

EARLY ORAL FEEDING, NO NASOGASTRIC SUCTION AND NO PERITONEAL DRAINAGE; COMPARED TO CONVENTIONAL POST OPERATIVE PROTOCOL IN CASES OF GASTRIC AND SMALL BOWEL ANASTOMOSES

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ABSTRACT

Objective: To know the out come of a randomized controlled trial of early oral feeding, no nasogastric (NG) suction and no peritoneal cavity drainage after gastric and small bowel anastomoses.

Material and Methods: Patients admitted for anastomosis involving stomach and small bowel were randomized into two groups (50 patients each) by lottery methods of prewritten cards. In group A (control), patients were managed by conventional postoperative protocol (N/G decompression, peritoneal drain and nil per oral for 5 days). In group "B" (under trial) patients were managed without NG decompression and peritoneal drain and were allowed oral feeds on third postoperative day. Surgery was done by various grades of surgeons from consultants to Senior Trainees.

Results: In group A, 39/50 patients were male and average age was 47.5 years. Morbidity recorded in this group was 14% including postoperative chest infection, wound dehiscence, vomiting and hypovolemia in one patient (2%) each. Three patients (6%) had anastamotic failure resulting into fistula. Three (6%) patients died of the procedure. In group B; 34/50 were males and average age was 42.5 years. Postoperative abdominal distension was recorded in 3 (6%) patients and vomiting in 2 (4%) patients. No anastamotic failure occurred in this group. Mortality was nil.

Conclusion: Patients of gastric and small bowel anastomoses / repair can be managed without N/G tube and peritoneal drain. These patients can be allowed home on fourth postoperative day.

Key Words: Small Gut Anastomosis, Gastric Anastomosis, Early Oral Feed, No Nasogastric Suction, No Peritoneal Drainage, Randomized Controlled Trial.

INTRODUCTION

Conventionally various surgical procedures done on stomach and small bowel are followed by nasogastric decompression, peritoneal drainage and nil per oral (NPO) for 5 days. Oral fluids are allowed on 5th postoperative day, semisolid on 6th day and discharged home on 7th postoperative day.¹ This methodology is practiced with ever lasting worry of surgeons, that on the contrary anastomosis may give way and fistula may form. This practice is not cost effective. It is well known that factors affecting healing of anastomosis are, good blood supply, no tension, no distal obstruction, appropriate suture material and surgical technique. Nasogastric tube and peritoneal drainage have not been put to many controlled trials in our setup. Recently some studies have reported early oral feeding,² some authors have

worked on the role of prophylactic Nasogastric decompression,³ while others only on drainage of peritoneal cavity,⁴ but no single study could be found in the English literature where these three variables have been studied together. The objective of this study was to conduct a randomized controlled trial to see the results of patients treated without nasogastric decompression, peritoneal drain and to allow oral feeds after 72 hours and discharge them home on 4th post operative day.

MATERIAL AND METHODS

This randomized controlled trial was conducted in the department of Surgery Postgraduate Medical Institute Lady Reading hospital Peshawar. One hundred patients of either sex admitted for anastomosis involving stomach and small gut were enrolled in the study from 15th

of November 2005 to the 11th of November 2006. Two groups were made by lottery methods of pre written 100 cards.⁵ Group A included 50 patients who had nasogastric decompression and peritoneal drain for 5 days. These tubes were removed on 5th postoperative day and allowed oral feeds. On the 6th post operative day semisolids were started and if no complication occurred, these patients were allowed home on 7th postoperative day. We compared the out come of this group with another group of 50 patients (group “B”). In these patients we did not put nasogastric tube and peritoneal drain and allowed them oral feeds on 3rd postoperative day. These cases were allowed home on 4th postoperative day. The information so collected was analysed at the end of the trial to see outcome regarding postoperative vomiting, abdominal distension and anastomotic failure. Approval from the ethical committee of the hospital was sought. Anastomosis was done with 2/0 vicryl mounted on non-cutting, round body needle. Various grades of surgeons from consultants to senior trainees actively participated in the trial. Patients with perforated DU, GU and those who were uremic, jaundiced or immunocompromised were excluded.

RESULTS

Group A: Out of 50 cases of group “A” 39 were male and 11 female (ratio 3.5:1). Average age of the patients was 47.5 years. In 23/50 cases (46%) elective surgery was done on stomach and small bowel, 27/50 (54%) cases were operated in emergency.

In 19/23 (82.6%) patients of elective group, 21 small gut anastomoses were performed and in 4/23 (17.4%) cases (2 pyloric stenosis, 2 carcinoma pancreas) gastrojejunostomy (GJA) was performed.

Out of 27 patients operated in emergency, 11 (40.7%) patients had repair of stomach (2 stab, 8 FAI and one perforation in a diseased stomach), and 3 (11.1%) patients had repair of duodenum. In 3/27 (11.1%) patient, 5 jejunal repair/anastomoses and in 10/27 (37.1%) patients 15 ileal anastomoses / repair were done. (Table 1)

Morbidity recorded in this conventional VISCERA ANASTOMOSED / REPAIRED IN THE TWO GROUPS

Organ	Group “a” (n=50)	Group “b” (n=50)
Small gut	35 (70%)	35 (70%)
Stomach	11 (22%)	10 (20%)
* GJA	04 (8%)	5 (10 %)

* GJA = Gastrojejunal Anastomosis or Gastrojejunostomy

Table 1

POSTOPERATIVE COMPLICATIONS: GROUP “A”

Complications	No of Patients (n=50)	% age	
Chest infection	01	2%	
Wound dehiscence	01	2%	
Vomiting	01	2%	
Hypotension	01	2%	
Leak /Fistula	03	6%	
* Extra days	3 days extra	1	2%
	1 day extra	1	2%
Mortality	03	6%	

*Extra days = More than 07 days stay in hospital

Table 2

group was 14% (7/50). Chest infection, wound dehiscence, post operative vomiting and postoperative hypotension in one case (2%) each was recorded (Table 02). Three patients (6%) had anastomotic failure resulting into fistula.

Three (6%) patients out of 50 in this group died. An 18 years old male patient had sustained FAI and had been operated initially in emergency. He had repair of perforated duodenum and laceration of IVC. He died of DIC secondary to duodenal fistula. A female of 20 years died due to septicaemia. She had FAI and repair of jejunum. A 50 years old male had repair of traumatic duodenal laceration and diverting gastrojejunostomy. He had duodenal fistula and died of DIC. These three patients died of a leaking viscus; a mortality of 6%.

Group B: Out of 50 patients of group “B” 34 were male and 16 females. (Ratio 2.1:1).

Average age in this group was 42.5 years. Out of 50 cases, 22(44%) had anastomosis as elective procedure, while in 28(56%) cases 29 anastomosis were done in emergency. In this group 35 (70%) patients had surgery on small gut, 10 (20%) on stomach and 5 (10%) patients had gastrojejunostomy. (Table 01). Gastrojejunostomy

POSTOPERATIVE COMPLICATIONS: GROUP “B”

Complications	No of Patients (n=50)	% age	
Abdominal Distension	03	6%	
Vomiting	02	4%	
* Extra days	3 days extra	1	2%
	2 days extra	1	2%
	1 day extra	1	2%
Mortality	Nil	0 %	

* Extra days = More than 04 days stay in hospital

Table 3

was done for gastric outlet obstruction secondary to pyloric stenosis.

In this group 3 (6%) cases had postoperative abdominal distension and only one (2%) patient needed N/G decompression for 24 hours. All these 3 patients went home as per protocol. Postoperative vomiting was noticed in two (4%) cases. One (2%) patient stayed for 3 days more and another one (2%) for one day extra. One patient (2%) was kept for two more days in the ward as he had to undergo check sigmoidoscopy after ileostomy closure to assess for tumour recurrence in the rectum. (Table 03). No anastomotic failure occurred in this group and mortality in the trial group was nil.

DISCUSSION

This randomized controlled trial was conducted on 100 patients who were divided equally in control and trial group. 27 (54%) of group "A" were operated in emergency while 28(56%) of group "B" had been operated in casualty as emergencies. In the trial group 22(44%) cases (90%) were operated on elective operation lists. The morbidity in the control group was 14% while it was 10% in the trial group(Table-2,3). The use of nasogastric tube is only of historic interest and is therefore used by convention.⁶ It is also traumatizing to the patients and may cause psychological upset. Nasogastric tube has been used with the intention that it will hasten the return of bowel function, diminish risk of anastomotic leakage and shorten hospital stay. These parameters were analysed in a meta-analysis of 28 studies. The conclusion drawn was that routine nasogastric decompression does not accomplish any of its intended goals and so to be abandoned.⁷ In a study by Cork C⁸, gastric emptying was studied in critically ill patients. The author inferred that gastric dysmotility in critically ill patients needs the treatment of the underlying cause like sepsis, pain, hypotension, dehydration and hyper glycaemia. Nasogastric tubes may rather cause gastric dysmotility.⁸ Complications related to nasogastric intubation has been reported in neonatal age.⁹ In a study conducted in 5 European hospitals where upper G.I surgery was performed recorded that "no uniformity exists regarding the use of nasogastric decompression and nil by mouth regimens". It was found that drinking at will is generally allowed by the first post operative day.¹⁰ A randomized controlled trial from Surrey (UK) reported that nasogastric decompression is not justified.¹¹ Akbaba et al in their study of total gastrectomy in 66 patients showed no increase in complications in patients managed without N/G tube.¹² In another study of Roux-En-Y gastric anastomosis no complications were noted in

patients managed without N/G decompression. The authors concluded that routine N/G is not necessary in these operations.¹³ In another study 102 patients were operated for large and small gut anastomoses. Authors concluded that N/G tube is not warranted in these patients.¹⁴ Bauer JJ et al managed 100 patients without N/G tube after major abdominal surgery. No major complications were noted in these patients. Further more patients also found it to be more comfortable without N/G tube.⁴ Cheadle WG et al in their study of 200 patients noted significantly increase time in recovery of the patients who had N/G tube. Patients also had increase discomfort in throat and painful swallowing. Patients had longer hospital stay. Their study concluded increase morbidity and increase recovery time in both group of patients.¹⁵ In one meta-analysis of 26 trials (3964 patients) comparing selective versus routine N/G decompression in elective laparotomy patients ; it was concluded that patients managed without N/G tube does not have increased morbidity.¹⁶ Our conclusion is simple that nasogastric decompression after gastric and small bowel surgery is un-necessary.

We did not put a drain in peritoneal cavity in 50 patients who underwent gastric and small bowel surgery. A meta-analysis of 17 trials revealed that drains do not reduce complications after hepatic, colonic or rectal resection with primary anastomosis, and appendectomy for any stage of appendicitis. Drains were found even harmful after hepatic resection in chronic liver disease. However, drains were found to be indicated after oesophageal resection and total gastrectomy.⁵ Abdominal drains have been found to be rather harmful. Many authors have reported bowel perforations caused by drains.^{17,18} Faecal peritonitis with high mortality has also been reported.¹⁹

In the present study we allowed feeds on 3rd postoperative day. Early oral feeding after major upper gastrointestinal surgery has been suggested by some authors where they concluded that "the reluctance to allow early feed at will is not evidence based".² A randomized clinical trial compared 56 patients of controlled postoperative oral feeding with a fixed regimen of 49 patients after elective abdominal surgery. In the first group median time to resumption of a normal diet was three days. In the second group (fixed regimen) this time was 5 days. The incidence of complications was found to be similar in both groups. The conclusion drawn by the authors was that most patients tolerate normal diet on third postoperative day.²⁰ This correlates well with our study. A meta-analysis of 11 studies with 837 patients revealed that there does not seem to be

clear advantage in keeping patients NPO after elective abdominal surgery and that early feeding may be rather beneficial.²¹ A study from Netherlands has reported loop ileostomy closure without N/G decompression. These patients were allowed oral feeds immediately after surgery. Only one patient leaked, otherwise the results were excellent (08). Out of 50 cases 48 (96%) patient were allowed home on 4th postoperative day. In this way we have not only saved the cost of N/G tube and drain along with their accessories but also reduced the stay in hospital from 7 to 4 days. The two limitations of the study referred to earlier on are that 3 patients who died of the procedure related causes were operated in emergency. Further more, these patients were operated by junior members of the team.

CONCLUSION

Based on this randomized control trial in our local set up; it is recommended that patients who undergo gastric or small bowel anastomosis can safely be managed without N/G decompression. Drainage of peritoneal cavity is not mandatory after gastro intestinal tract surgery. Further more these patient can safely be allowed oral feeds on 3rd postoperative day and if no complications noted then may be allowed home on 4th postoperative day.

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