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EFFECT OF GASTROGRAFFIN CONTRAST ON HOSPITAL COST FOR PATIENT OF SMALL BOWEL OBSTRUCTION

Surgery

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ABSTRACT

Postoperative small bowel obstruction is well known complication of open and laproscopic surgery and its treatment is not well define. Usually conservative treatment for how many days it should be continue no guidelines are available. We did study to know therapeutic effect of gastrograffin on hospital cost of these patients. We found that patients in whom gastrograffin used to guide treatment hospital cost is significantly less. So gastrograffin is having therapeutic effect on partial bowel obstruction and it reduce hospital cost.

KEYWORDS

Water soluble, Post operative, Bowel obstruction. Hospital cost

INTRODUCTION

Postoperative adhesions remain one of the most common problems which the surgeons have to face in present time. Post- operative surgical adhesions are formed as a result of trauma, infection or injury to tissue.

Adhesions have been well documented as the leading cause of intestinal obstruction with a history of previous abdominal surgery [1] Adhesive small bowel obstruction is one of the most common surgical causes for admission and its treatment is still controversial. Nonoperative conservative management is indicated in the case of partial obstruction. The reported operative rate for adhesive small bowel obstruction ranges from 27 % to 42 % [6].

Most patients receive conservative treatment in the initial period unless there is suspicion of bowel strangulation. However, the optimal duration of this trial conservative treatment is not clear. There has been no definite answer as to when conservative treatment should be considered unsuccessful and the patient should undergo surgery. The aim of this study is to determine whether water soluble contrast agent can decrease hospital stay in patients of post operative small bowel adhesions.

1. MATERIALS AND METHODS

We have studied patient from Aug. 2015 to Sept. 2016 patients in Netaji Subhash Chandra Bose medical college Jabalpur we include adult patients with history of previous abdominal surgical procedures and presents with clinical and radiological evidence of adhesive small intestine obstruction without signs of strangulation and peritonitis
All patients given conservative management for 48 hrs then patients not improving given gastrograffin trial and followed. Those who responded in the initial 48 hours had conservative treatment continued. Patients showing no clinical and radiologic improvement in the initial 48 hours were undergone surgery.

2. RESULTS

This Study is done at NSCB MCH Jabalpur from august 2015 to September 2016. We included 17 patients in study in whom 6 are female 11 are male. Majority of patients are between 41-50 age groups. Abdominal distension, not passing flatus , not passing motion is present in all of the patient. Abdominal pain is present in 16 of patient. Vomiting was as a presenting complain in 47.1% of patient only.

In 70.6 % patients xray abdomen shows multiple air fluid level while in 29.4 % patients there are few dialated bowel loops. In our study we have found 70.6% patient clear cut obstructive features of small bowel obstruction which is confirmed and supported by ultrasonography. We did ultrasonography to excude the other cause for small bowel obstruction as cancers. We did not do ct scan prior to gastrograffin meal. In our study 76.5 % patients responds to gastrograffin while 23.5 % patients did not responds and further treated with surgery

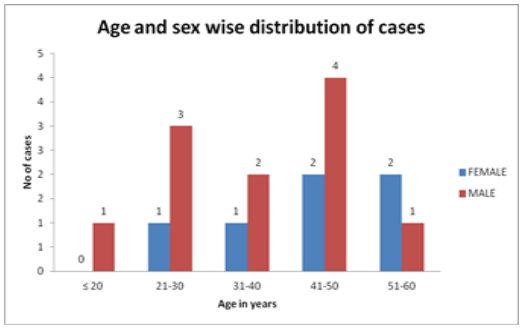
In gastrograffin given patient mean hospital stay is 8.85 days while in operated patients it is 16.5 days. 76.5 patient having bowel sounds in their first 48 hours rest of 4 patient never regain it even after gastrograffin study also. 64 % patient passed flatus within 24 hrs after giving gastrograffin and 2 other patient passed with in 72 hrs.

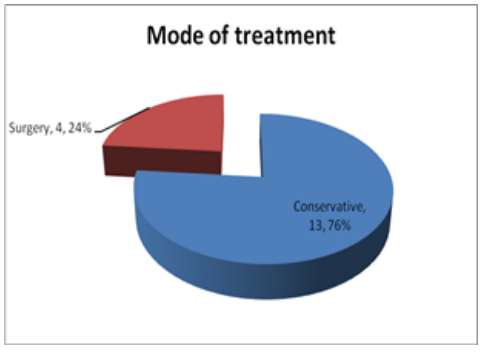
In our study there is no complication by giving gastrograffin in any patient. Of 17 patients 4 does not relieved with gastrograffin and refer to laprotomy. Of these 4 patients 1 died due to drug reaction and 1 get complication enterocutaneous fistula.

3.1 Figures and Tables

Hospital Stay			
	Mean Duration in days	Std. Deviation	N
Conservation	8.85	4.240	13
Surgery	16.50	12.021	2
Total	9.87	5.743	15

Age in years	Frequency	Percent
≤ 20	1	5.9
21-30	4	23.5
31-40	3	17.6
41-50	6	35.3
51-60	3	17.6
Total	17	100.0





Post op adhesive small bowel obstruction occurred mainly in the male patient in our study (76%) as in Nasrin et al. (64%) and Salamah et al. (65.7%).[5], Based on our study, positive GF test was seen in only 66.7% of the patients much lower than others which ranged from 80 to 90%. [1],[2],[3],[5] The reasons were they excluded those who had pelvic irradiation, and 20% of Salamah et al. series were a virgin abdomen. [5] Meta-analysis supports the use of GF to predict needs for surgery. [1] If it reaches the colon by 4-24 h, obstruction will resolve without surgery in 99% of patient (positive predictive value [PPV]). Otherwise, obstruction is unlikely to resolve without operation in 90% of patients (Negative predictive value [NPV]). [2] Similarly, Di Saverio et al. demonstrated that 96% of patients who fail GF within 24 h need surgery. [8] All our positive GF patients responded well with conservative management with no one requires surgery, reconfirming the established high PPV. Even though, Branco et al. established that sensitivity/specificity, PPV and NPV were similar between 4 and 8 h and at 24 h, [7] our series highlighted the contradictory. In a significant percentage of patients (28.6%, six patients), the test was only positive at 24 h.

Emergency surgery is warranted when strangulation or complete obstruction occurs with reported rate ranges from 27% to 42%. [3],[4] Initial meta-analysis of four randomized controlled trials in 2007 showed, WSCA did not reduce the need for surgery, but recent meta-analysis with additional three more randomized control trials concluded that it significantly reduced the need for surgery (30-20%) and shortened the hospital stay. [1],[2] Jonathan et al. in their trials clearly demonstrated the therapeutic effect of GF. 73% of GF patients had complete resolution within 24 h, whereas only 52% in the placebo group. [4]

Patients who fail GF test preferably not directly undergo surgery. Conservative management is often continued depending on clinical assessment. [9] Multiple studies have shown that up to 30% of patient who have retained the contrast in the small bowel after 24 h can still be managed nonoperatively. [9] In Salamah et al. series, four out of 13 (30.8%) patients who fail initial GF test can still be managed conservatively. [5] Despite that we offered surgery to all of our failed GF patients as most of them had midline laparotomy. Moreover, its NPV was 90%. [2]We strongly belief on the idea proposed by Zielinski and Bannon was to divert the old concept of differentiating SBO to predicting failure of nonoperative management with the aim of operating those with predicted failure as early as possible. [1] Based on our current practice, we had no gangrenous bowel requiring resection and mortality. Mean hospital stay for patients who successfully managed conservatively was 5.6 days, significantly longer compare to GF group, 3.9 days. [7] Similarly, Nasrin et al. demonstrated the significant reduction from 4.6 days to 2.7 days for control and GF groups, respectively, a significant reduction by 57.6% which comparable to Biondo et al. (52%) and Di Saverio et al. (59.8%). [3] Ours was 3 days (Median) for nonoperated GF group and 5 days for total GF patients (operated and nonoperated). A longer stay than others could be attributed by long mean stay of our operated patients. Three days stay for nonoperated GF group is much shorter than nonoperated, nonGF group which normally around 5 days to a week.

Many limitations can be elicited from our case series by its nature. A comparative,randomized, prospective study with proper statistical analysis would definitely provide more meaningful results. However, results from this review will set a standard of care for post operative adhesive amall bowel obstruction patients in future

4. CONCLUSION

In our study we studied role of gastrograffin in reducing hospital stay in post operative small bowel obstruction who did not respond to primary conservative treatment. We found gastrograffin a safe and effective mode to treat post operative small bowel obstruction . hospital cost in gastrograffin treated patient is significantly low so it is helpful to reduce hospital burden and better use of resources

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