup> This finding was also noticed in our study.

Several studies postulate that adhesions are responsible for 32%-74% of bowel obstruction and are the leading cause of small intestinal obstruction representing 45%-80% of it.<sup>15,16</sup> The vast majority (65%-90%) of the patients with adhesive obstruction have undergone previous abdominal operations.<sup>12</sup> In the present study, this was observed in all patients.

As for the types of previous operations in our study patients, appendectomies, gynecological operations, cholecystectomies, were more prevalent. This is also in accordance with the literature.<sup>17,18</sup>

Even though the appropriate management of adhesive obstruction is still controversial, a substantial share of these patients, ranging from 35% to 75% in several studies, can safely and effectively be treated with non operative management as it was also shown in our patients.<sup>3,4</sup> The increasing role of adhesions as a cause of acute intestinal obstruction demands greater need for routine preventive measures against adhesion formation.<sup>15</sup>

Moreover, obstructed hernias were the second most common etiology of obstruction as well as the predominant cause of bowel ischemia.

It should also be emphasized that bowel ischemia is reversible in one case with obstruction due to incarcerated hernias justifying immediate surgery in these patients. Since abdominal hernias continue to account for 8%-25% of all cases of intestinal

obstruction,<sup>16,19</sup> while in a few series represent the most common cause of intestinal obstruction accounting for 30%-55%,<sup>20,21</sup> and, moreover, they still remain the most common cause of strangulation,<sup>22,23</sup> surgeons should continue their aggressive attitude towards elective repair of all abdominal hernias as well as towards immediate operative intervention in patients with acute bowel obstruction secondary to obstructed hernias.

As it was also observed in our study, large bowel cancer, particularly sigmoid cancer, is the most common etiology of obstruction in patients with large intestinal obstruction with a prevalence of 40%-90%<sup>15,24</sup> all of such patients in our study were operatively treated.

Other less common causes of obstruction reported in the literature are Crohn's disease<sup>3,22</sup> and gallstones,<sup>14</sup> accounting for 3%-7% and 2% of small bowel obstruction cases, respectively, and bowel volvulus<sup>25</sup> and intussusceptions,<sup>26</sup> accounting for 4%-15% and 4%-8% of total obstruction cases, respectively. In our series, the prevalence of Crohn's disease and bowel volvulus was much lower, whereas no case of obstruction due to gallstone or intussusception was observed in adult.

An important share of our patients was success of conservative treatment. This was more prevalent regarding adhesive small bowel obstruction. This has also been noticed in other studies.<sup>13,27</sup>

Much attention should be paid to the treatment of these patients since the incidence of bowel ischemia, necrosis, and perforation is significantly high. Strangulation rate in the literature ranges from 7% to 42%.<sup>8,17</sup> In addition, Kossi et al reported an incidence of ischemia of 20%, of necrosis of 8%, and of perforation of 2%.<sup>28</sup>

In regard to the risk of strangulation in the present study, a significantly much higher risk was noticed in operated patients, as about one third of them required resection of bowel due to bowel gangrene.

In our study, postoperative complication rate was insignificant and no mortality rate recorded.

In the literature, complication rate ranges from 6% to 47%<sup>12,29</sup> whereas mortality ranges from 2% to 19%.<sup>16,22</sup>

In general, appropriate treatment of acute bowel obstruction as well as timing of surgery for patients selected to undergo operative intervention still remain controversial.<sup>3,27</sup> Management of this condition requires careful assessment and awareness while the appropriate treatment needs to be tailored to the individual situation.<sup>24</sup>

Furthermore, no specific factors that may predict success of conservative or surgical management have been identified.<sup>27</sup> Although modern surgical management continues to focus appropriately on avoiding operative delay whenever surgery is indicated, not every patient is always best served by immediate operation. As it was also proved in the present study, certain entities, such as bowel obstruction secondary to obstructed abdominal wall hernia, and patients with clinical signs and symptoms suggestive of strangulation do require prompt operative intervention.<sup>22</sup>

However, other conditions such as postoperative adhesions, particularly in patients with numerous previous abdominal procedures or concomitant medical problems, often justifiably benefit from a trial of non operative management.<sup>17,22</sup>

**Conclusion:**

Close and careful clinical evaluation, in conjunction with laboratory and radiologic studies, is essential for the decision of proper management of patients with acute bowel obstruction; if any uncertainty exists, prompt operative intervention is indicated. It should be emphasized, though, that great caution should be taken for the management of these patients since studies have shown that preoperative diagnosis of bowel strangulation cannot be made or excluded reliably by any known clinical, laboratory, or radiologic parameter, combinations of parameters, or by experienced clinical judgment.

**Table 1: Shows the age distribution of the study group**

Age group	<20 years	20-40 years	40-60 years	>60 years	Total
Number of cases	6	10	18	20	54
percentage	11.1%	18.5%	33.4%	37%	%100

**Table 2: Shows sex distribution among the study group**

Sex	M	F	Total
No. of cases	26	28	54
Percentage	48.2%	51.8%	100%

**Table 3: Shows the common clinical presentation**

Signs & symptoms	Abdominal pain	Abdominal distention	vomiting	constipation	Obstipation
No of patients	51	37	34	32	7
Percentage	94.4%	68.5%	63%	59%	13%

**Table 4: Shows the history of surgery in the study group**

	H/O surgery	No H/O surgery	Total
No. of cases	30	24	54
Percentage	56%	44%	100%

**Table 5: Shows the causes of obstruction in the study group**

Cause	adhesion	hernia	cancer	volvulus	Mesenteric embolism	Total
No. of cases	27	20	5	1	1	54
percentage	50%	37%	9%	2%	2%	100%

**Table 6: Shows the out come of patients.**

Outcome	operative	conservative
No. of patients	30	24
percentage	56%	44%

**Table 7: Shows the causes of bowel resection**

Cause of resection	Carcinoma colon	Strangulated hernia	adhesions	volvulus	Mesenteric embolism
No. of cases	5	5	3	1	1

**Total no. of cases underwent resection of bowel was 15.**

**References:**

1. Markogiannakis H , et al, acute mechanical bowel obstruction :clinical presentation, etiology, management & out come, World J Gastroenterol, Jan. 21; 2007;13(3) :432-7>
2. Mucha P Jr. Small intestinal obstruction. Surg Clin North Am 1987; 67: 597-620>
3. Miller G, Boman J, Shrier I, Gordon PH. Etiology of small bowel obstruction. Am J Surg 2000; 180: 33-36.
4. Miller G, Boman J, Shrier I, Gordon PH. Natural history of patients with adhesive small bowel obstruction. Br J Surg 2000; 87: 1240-1247.
5. Ihedioha U, Alani A, Modak P, Chong P, O'dwyer PJ. Hernias are the most common cause of strangulation in patients presenting with small bowel obstruction. Hernia 2006; 10: 338-340.
6. Dite P, Lata J, Novotny I. Intestinal obstruction and perforation--the role of the gastroenterologist. Dig Dis 2003; 21: 63-67.
7. Richards WO, Williams LF Jr. Obstruction of the large and small intestine. Surg Clin North Am 1988; 68: 355-376.
8. Sarr MG, Bulkley GB, Zuidema GD. Preoperative recognition of intestinal strangulation obstruction. Prospective evaluation of diagnostic capability. Am J Surg 1983; 145: 176-182.
9. Renzulli P, Krahenbuhl L, Sadowski C, al-Adili F, Maurer CA, Buchler MW. Modern diagnostic strategy in ileus. Zentralbl Chir 1998; 123: 1334-1339.
10. Perea Garcia J, Turegano Fuentes T, Quijada Garcia B, et al. Adhesive small bowel obstruction: predictive value of oral

- contrast administration on the need for surgery. *Rev Esp Enferm Dig* 2004; 96: 191-200.
11. Lau KC, Miller BJ, Schache DJ, Cohen JR. A study of large-bowel volvulus in urban Australia. *Can J Surg* 2006; 49: 203-207.
  12. Cheadle WG, Garr EE, Richardson JD. The importance of early diagnosis of small bowel obstruction. *Am Surg* 1988; 54: 565-569.
  13. Kuremu RT, Jumbi G. Adhesive intestinal obstruction. *East Afr Med J* 2006; 83: 333-336.
  14. Wysocki A, Krzywon J. Causes of intestinal obstruction. *Przegl Lek* 2001; 58: 507-508.
  15. Lawal OO, Olayinka OS, Bankole JO. Spectrum of causes of intestinal obstruction in adult Nigerian patients. *S Afr J Surg* 2005; 43: 34-36.
  16. Mohamed AY, al-Ghaithi A, Langevin JM, Nassar AH. Causes and management of intestinal obstruction in a Saudi Arabian hospital. *J R Coll Surg Edinb* 1997; 42: 21-23.
  17. Cox MR, Gunn IF, Eastman MC, Hunt RF, Heinz AW. The operative aetiology and types of adhesions causing small bowel obstruction. *Aust N Z J Surg* 1993; 63: 848-852.
  18. Stricker B, Blanco J, Fox HE. The gynecologic contribution to intestinal obstruction in females. *J Am Coll Surg* 1994; 178: 617-620.
  19. Roscher R, Frank R, Baumann A, Beger HG. Results of surgical treatment of mechanical ileus of the small intestine. *Chirurg* 1991; 62: 614-619 PubMed.
  20. Chiedozi LC, Aboh IO, Piserchia NE. Mechanical bowel obstruction. Review of 316 cases in Benin City. *Am J Surg* 1980; 139: 389-393.
  21. Tamijmarane A, Chandra S, Smile SR. Clinical aspects of adhesive intestinal obstruction. *Trop Gastroenterol* 2000; 21: 141-143.
  22. Bizer LS, Liebling RW, Delany HM, Gliedman ML. Small bowel obstruction: the role of nonoperative treatment in simple intestinal obstruction and predictive criteria for strangulation obstruction. *Surgery* 1981; 89: 407-413.
  23. Akcakaya A, Alimoglu O, Hevenk T, Bas G, Sahin M. Mechanical intestinal obstruction caused by abdominal wall hernias. *Ulus Travma Derg* 2000; 6: 260-265.
  24. Lopez-Kostner F, Hool GR, Lavery IC. Management and causes of acute large-bowel obstruction. *Surg Clin North Am* 1997; 77: 1265-1290 PubMed.
  25. Gurleyik E, Gurleyik G. Small bowel volvulus: a common cause of mechanical intestinal obstruction in our region. *Eur J Surg* 1998; 164: 51-55.
  26. Kirshtein B, Roy-Shapira A, Lantsberg L, Avinoach E, Mizrahi S. Laparoscopic management of acute small bowel obstruction. *Surg Endosc* 2005; 19: 464-467.
  27. Williams SB, Greenspon J, Young HA, Orkin BA. Small bowel obstruction: conservative vs. surgical management. *Dis Colon Rectum* 2005; 48: 1140-1146.
  28. Kossi J, Salminen P, Laato M. The epidemiology and treatment patterns of postoperative adhesion induced intestinal obstruction in Varsinais-Suomi Hospital District. *Scand J Surg* 2004; 93: 68-72.
  29. Uludag M, Akgun I, Yetkin G, Kebudi A, Isgor A, Sener A. Factors affecting morbidity and mortality in mechanical intestinal obstruction. *Ulus Travma Derg* 2004; 10: 177-184.