ORIGINAL ARTICLE

Comparison of mean time of postoperative return of bowel movements with or without Nasogastric Tube in elective abdominal surgeries

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ABSTRACT

Aim: To compare the mean time of postoperative return of bowel movements with or without Nasogastric Tube in elective abdominal surgeries.

Methods: This present randomized controlled trial was conducted at the department of Surgery at Shaikh Zayed Hospital, Lahore. The study was conducted for six months from 26th January 2016 to 26th July 2016. The Non probability consecutive sampling technique was used in this study. Informed written consent was taken after explaining each patient about the purpose and the procedure of the study. Patients were divided into two groups, Group A (with Nasogastric Tube) and Group B (without Nasogastric Tube). Nasogastric Tube was passed during surgery in all patients of group-A. Mean Time (hours) was noted for passage of first flatus by the patient after surgery in each group.

Results: In this study, there were total 180 patients, 90 in each group. The mean age of the patients was 45.17±11.94. 86(47.8%) patients were males and 94(52.2%) patients were females. 30(16.7%) patients of Bilroth-I gastrectomy, 25(13.9) of Bilroth-II gastrectomy, 72(40%) of small bowel anastomosis and 53(29.4%) of large bowel anastomosis were included in this study. 103(57.2%) surgeries were done in less than 3 hours time and 77(42.8%) in more than 3 hours.

Mean time to pass the flatus in patients without Nasogastric tubes was less (46.19±9.48 hours) as compared to patients with Nasogastric Tubes (49.20±7.90 hours) with P-Value of 0.02 which is statistically significant and supports the hypothesis.

Conclusion: This study has demonstrated that the mean time of postoperative return of bowel movements without Nasogastric Tube in elective abdominal surgeries is less as compared to those who were passed Nasogastric Tubes.

Keywords: Nasogastric Tube, Abdominal Surgeries, Return of bowel movements.

INTRODUCTION

Abdominal surgeries are standard procedures for treatment of gastric decompression. Nasogastric tubes are commonly used in normal routine of abdominal surgeries and to achieve normal bowel function it is kept post-operatively for at least a couple of days[1]. A number of surgeons prefer to employ gastric decompression as they consider that it can lessen the incidence of side effects of surgeries (post-operative ileus) such as nausea, aspiration, vomiting and anastomotic leakage. Hence reducing side effects eventually shortens the duration of stay in hospital by increasing treatment efficacy and normalizing bowel function.[4] Contrary to this, wound complications that can cause infection, atelectasis caused by pulmonary complications and other complications like aspiration and abdominal discomfort(Nausea, Vomiting, Abdominal distention) is not prevented leading to no improvement in treatment efficacy and hence failure to improve bowel function in a relatively short duration of hospital stay.[2] Also it is noted that excluding passage of a nasogastric tube has no increasing effect on the incidence of complications like anastomotic leakage or wound rupture during surgical incision.[1] It is determined fact that unnecessary use of Neuro Gastric Tubes during normal surgery procedures is employed by most surgeons all over the world.[3] Hence any advantages related to normal nasogastric decompression employed routinely after removal of bowel are not proffered any longer in modern era of surgery that supports evidence based procedures. Same is the case with prolonged enteral restriction employed after removal of bowel.[2] A research study was organized and carried out at Sichuan provincial people's hospital on basis of randomized controlled trial in China. The two test groups had similar characteristics related to subject patients like age, gender and diagnosis, type of operation and location of tumor. Passage NGT's before performance of surgery was found to be not related with statistically significant difference in total duration of surgery, volume of blood lost during operation and

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complications after operation. In addition to this, subject patients of these groups without usage of nasogastric tubes had shorter duration to first passage of flatus (43.8±11.2 vs. 49.0±13.3 hours, p=0.02)[5].

Similarly in Rawalpindi a Quasi experimental research study was carried out at Surgical Unit-I of Holy Family Hospital. It was found out after statistical analysis that there is no significant difference in time duration that is required for normalization of bowel movements and initiation point of oral sips after operation was found between two groups. Bowel movements returned on average after 1.80±0.6 days in group-I and 1.80±0.65 days in group-II (p=0.553).[6] The rationale behind this study is to establish whether NGTs could be routinely omitted in patients requiring abdominal surgeries in our population without any adverse effects. As some controversy is still present in available literature for NGT's as stated above[5,6]. Also, the data regarding this study is very limited in Pakistan due to which the surgeons are not confident enough to bring this into their practices and patients have to bear all the discomforts and complications caused by unnecessary NGTs.

The objective of the study was to compare the mean time of postoperative return of bowel movements with or without Nasogastric Tube in elective abdominal surgeries

MATERIALS AND METHODS

This randomized controlled trial was conducted at Department of General Surgery, Postgraduate Medical Institute/Shaikh Zayed Hospital, Lahore during a period of six months, from 26th January 2016 to 26th July 2016. Non probability consecutive sampling technique was used. The sample size of 180 (90 in each group) is estimated by using 95% confidence level, 80% power of test with an expected mean ± standard deviation of mean time of postoperative return of bowel movements in both groups; (43.8 ± 11.2 vs. 49.0 ± 13.3 hours)[5] in group B (without Nasogastric Tube) and group A (with Nasogastric tube) respectively.

Inclusion criteria:

- Patients of both genders
- Patient's age from 18 to 70 years
- Patients undergoing elective abdominal surgeries related to gastrointestinal tract as per operational definition

Exclusion criteria:

- Patients not willing to participate in study
- Patients with acute intestinal obstruction (showing cut of level of contrast in gastrografin abdominal series)
- History of abdominal irradiation

Data collection procedure: A total of 180 patients (90 in each group) fulfilling the inclusion criteria was admitted in general surgery ward through the emergency and out-patient department. After approval of Hospital Ethical committee (Institutional Review Board) Shaikh Zayed Hospital, Informed written consent was taken by explaining each patient about the purpose and the procedure of the study. Patients were divided into two groups, Group A (with Nasogastric Tube) and Group B (without Nasogastric Tube). Patients were randomized into each group by lottery method. Nasogastric Tube was passed during surgery in all patients of group-A. All operations were done by the same consultants and surgical team. Time (hours) was noted for passage of first flatus by the patient after surgery in each group. All the data was collected through a well-defined Pro-forma

OPERATIONAL DEFINITIONS

Return of bowel movements: It is defined as average time duration(measured in hours) of shifting of patients from operation unit to recovery unit until the passage of first flatus.

Abdominal surgeries: Billroth I, Billroth II, Anastomosis of small and large bowel.

Data analysis procedure: The data was analyzed by SPSS version 20. Mean and standard deviation (SD) for the quantitative variables i.e. age and time to passage of first flatus after surgery were calculated in both groups. Student t-test was applied to check the significance of mean time of passage of first flatus in both groups. Frequency and percentage were presented for categorical variable i.e., gender in both groups. Data was stratified with respect to age, gender, type and duration of surgery (Cut of 3 hours) to address the effect modifiers. P-value of less than 0.05 was considered statistically significant.

RESULTS

In this study, there were total 180 patients, 90 in each group. The mean age of the patients was 45.17±11.94 years with minimum and maximum ages of 20-70 years respectively. A total of 86 (47.8%) patients were males and 94(52.2%) patients were females. Patients of different diseases were included in this study. 30 (16.7%) patients of Bilroth-I gastrectomy, 25(13.9%) of Bilroth-II gastrectomy, 72 40%) of small bowel anastomosis and 53(29.4%) of large bowel anastomosis were included in this study. 103(57.2%) surgeries were done in less than 3 hours time and 77(42.8%) in more than 3 hours. Mean time to pass the flatus in group A patients in less than 3 hours of surgery was statistically more than group B patients (58.27±10.78 vs 43.57±9.44). Similarly mean time to pass the flatus in more than 3 hours of surgery was also more in group A as compared to

group B (57.363±10.68 vs 44.18±8.80). There was no significant difference on postoperative return of bowel activity with respect to age, gender and type of surgery respectively. Overall mean time to pass the flatus in patients without Nasogastric tubes was less (46.19 ± 9.48 hours) as compared to patients with Nasogastric Tubes (49.20 ±7.90 hours) with P-Value of 0.02 which is statistically significant and supports the hypothesis.

DISCUSSION

There is more than enough amount traditional evidence that is transferred on to each generation of all over the globe surgeons but have significant lack of authentication. Some of these objections involve in performance of gastric decompression after surgery of abdomen using NGT's and delay of proper oral food ingestion until complete resolution of ileus as it is noted in common surgical practice. For instance , in china a large number of surgeons comprising 97.5% of Chinese surgeons normally place NGT and keep until passage of first flatus from anus after excision anastomosis of lower digestive tract, whereas only 2.5% of Chinese surgeons finish gastrointestinal decompression couple of days later after surgical operation before the passage of first flatus.[56] In fact NGT may cause moderate to severe discomfort in 88%, severe discomfort in 70% of the patients and significantly delay in duration of the return of normal gastrointestinal and ileum function.[57] In this research study the mean or average time of normalization of bowel movements after surgery in Neuro Gastric group is 49.20 ± 7.90 hours whereas in patients without NG tube, it is 46.19 ± 9.48 hours. In case of duration of surgery, either the time for normalization was shorter than 3 hours or more; the average time to pass the gas through anus in group A (Neuro Gastric Group) was found out to be higher when related or compared to group B (Non Neuro Gastric Group). For age, gender and type of surgery same results are observed with respect. These differences found in our study are statistically significant which strongly support our hypothesis that postoperative return or normalization of bowel activity is not significantly affected by the age, gender, duration and type of surgery. We believe that the omission of routine postoperative gastrointestinal decompression may be an important first base step in improving the rate of gastrointestinal recovery in elective abdominal surgeries. Patients without tubes are mobilized earlier and they resumed their oral diet earlier than the patients of tube group.

This study only focused on return of bowel activity postoperatively. Other outcomes like incidence of anastomotic leakage, wound infections and pulmonary complications could also have been compared.

CONCLUSION

It has been concluded in this study that significant difference exists between the mean time of return of bowel movements in patients with or without nasogastric tube in elective abdominal surgeries. It is less in No NG group-B (46.19 ± 9.48 hours) as compared to NG group-A (49.20 ± 7.90 hours). Age, gender, type and duration of surgery, none of these factors affected the outcome. With this evidence, we believe that Nasogastric Tubes can be routinely omitted in patients requiring abdominal surgeries in our population without any adverse effects.

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