

# MANAGEMENT OF ADHESIVE SMALL BOWEL OBSTRUCTION USING GASTROGRAFIN

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**Abstract:** *The present study involved 100 patients experiencing little bowel impediment with a background marked by past stomach medical procedure. Patients with supported deterrent who grew clinically or radiologically in the initial 24 hours kept on accepting traditionalist treatment. Conservative therapy was declared to fail in patients that reported no radiological or clinical improvement within 24 hours. After primary treatment of gastrografin and conservative treatment in study groups the obstruction was relieved in 44 (88%) patients of gastrografin group. To conclude, Gastrografin is safe and it can be used therapeutically in resolution of ASBO. It decreases necessity of surgery when conservative procedure fails.*

**Keywords:** *Abdominal Surgery, Gastrografin, Small Bowel Obstruction, Adhesion*

## 1. INTRODUCTION

Adhesions, particularly in patients with a history of previous abdominal surgery, are the most common cause of small bowel obstruction (SBO) [1]. In fact, any patient who undergoes abdominal surgery, that involves opening of the peritoneal cavity, a lifetime risk for the formation of adhesions will increase which may cause bowel obstruction at any point in time. It is thought that 93% of adhesions are caused by previous surgery, 7% are thought to be congenital and 2% are inflammatory [2]. Formation of adhesions after abdominal surgery is a part of the complex healing process that starts with a localized inflammatory reaction. It involves multiple growth mediators and coagulation factors causing deposition of fibrin and ends a few weeks later with fibrin deposits, which have undergone invasion by collagen producing fibroblasts and neovascularization, starting to remodel and form firm fibrous tissue [3,4]. One of the most frequent emergencies in general surgery is responsible for small bowel obstruction, which is also a significant source of morbidity which financial spending worldwide. Improvements in surgical technique, suture material, removal of powdered

gloves, and possibly the introduction of laparoscopic surgery have reduced the risk of adhesions and consequent SBO. Despite this, SBO from adhesions remains a common cause for hospitalization and operative intervention. Recurrence of adhesive small bowel obstruction is a particularly challenging problem. Adhesions seem to affect relatively young patients with a high risk for lifetime risk for recurrence. It is thought that the risk of adhesions is less with age. There is a possible role for a decrease in gastrointestinal motility with aging in postoperative adhesion formation, which may be responsible for higher risk in young patients [5]. Introduction of water-soluble contrast media in the form of Gastrografin has changed the management of adhesive SBO. It has proven to be safe, predicts the need for surgery and does not increase morbidity.

## **2. AIM AND OBJECTIVES**

**AIM:**

To study the therapeutic effects of gastrografin in adhesive small bowel obstruction.

**OBJECTIVES:**

To study the utilization of gastrografin in the treatment of small intestine adhesive obstruction. To compare patients of adhesive small bowel obstruction been treated with gastrografin and conventional conservative management.

## **3. REVIEW OF LITERATURE**

In developed countries , especially following colorectal and pelvic surgery, adhesive small bowel obstruction (ASBO) is a common cause of admission to surgical wards [6]. In fact, any patient who undergoes abdominal surgery, that involves opening of the peritoneal cavity, will have an increased lifetime risk for formation of adhesions which may cause bowel obstruction at any point in time. Understanding of the anatomy and physiology of small intestine is of utmost importance to diagnose and manage adhesive small bowel obstruction.

In the literature, there is disagreement about the frequency of postoperative mechanical small bowel obstruction in Children [7,8]. The lower ileum typically contains postoperative adhesions that give rise to intestinal obstruction. The risk of developing an adhesive small bowel obstruction is greater when there was more than one prior peritoneal procedure, and when, during this prior procedure, there was already peritonitis. Introduction of water-soluble contrast media in the form of Gastrografin has changed the management of adhesive SBO. It has proven to be safe, predicts the need for surgery and does not increase morbidity. In recent years, the use of Gastrografin in the management of adhesive small bowel obstruction has been evaluated [9,10].

## **4. MATERIAL AND METHODS**

This prospective open randomized controlled clinical trial study was performed on 100 patients suffering from small intestinal obstruction with a history of previous abdominal surgery. The Institutional Ethical Clearance was obtained and patients were included in the study after obtaining informed written consent from each patient. Period of study was 24 months. Study include patient of all age group and gender. Diagnosed with adhesive small bowel obstruction diagnosed clinically and radiologically (X-ray erect abdomen and USG abdomen and pelvis).

## 5. OBSERVATIONS AND RESULTS

This prospective open randomized controlled clinical trial study was conducted on 100 patients suffering from adhesive small bowel obstruction with history of previous abdominal surgeries.

Table 1: Age distribution of patients

Age groups (years)	Group A (Gastrografin)		Group B (Conservative)	
	Number	Percentage	Number	Percentage
<b>10-20</b>	09	18	10	20
<b>21-30</b>	11	22	09	18
<b>31-40</b>	14	28	12	24
<b>41-50</b>	13	26	14	28
<b>51-60</b>	2	4	4	8
<b>&gt;60</b>	1	2	1	2
<b>Total</b>	50	100	50	100

There was no significant difference between the two groups.

In present study, majority of the patients were between age group of 21 to 50 years in both the groups. Thus, >90% of the patients were below the 50 years of age in both the groups. (Table 1).

Table 2: Sex distribution of patients

Sex	Group A (n=50)		Group B (n=50)	
	Number	Percentage	Number	Percentage
<b>Male</b>	32	64	36	72

<b>Female</b>	18	36	14	28
<b>Total</b>	50	100	50	100

There was no significant difference between the two groups as far as age and sex were concerned.

It was observed that males were more commonly affected than females i.e., 32 (64%) in Group A and 36 (72%) in Group B.(Table 2)

Table 3: Antecedent Surgical Procedures

<b>Surgical Procedure</b>	<b>Group A (n=50)</b>		<b>Group B (n=50)</b>	
	<b>Number</b>	<b>Percentage</b>	<b>Number</b>	<b>Percentage</b>
<b>Small bowel</b>	41	82	40	80
<b>Colorectal</b>	01	02	01	02
<b>Appendectomy</b>	01	02	01	02
<b>Cholecystectomy</b>	02	04	01	02
<b>Gastroduodenal</b>	03	06	04	08
<b>Gynaecological</b>	02	04	03	06
<b>Total</b>	50	100	50	100

Was not statistically significant, ( $P > 0.05$ ).

Most of the patients in our study had history of small bowel procedures i.e., in 41 (82%) and 40 (80%) patients from Group A and C respectively. Three (6%) and two (4%) patients each had history of gastroduodenal and gynaecological and cholecystectomy procedures respectively. In Group B, four (8%) and three (6%) patients had history of gastroduodenal and gynaecological procedures respectively. The difference between the number of previous surgeries in both the groups.(Table 3)

Table 4: Distribution of signs and symptoms

Signs and symptoms	Group A (n=50)		Group B (n=50)	
	Number	Percentage	Number	Percentage
<b>Pain in abdomen</b>	50	100	50	100
<b>Vomiting</b>	37	64	44	88
<b>Distension of abdomen</b>	42	84	46	92
<b>Constipation</b>	45	90	36	72
<b>Failure to pass flatus</b>	42	84	31	62

Was not statistically significant ( $p>0.05$ ).

All patients in both groups have abdominal pain (100%), with the least frequent presenting complaint being 37 (64%) in group A complaining of vomiting and failure to pass flatus in 31(62%) patients. The difference in the distribution of signs and symptoms. (Table 4)

## 6. DISCUSSION

In general surgery, small bowel obstruction is responsible for one of the most popular emergencies. Adhesions are the most prevalent cause of small intestinal obstruction, particularly in patients with a history of prior abdominal surgery. Despite major improvements in surgical techniques, suture materials, removal of powdered gloves and use of laparoscopes that reduced the risk of adhesions and consequent SBO, adhesions remain a common cause for hospitalization and operative intervention. In present study, majority of the patients (>90%) were below the 50 years of age in both the groups. All of them had undergone previous surgery and had adhesive small bowel obstruction irrespective of age. Most patients in the study had history of small bowel procedures in 41 (82%) and 40 (80%) patients from Group A and B respectively. Gastroduodenal and gynaecological procedures were the next common surgeries. From the results, study concluded that Gastrografin is safe and it can be used therapeutically in resolution of ASBO.

## 7. CONCLUSION

From our results, we can conclude that Gastrografin is safe and it can be used therapeutically in resolution of ASBO. Clinical and radiological evidences help in identifying

the patients who can be treated conservatively. Gastrografin aids in the quicker resolution of obstruction in patients with ASBO and decreases the need for surgery, without inducing any adverse effects, similar to traditional conservative management. Gastrografin therapy decreased the duration of hospital stay relative to traditional conservative care, despite the main effects. Therefore, in the absence of other problems, we suggest the use of Gastrografin in handling partial ASBO.

## 8. REFERENCES

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