ORIGINAL ARTICLE

OUTCOME OF CONSERVATIVE MANAGEMENT OF ADHESIVE SMALL BOWEL OBSTRUCTION

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ABSTRACT

Background: Adhesive intestinal obstruction is a common surgical emergency. Controversies exist in its management. This study was designed to assess the outcome of conservative treatment of adhesive small bowel obstruction. **Methods:** This descriptive study was carried out at Saidu Teaching Hospital Swat from July 2007 to June 2010**.** Patients who presented to Department of Surgery with adhesive small bowl obstruction were included in the study. Initially all patients were managed by intravenous hydration and nasogastric tube decompression. Surgical intervention was determined on the presence of one or more toxic signs e.g. fever, leukocytosis, intractable pain, and peritonitis or if obstruction did not resolve spontaneously in four days. Patients were followed-up for six months. **Results:** Seventy-three adult patients with adhesive small bowel obstruction were studied. Male to female ratio was 1:1 and age range 16-68 years. Out of these 52(71.23%) patients responded to conservative treatment and 21(28.76%) required surgical intervention. Of these 21 patients, 14(66.66%) needed adhesion lysis only while 6(28.5%) required gut resection. Median hospital stay for conservative group was 3.69 days (range 3-8 days) while in operative group 8.76 days (range 7-15 days). **Conclusion:** Most patients with adhesive small bowel obstruction will benefit from conservative treatment as the resolution rate is high (71%).

KEY WORDS: Small bowl obstruction, Adhesive obstruction, Conservative treatment.

INTRODUCTION

Intestinal obstruction is a global problem and one of the common emergencies presenting to surgeons.[1] Various causes of intestinal obstruction are adhesions, band obstruction, strangulated hernia, inflammatory stricture, neoplasm and worms. The frequency of various causes varies from country to country. Adhesions are the commonest cause of intestinal obstruction in the developed countries and its frequency is increasing in the developing world.[2-4]

Adhesive small bowel obstruction (SBO) is usually caused by post-operative adhesions which develop in about 95% of adult patients after abdominal surgery.[5] Different factor such as powder from surgical gloves and tissue reaction have been reported to cause fibrous adhesions.[6,7]

The management of post-operative adhesive small bowel obstruction has considerable controversies. The conservative treatment i.e. receiving intravenous hydration and keeping the patients nil orally, is successful in73% to 90% of cases[8] but because of significant number of serious complications such as strangulation, one third of patients require surgical intervention. Strangulation can develop if surgery is delayed for more than 48 hours.[9,10]

This study was conducted to know the outcome of conservative treatment in adhesive intestinal obstruction in our set up.

MATERIAL AND METHODS

The present study was conducted in the Surgical Department of Saidu Teaching Hospital, Swat, from July 2007 to June 2010.

During this period 178 patients were admitted with symptoms and signs of intestinal obstruction. Out of these, 73 patients had undergone abdominal surgery in the past. Patients included in this study were those who previously had intra-abdominal surgery of more than four weeks duration and had clinical symptoms and signs compatible with small bowel obstruction.

Plain abdominal x-ray in erect posture, showing dilated loops of small intestine and air fluid levels were taken as indicative of intestinal obstruction.

Patients SBO in whom the cause of obstruction was other than adhesions like inflammatory bowel disease, external hernia or malignancy were excluded from the study.

At the time of admission a detailed history including age, sex, type of previous abdominal surgery as well as findings of clinical examination were recorded. Blood samples were taken for

complete blood picture, blood grouping, blood sugar, serum electrolytes, and creatinine. A plain abdominal radiograph in erect posture was taken.

Initially all patients were managed by intravenous hydration and nasogastric tube decompression. All patients were examined daily by the attending surgeon. Surgical intervention was determined by surgical team based on the presence of one or more toxic signs e.g. fever, leukocytosis, intractable pain, and peritonitis or if obstruction did not resolve spontaneously in 4 days.

RESULTS

A total of 73 adult patients with SBO met the inclusion criteria. Among these patients male to female ratio was 1:1 and the age range 16 to 68 years. Most of the patients had abdominal pain distention, and constipation. All these patients had history of previous abdominal surgery.

Out of these 73 patients the most common cause of previous abdominal surgery was laparotomy for peritonitis and intestinal obstruction, gynecological surgery and laparotomy for trauma.

Out these 73 patients, 52 patients responded to the conservative treatment and 21 required surgical intervention.

Among those whose obstruction was relieved with conservative treatment 42 patients responded in 48 hours, 8 patients in 72 hours while in 2 patients obstruction was relieved on the 4th day of admission.

Surgical intervention was needed in 21 patients, out of these, 14 needed adhesion lyses only while gut resection was performed in 6 patients. In 1 patient there was band and a single perforation at the site of band attachment. Band was resected and perforation closed. (Table 1)

The median hospital stay for conservative group was 3.69 days (range 3 to 8 days) while in operative group it was 8.76 (7 to 15 days).

Out of these 21 operative patients 1 patient developed wound infection while 1 developed intra-abdominal collection that was drained.

DISCUSSION

Post-operative adhesions are continuous threat to the surgeons throughout the world and are the leading cause of intestinal obstruction in the western world. Fuzun et al reported that adhesions are responsible for 44% of intestinal obstruction in Turkey.[11] Adhesive intestinal obstruction is also a significant cause of morbidity and hospital work load in developing countries. Khalid et al reported adhesions to be the second common cause of mechanical intestinal obstruction in patients presenting to a tertiary care hospital in Pakistan, while Rehman et al also reported adhesions as the cause of 18% of mechanical small bowel obstruction.[12,13]

Treatment of intestinal obstruction has gone through several evolutions and controversies exist about the management of adhesive intestinal obstruction. In our study the conservative treatment was successful in 71.24% and operative intervention was needed in 28.76%. Similar success rate has been reported in other studies.[10,13] In one series by Cox et al 75.5% patients responded to conservative treatment while 14.5% had features suggestive of strangulation and underwent immediate laparotomy.[14]

In our study in patients who needed surgical intervention simple obstruction was found in 57.14% while strangulation with viable gut was found in 9.52% and non-viable gut was found in 28.57% patients. Similarly strangulation rate in the

Table 1: Nature of abdominal surgeries as a cause of adhesive intestinal obstruction and response to conservative treatment.

		Conservative management	Surgical intervention
Gender	Male	28 (75.6%)	9 (24.36%)
	Female	24 (66.6%)	12 (33.3%)
Nature of previous operation			
Laparotomy for peritonitis & intestinal obstruction		13 (72.2%)	5 (27.72%)
Upper abdominal		12 (80%)	3 (20%)
Gynecological /Obstetrics		9 (69.2%)	4 (30.76%)
Lower abdominal and colorectal		7 (63.63%)	4 (36.36%)
Laparotomy for trauma		6 (66.66%)	3 (33.33)
Abdominal wall		5 (71.42%)	2 (3.50)

study by Wilson et al was found to be 20% although viability of the intestine was not reported.[15] Kossi et al reported strangulation rate as 20% and necrotic bowel 10%. In this study bowel resection rate was 28.57%, it is similar to that reported by Chen et al.[16]

The frequency and anatomical site of previous surgery in our study was in contrast with other studies. Kossi et al and Wilson et al reported colorectal and upper abdominal surgery to be the most prevalent previous operation while in our study laparotomy for peritonitis and gynecological surgery was the common index operation.[13,15] This may be because of prevalence of tuberculosis and enteric fever in the developing countries as well as delay in the treatment seeking behavior of the developing countries.

In our study female gender and previous abdominal surgery increases the risk of surgical treatment of adhesions induced intestinal obstruction. In this study 33% out of 36 female patients needed surgical intervention as compare to 24.32% out of 37 male patients. This was in accordance with other reports. In the study by Miller et al 42% women were treated operatively.[17] The higher rate of operation in women is probably a consequence of gynecological operation that has high rates of developing complicated intestinal obstruction.[17]

The median hospital stay for conservative group was 3.69 days while in those treated operatively it was 8.76 days. It is similar to that reported by Fevang et al that is 3 days for those treated conservatively and 9 days for those treated operatively.[18]

CONCLUSION

Most patients with adhesive small bowel obstruction will benefit from conservative treatment as the resolution rate is high (71%).

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