

**Original article:**

## **A comparative study of intestinal obstruction due to postoperative adhesions following various abdominal and pelvic procedures**

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### **ABSTRACT**

**Background:** Peritoneal adhesions are pathological bonds usually between omentum, loops of bowel and the abdominal wall. Peritoneal adhesions are mostly induced by surgical procedures in the peritoneal cavity.

**Aim:** to study aetiology, clinical features, investigations and treatment modalities used for intestinal obstruction caused by various abdominal and pelvic procedures.

**Methods:** Prospective hospital-based study on 100 cases of intestinal obstruction with previous history of abdominal or pelvic operation by consecutive sampling during January 2018 to Dec 2019 at dept of surgery J.L.N. Medical College & AGH, Ajmer. All data collected was analyzed with help of Epi info software from CDC and tests of significance considering level of significance as  $p < 0.05$ .

**Results:** Patient age range was 12 to 81 years, previous surgery within 5 years duration was reported in 42% cases, most common cause (50%) was Laparotomy. Sixty five percent were treated conservatively and mean stay was 11.23 days. Out of 35 cases operated for Subacute intestinal obstruction 37.14% cases presented with wound infections.

**Conclusion:** Most of these patients can be managed conservatively, however, some might need operative procedure in the form adhesiolysis and at times resection anastomosis.

**Keywords:** Postoperative adhesions, Subacute intestinal obstruction.

### **INTRODUCTION**

Peritoneal adhesions are pathological bonds usually between omentum, loops of bowel and the abdominal wall. These bonds may be a thin film of connective tissue, a thick fibrous bridge containing blood vessels and nerve tissue, or a direct contact between two organ surfaces<sup>1</sup>. Peritoneal adhesions may be classified as congenital or acquired, which can be post inflammatory or postoperative (the most frequent).<sup>2</sup> Postoperatively, they have been classified as de novo (type 1) or reformed (type 2).<sup>3</sup>

The process of postoperative peritoneal adhesion formation may be considered as the pathological part of healing following any peritoneal injury, particularly due to abdominal surgery.<sup>2</sup> Overall, approximately one-third of patients who underwent open abdominal or pelvic surgery were readmitted on an average for two times over the subsequent 10 years for conditions directly or possibly related to adhesions, or for further surgery that could potentially be

complicated by adhesions.<sup>4</sup> The incidence of intraperitoneal adhesions ranges from 67 to 93% after general surgical abdominal operations and up to 97% after open gynaecologic pelvic procedures.

The clinical presentation generally includes nausea and emesis, colicky abdominal pain, and a failure to pass flatus or bowel movements. The classic physical examination findings of abdominal distension, tympanic note on percussion, and high-pitched bowel sounds suggest the diagnosis. Radiological imaging can confirm the diagnosis, and can also serve as a useful adjunctive investigation when the diagnosis is less certain, computed tomography (CT) is recommended. Intestinal obstruction surgery usually has a favourable outcome if the surgery is performed before tissue damage occurs. Adhesions reform in 11-21% of patients who have surgery for adhesion-related intestinal obstruction.

### **AIM**

The aim of the study was to study aetiology, clinical features, investigations and treatment modalities used for intestinal obstruction caused by various abdominal and pelvic procedures.

### **METHODS**

In this prospective hospital-based study between January 2018 to Dec 2019 (2 years) 100 cases of intestinal obstruction with previous history of abdominal or pelvic operation were selected by consecutive sampling who had reported to Dept of surgery J.L.N. Medical College & Associated Group of Hospitals, Ajmer. After obtaining permission from Ethical Committee and informed consent of study population selected through analyzing inclusion and exclusion criteria all relevant information related to study subjects' socio demographic details, anthropometry, clinical profile was taken. The patients were treated as per protocol. When patient did not respond to conservative treatment, appropriate surgeries were done to relieve intestinal obstruction. All data collected was entered into Microsoft Excel and was analyzed with help of Epi info software from CDC and tests of significance considering level of significance as  $p < 0.05$ .

### **RESULTS**

Patient age range was 12 to 81 years in which 64.00% were males, 71.00% were from lower socio economic status. Previous surgery within 5 years duration was reported in 42% cases, most common cause (50%) was laparotomy. on erect X ray 66% showed multiple air fluid levels, on percussion 78% cases had tympanic note, 42% had hemoglobin values  $< 12$  g/dl, 23% cases had WBC  $> 11000/ mm^3$ , 84% cases had blood urea  $> 45$  mg/dl and almost similar proportion (85%) had serum creatinine  $> 1.2$  mg/dl. Sixty five percent were treated conservatively and Maximum (40%) patients stayed in hospital for 7-10 days with mean stay of 11.23 days. Out of 35 cases operated for Subacute intestinal obstruction 37.14% cases presented with wound infections. Ninety-eight percent patients showed relief of symptoms.

Table 1: Socio demographic profile

AGE	MALE	FEMALES	TOTAL
11-20 years	10 (10%)	2 (2%)	12 (12%)
21-30 years	10 (10%)	9 (9%)	19 (19%)
31-40 years	14 (14%)	7 (7%)	21 (21%)
41-50 years	5 (5%)	2 (2%)	7 (7%)
51-60 years	13 (13%)	5 (5%)	18 (18%)
61-70 years	8 (8%)	8 (8%)	16 (16%)
>70 years	4 (4%)	3 (3%)	7 (7%)
TOTAL	64 (64%)	36 (36%)	100 (100%)

In our study mean age of study population was 42.77 years.

Table 2 : sign, symptoms, physical examination

SYMPTOMS	No.	%
Abdominal Pain	90	90.00
Vomiting	72	72.00
Distension	85	85.00
Constipation	100	100.00
<b>SIGNS</b>		
Tachycardia	80	80.00
Tenderness	29	29.00
Mass	27	27.00
Visible Peristalsis	58	58.00
<b>Percussion</b>		
Tympanic	78	78.00
Dull	22	22.00
<b>Bowel Sound</b>		
Presence	32	32.00
Absence	68	68.00

All patients had constipation followed by Abdominal pain (90.00%), Maximum (80.00%) had tachycardia followed by visible peristalsis (58%).

Table 3: Radiological examination

<b>Erect X ray</b>		
Normal	2	2.00
Multiple air fluid level	66	66.00
Distended small bowel	32	32.00
<b>CT Finding</b>		
Positive	18	18.00
Not done	82	82.00

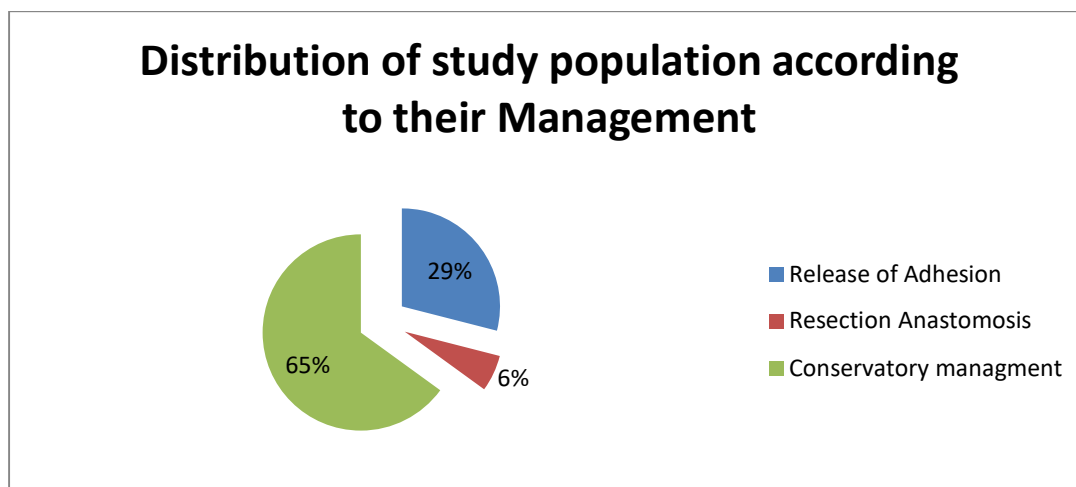
18% cases had undergone CT and all showed positive findings.

Table 4: cause of adhesion

<b>Previous Surgery</b>		
Laparotomy	50	50.00%
Appendicectomy	16	16.00
Open cholecystectomy	8	8.00
Hernioplasty	6	6.00
Tubectomy	1	1.00
Hysterectomy	15	15.00
LSCS	4	4.00
<b>Duration of previous surgery</b>		
0-5 years	42	42.00
6-10 years	28	28.00
11-15 years	16	16.00
16-20 years	8	8.00
21-25 years	6	6.00

Laparotomy (50), which was due to peptic perforation repair (13), Ileal perforation (30), Blunt trauma to abdomen with splenic injury (3) and Blunt trauma to abdomen with mesenteric tear (4).

Graph 1



## DISCUSSION

Present study with the title of "A study of intestinal obstruction due to post operative adhesions" was conducted in Department of Surgery, JLN Medical College, Ajmer, Rajasthan with the objectives of studying clinical profile as well as treatment of post operative intestinal obstruction. In our study of post operative intestinal obstruction, age range was 12 to 81 years and mean age of 42.77 years, in present study 64.00% were Males, 71.00% were from Lower socio economic status and Previous surgery within 5 years duration was reported in 42% cases, Similar to study done by Arshad M. Malik's (2010).<sup>5</sup>

Patients had constipation followed by abdominal pain (90.00%) and 80.00% had tachycardia followed by visible peristalsis (58%). In our study the most common cause of intestinal obstruction was Laparotomy in 50% cases which includes peptic perforation repair (26%), Ileal perforation (60%), Blunt trauma abdomen with splenic injury (6%) and Blunt trauma abdomen with mesenteric tear (8%), followed by appendicectomy and hysterectomy (16% & 15% respectively) and minimum proportion of cases were of tubectomy (1%). Similar results were found by Menzies D, Ellis H (1990)<sup>6</sup>, and Beck DE, Opelka FG and Bailey R (1999)<sup>7</sup> and JOSE MANUAL et al (2014)<sup>8</sup>.

On erect X ray 66% showed multiple air fluid levels similar to Dr. Sunil Kumar et al (2017)<sup>9</sup> However all cases (18%) who had undergone CT scan showed positive findings which is similar to the study of [D Frager](#) et al(1994)<sup>10</sup>. 65% patients were treated conservatively whereas 29% patients needed only release of adhesions and 6% patients underwent resection anastomosis. Similar results were found by Miller G et al (2000)<sup>11</sup> and Pomata M et al (2006)<sup>12</sup>. 40% patients stayed in hospital for 7-10 days with Mean stay of 11.23 days. 37.14% cases presented with wound infections out of 35 cases operated for Subacute intestinal obstruction. Ninety-eight percent patients showed relief of symptoms.

## CONCLUSION

Post operative intestinal obstruction is an important clinical entity with high incidence. Specific risk factors are age less than 40 years, presence of adhesion and postoperative surgical complication. Most of these patients can be managed conservatively, however, some might need operative procedure in the form adhesiolysis and at times resection anastomosis.

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