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Small Bowel Obstruction Due To Adhesions In A Tertiary Care Hospital – A Cross Sectional Study

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ABSTRACT
AIM:
To estimate the percentage of adhesive small bowel obstruction (SBO), its causes and management either conservatively/surgically.
MATERIALS AND METHODS:
This cross sectional study was done in Government Rajaji Hospital, Madurai during 1st July 2008 to 30th November 2009.
RESULTS:
Total 61 cases were included in the study. Common cause for adhesive SBO is gynecological procedures including puerperal sterilization and caesarian section, appendicectomy, lower midline and upper midline surgeries. Majority of conservative patients improved with in 4 days of treatment initiation. Around 16% of the conservative patients required surgical intervention.
CONCLUSION:
Conservative management is still the best option in selected group of patients. When in doubt surgical management is the next option in adhesive SBO.
KEYWORDS: *adhesion; small bowel obstruction; conservative management.*

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I. Introduction:

Postoperative adhesions are the major cause for small bowel obstruction (SBO). Injury to peritoneum during surgery and its healing process usually results in fibrin deposition followed by fibrin degradation, but when this equilibrium is troubled, it will cause adhesion. Factors influencing adhesion formation are peritoneal injury during surgery, trauma, inflammatory conditions, intra-peritoneal foreign bodies including mesh, glove powder, suture material, gall stone spillage and magnitude including the type of surgery. Trans-peritoneal surgery results in adhesion formation in 93-100% of patients, but clinical symptoms are absent in majority[1]. Adhesive obstruction may be potentially lethal, if there is a delay in the intervention. Repeated clinical examinations with other complementary investigations are essential for conservative or operative management[2]. In the absence of signs of peritonitis, strangulation or intestinal impairment, non-operative conservative management can be rewarding. Operative management can be open or laproscopic, which is patient specific[3]. In this study we analyzed the small intestinal obstruction due to postoperative adhesions.

II. Materials And Methods:

We have done a cross sectional study in department of general surgery, Government Rajaji Hospital, Madurai during 1st July 2008 to 30th November 2009 among small intestinal obstruction cases. All the patients diagnosed to have small intestinal obstruction due to adhesion clinically, during surgery or by radiological examination were included in the study. Diagnosis of obstruction is mainly by clinical examination, X-Ray abdomen erect, Ultra Sonogram (USG) abdomen and Contrast Enhanced Computed Tomography (CECT). We have excluded the obstruction due to Carcinoma, Hernia, Inflammatory conditions including peritonitis and Bowel gangrene, etc. except if those are caused due to adhesions. Conservative management of small bowel obstruction includes Ryles tube aspiration, nil per oral and intravenous fluids till the obstruction settles. Operative management includes laparotomy or laparoscopy with adhesiolysis or definitive procedure according to the cause.

III. Results:

Among the 92 cases of small intestinal obstruction, 61 cases of small bowel obstruction due to adhesions were included into the study. Excluded 31 cases were due to pathology like inflamed appendix, perforation, hernia, meckels diverticulitis, band with malrotation of gut and ileocaecal tuberculosis.

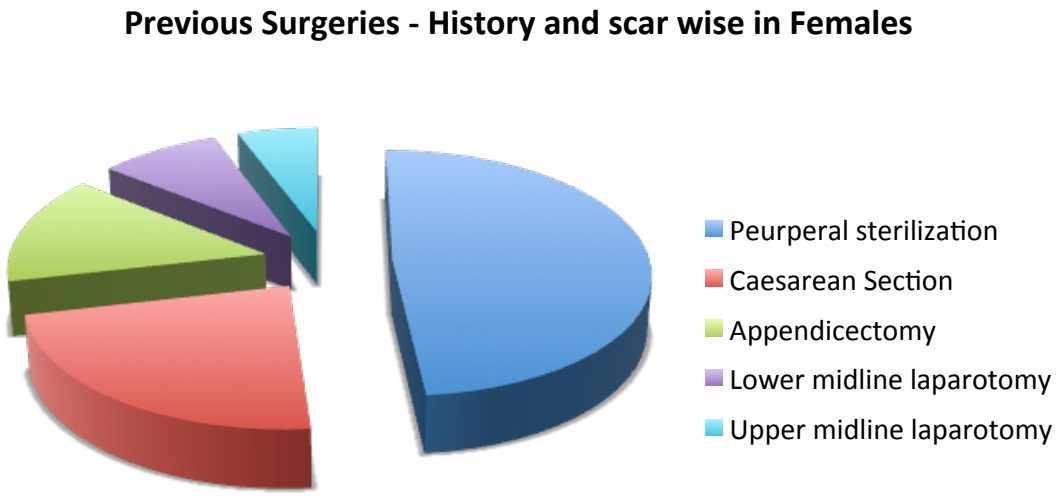
Obstruction due to postoperative adhesions was 61. Among them 35 were females and 26 were males. Age group wise 15-34 were 12, 35-54 age group were 20 and the remaining 19 were belongs to 55 and above [Table 1].

Table 1. Age group distribution in adhesive patients.

Age Group	Female	Male	Total
15-34	9	5	14
35-54	15	11	26
55 and above	11	10	21

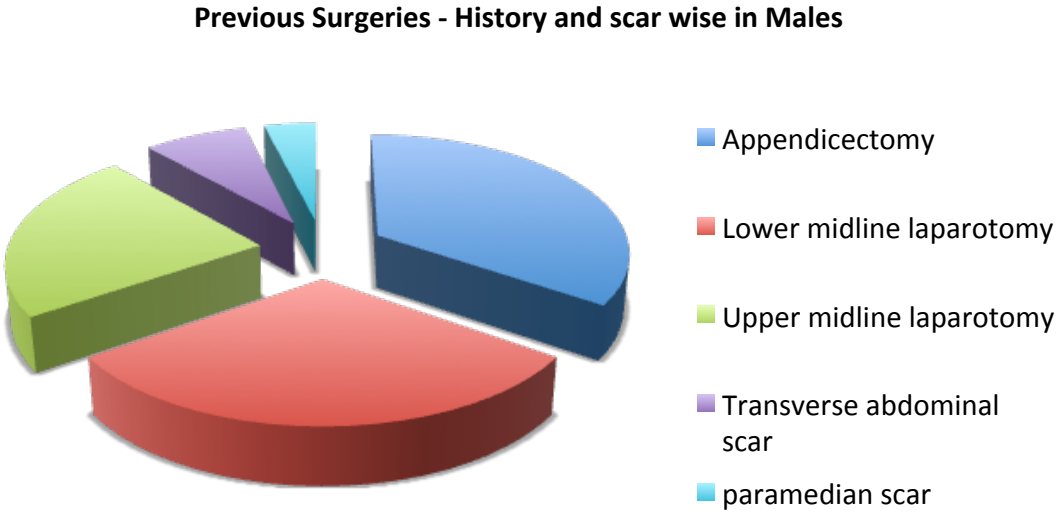
Among the 35 females, based on their history and pattern of scar, their previous surgeries before obstruction were Puerperal sterilization(17), Caesarean Section(8), Appendicectomy(5), Lower midline laparotomy(3) and Upper midline laparotomy(2)[Figure 1].

Figure 1. Pie chart showing previous surgeries in females based on their history and scar.



Among the 26 males , the previous surgical history were as follows : Appendicectomy(9), Lower midline laparotomy(8), Upper midline laparotomy(6), Transverse abdominal scar(2) and paramedian scar(1)[Figure 2].

Figure 2. Pie chart showing previous surgeries in males based on their history and scar.



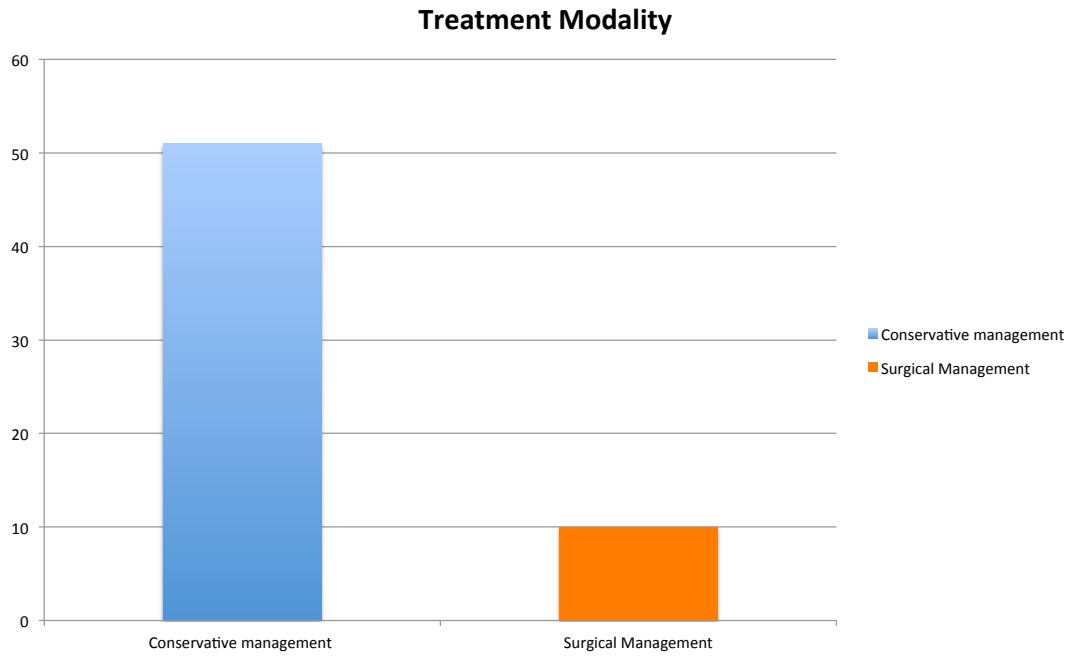
Surgical history wise, 24 had elective surgery, 35 had emergency surgery and for 2 patients history is not clear about the nature of surgery.
Duration of conservative management before relieving of obstruction are as follows, 18(35.3%) in less than 2 days, 25(49%) in 2-4 days and the remaining 8(15.7%) in 5-7 days(Table 2).

Table 2. Frequency showing number of days required for relief of obstruction in conservative management.

Number of days	Number of patients	Percentage
Less than 2 days	18	35.3%
2-4 days	25	49%
5-7 days	8	15.7%

A mean day taken before relieving obstruction is 3.2 days.Conservative management is successful in 51(83.6%) cases of small bowel obstruction and the remaining 10(16.4%) patients underwent surgical procedures[Figure 3].

Figure 3. Bar diagram showing management modality.



Among the 10 surgical procedures performed, 6 were open adhesiolysis, 3 laproscopic adhesiolysis and 1 internal hernia reduction and rent closure.
No bowel gangrene or death was reported in both conservative and operative groups.

IV. Discussion:

Non-operative management of adhesive-SBO is successful in around 84% of our patients, which is comparable to Aquina et al. who managed 78% of his cases conservatively[4].

Appendicectomy is the common cause of obstruction in males in our study as comparable with the study done by Tanphiphat et al [5], but in females puerperal sterilization and caesarean section were the common cause for obstruction .

Gynecological procedures, Appendicectomy and Intestinal surgeries are the major cause for adhesive-SBO as per the study done by Ulvik et al[6]. which is comparable with our study, which is also noted the same surgeries as a common cause of adhesive-SBO.

Recurrence after operated adhesive-SBO is a entity called Operated adhesive postoperative SBO, which is having high recurrence rate[7]. We did a cross sectional study, where we did not follow the patients so we cannot comment on the recurrence after conservative or surgical management.

Drawback of our study is cross sectional study without follow-up of the patients and not including the unstable cases or cases operated in emergency for gangrene/perforation due to adhesive obstruction.

V. Conclusion

Conservative management is still the best option when there is no sign of peritonitis or gangrene of the bowel and it will reduce the surgical morbidity to the patients. In females puerperal sterilization and caesarian section are the most common cause for adhesion induced small bowel obstruction, whereas in males appendicectomy is the cause. When in doubt laparotomy or laparoscopy is still the best option to end this obstruction puzzle.

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