

Primary Operative Management for Low Adhesive Bowel Obstruction.

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Background: Our patients that required surgery for adhesive small bowel obstruction (ASBO) were noticed to have a peculiar association. This link was the type of surgery they had originally; operations in the pelvis or those in which the scars were below the umbilicus. These patients did not improve on conservative management. This study was then undertaken to investigate this trend and to recommend primary surgery for these group of patients, terming them as low adhesive small bowel obstruction for the purpose of the study.

Methods: This is a retrospective descriptive study from April 2003 to February 2010 on patients who were admitted on the service of the gastrointestinal surgery unit of the University College Hospital Ibadan, Nigeria, with a diagnosis of ASBO and had surgery for relief of the condition. Demographic indices like age, sex and type of previous operation were taken into account.

Results: There were 4 male and 17 female patients, a Male to Female ratio of 1: 4. Their Ages ranged from 23-60 years. The global mean age was 40 years. The mean age for males was 31.5 years while for the female patients it was 42 years.

Previous surgical operations showed that gynecological operations were in the majority (62%), followed by appendicectomy (24%) and colorectal surgery made up the rest (14%).

Conclusion and Recommendations: We propose primary surgical treatment for low ASBO especially those from gynecological operations and appendicectomy. Conservative management should be reserved as the initial treatment of non-low-level ASBO until other features prove otherwise.

Introduction

All over the world patients who develop adhesive small bowel obstruction (ASBO) pose a great challenge to their care-givers. This stems from the fact that there is no definite 'cast-iron' mode of management; patients are managed conservatively until other features indicate a surgical option. In the developing world where financial, material and personnel resources are at a premium, the sooner one determines which patients with ASBO require surgery, the better. Why allow a patient to exhaust his meager finances on bed fees, intravenous fluids and other hospital consumables for periods ranging from 5 to 10 days before deciding that surgery after all is indicated? Observation has shown that patients who have had previous surgery for lesions below the umbilicus seem to require surgery to relieve ASBO when developed. This group of patients, for the purpose of this study, will be described as those with 'low adhesive obstruction'. This study was aimed at reviewing the current management of ASBO with a view to providing reasonable support for early surgery in patients with low ASBO in a tropical third world country.

Patients and Methods

This is a retrospective descriptive study from April 2003 to February 2010 on patients who were admitted on the service of the gastrointestinal surgery unit of the University College Hospital Ibadan, Nigeria, with a diagnosis of ASBO and had surgery for relief of the condition. Demographic indices like age, sex and type of previous operation were taken into account.

Results

Fifty-two patients were admitted during that period with a diagnosis of adhesive bowel obstruction and 21 patients out of this number required surgery. There were 4 male and 17 female patients giving a Male: female ratio of roughly 1: 4. Their Ages ranged from 23-60 years. The global mean age was 40 years. The mean age for males was 31.5 years while for the female patients it was 42 years.

Table 1.

Serial no	Age/Sex	Previous operation	Interval before obstruction	Duration of conservative management	Operation performed for ASBO
1	38/M	Appendicectomy	3 years	4 days	Adhesiolysis
2	50/F	CS	20 years	12 days	Adhesiolysis, ileal resection.
3	33/F	Salpingectomy	3 years	9 days	Right hemicolectomy
4	36/F	Myomectomy	9 months	1 day	Adhesiolysis, Meckels diverticulectomy
5	28/M	Appendicectomy	1 week	2 days	Adhesiolysis, ileal resection.
6	36/F	Myomectomy	2 years	9 days	Adhesiolysis, ileal resection.
7	23/F	Salpingectomy	4 months	7 days	Adhesiolysis, ileal resection
8	43/F	APER	6 weeks	10 days	Adhesiolysis, drainage of pelvic abscess.
9	66/F	Colectomy	1 year	5 days	Adhesiolysis, ileal resection.
10	33/F	CS	3 years	3 days	Adhesiolysis, jejunal resection.
11	36/F	TOP	2 weeks	8 hours	Right hemicolectomy
12	40/F	Myomectomy	8 weeks	10 days	Adhesiolysis, ileal resection.
13	30/M	Appendicectomy	6 months	8 days	Adhesiolysis, ileal resection.
14	56/F	Hysterectomy	6 days	4 days	Adhesiolysis, ileal resection.
15	44/F	Myomectomy	10 days	3 days	Adhesiolysis, ileal resection.
16	24/F	Appendicectomy	1 week	2 days	Adhesiolysis
17	54/F	Hysterectomy	1 month	10 days	Adhesiolysis, ileal resection. (Died of septic shock 2 days after surgery).
18	30/F	Myomectomy	4 months	1 week	Adhesiolysis
19	50/F	APER	3 months	1 week	Right hemicolectomy.
20	30/M	Appendicectomy	1 year	5 days	Adhesiolysis
21	60/F	Hysterectomy	3 years	5 days	Adhesiolysis

KEY: APER – Abdominoperineal excision of the rectum

CS – Caesarean section.

TOP – Termination of pregnancy

Previous surgical operations showed that gynecological operations were in the majority (62%), followed by appendicectomy (24%) and colorectal surgery made up the rest (14%).

A further look at the individual gynecological cases showed myomectomy (5), hysterectomy (3), Caesarean section (2), salpingectomy (2) and one case of uterine perforation from criminal termination of pregnancy. The time interval between the date of previous operation to the development of ASBO ranged from 6 days to 20 years. The duration of conservative management

before being abandoned for surgery ranged from 1-10 days. There was one death from septic shock in a 53-year old female.

Discussion

Low level adhesive obstruction, for practical purposes and for this study, is defined as that in which the adherent scar occurs below the level of the umbilicus. Such scars may include appendectomy scars, pfannenstiell scars, midline infra-umbilical scars. It also includes ASBO that may occur after pelvic operations such as distal colectomy, abdominoperineal excision of the rectum, myomectomy and/or hysterectomy

We have come to observe that patients with low level ASBO do not fare well on the usual 'drip and suck' regime of intravenous fluid administration, nasogastric-tube drainage, correction of electrolyte imbalance, prophylactic antibiotic treatment and regular monitoring of vital signs (pulse, temperature, blood pressure and respiratory rate). The decompression of the dilated distal jejunum and ileum is really not achievable with a tube nestling in the stomach. Thus the persistence of kinked, twisted or compressed gut is maintained by a relentless dilatation of the gut immediately proximal to the site of obstruction. Other considerations about conservative management revolve around the length of time conservative management should be allowed. Is it okay to continue indefinitely as long as features of strangulation are absent? It is known that not all patients manifest these features early until they develop multiple organ failure because clinical parameters like continuous abdominal pain, fever, leucocytosis have not proved to be sensitive, specific and predictive for bowel strangulation^{1,2,3}. Can we afford to let that happen? In the developing world, getting a patient to theatre for an emergency may take a minimum of 4 hours.

Studies have shown that in one center the patients who had conservative management were observed for a range of 2-12 days and most of those who had resolution of their symptoms did that within 1 week while those who eventually required surgery had their periods of conservative management ranging from 1-14 days³. In order to reduce this period of uncertainty several authors have suggested the use of Gastrografin to predict which patients will resolve on conservative management; the consideration being that after instillation of the contrast via nasogastric tube, those patients in whom the contrast appeared in the large bowel after 24 hours are adjudged to have partial obstruction and expected to resolve but if contrast failed to reach the large bowel within this same period, complete obstruction was the case and laparotomy indicated^{4,5,6}. The drawback for the applicability of this in a third world country is the fact that serial x-rays have to be taken (about 4 within the 24 hours) and if a patient is lucky that there are films in the radiology department, electricity supply is stable ensuring that lifts are working and the queue in the X-ray department is not too long then it may be worthwhile to do this test.

There are some operations that have been shown to have a predisposition for the development of ASBO and several authors are agreed that the top four in order of magnitude of presentation include colorectal surgery, gynecological operations, herniorrhaphy and appendectomy^{7,8}. These are the types of operations we would include as being low level ASBO and if we look at the patients who have required operative intervention in this study it would seem that our order of magnitude of presentation starts with gynecological operations, then appendectomy and lastly with colorectal operations. The mean age of the female patients in this study, at 42 years, supports the period in their lives when gynecological ailments require operations like myomectomy and hysterectomy while the male patients had appendectomy which is mainly a condition of young adulthood. Indeed, female gender and previous obstetrics or gynecological operations have been cited as indicators for surgery in ASBO and women particularly are said to be at risk of strangulating while on admission for ASBO because of delayed laparotomies^{9,10,11}. Many of these female patients had normal abdominal radiographs in the presence of bowel strangulation¹⁰ thus strengthening the need for recommending surgery as first-line management in such patients.

A study done in Turkey showed that 62.5% (ten out of sixteen) post-appendectomy ASBO required surgery to relieve the obstruction and 50% of those from gastroduodenal operations and colorectal operations respectively required surgery¹². This study shows a 67% resection rate in the operations performed for the ASBO (Table 1) and the reasons include the presence of already gangrenous bowel, doubtful integrity and viability of the segment of gut after adhesiolysis (because of multiple serosal tears) and lastly, persistent constriction of a segment after the obstructing fibrous band has been removed. The study also buttresses the unpredictability of the occurrence of ASBO from the original operation^{3,8}, with our series recording a range between 6 days to 20 years. The risk of recurrence of obstruction has also been shown to be significantly lower in patients who have surgical relief of ASBO than those conservatively managed and the latter group was re-admitted more rapidly than those treated surgically¹³.

A study from East Africa regarding the challenges faced in managing ASBO patients concluded by stating that inadequate intravenous fluid management and delayed surgical intervention were the major problems faced in their center¹⁴. We submit that for some cases, it may seem like over-treating the condition; however we feel that such operations are not wasted. The advantages, we believe, outweigh the disadvantages; the hospital stay is shorter, the patients' personal expenses are not stretched and the re-admission rate is reduced. One may draw an analogy using emergency appendectomy for suspected acute appendicitis where a reasonable negative appendectomy rate is better than the consequences of a ruptured appendix.

Conclusion

We propose primary surgical treatment for low ASBO with conservative management reserved as the initial treatment of non-low-level ASBO until other features prove otherwise.

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