

Assessment Of Management Of Giant Duodenal Ulcer Perforations With Triple Tube Ostomy

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DOI: 10.47750/pnr.2022.13.S02.55

Abstract

Background: Perforated peptic ulcer (PPU) is a common life-threatening surgical emergency with mortality and duodenum is the commonest site followed by the antrum of the stomach and its lesser curvature. The present study was conducted to assess management of giant duodenal ulcer perforations with triple tube ostomy.

Materials & Methods: 75 patients of giant duodenal ulcer perforations of both genders underwent triple ostomy. Parameters such as time of presentation, length of hospital stay, post-operative complications and outcomes was recorded.

Results: Out of 75 patients, males were 45 and females were 30. The mean time of presentation was 86.2 hours, length of hospital stay was 11.4 days and Oral elementation day (POD) was 7.9. Post-operative complications were burst abdomen seen in 12 and wound infection in 5. Outcome was discharge satisfactorily in 61 and mortality in 14. The difference was significant ($P < 0.05$).

Conclusion: The triple tube procedure is very safe and effective method in management of giant duodenal ulcer.

Key words: giant duodenal ulcer, triple ostomy, stomach

INTRODUCTION

Perforated peptic ulcer (PPU) is a common life-threatening surgical emergency with mortality ranges between 10-40%. Duodenum is the commonest site (60%) followed by the antrum of the stomach (20%) and its lesser curvature (20%) and most perforations were less than 1 cm in diameter.¹ Surgeons rarely encounter an ulcer with a diameter of more than 2 cm which is often considered a giant ulcer. It comprises of only 1-2 % of all duodenal ulcers. Its definition and ideal surgical management are not well established.²

The management of the perforated duodenal ulcer has wide array of options depending upon the size of perforation and the condition of the patient at the time of presentation. The small uncomplicated duodenal perforations as proposed by Taylor can be managed conservatively (observation, nasogastric decompression, antibiotics and IV fluids and nowadays H. Pylori Triple Therapy).³ The classical techniques of primary closure with omentopaxy of the perforation advocated by Cellan Jones in 1929 (Plugging the perforation with pedicled omentoplasty) and Graham in 1937 (Plugging the perforation with free omental plug) are still most widely practised.⁴

A high mortality rate is expected as a giant duodenal ulcer (GDU) typically associates with major duodenal tissue loss, friable edges, and severe surrounding inflammation. A standard definition is warranted as it affects management, prognosis, and facilitates future research.⁵ The present study was conducted to assess management of giant duodenal ulcer perforations with triple tube ostomy.

MATERIALS & METHODS

The present study comprised of 75 patients of giant duodenal ulcer perforations of both genders. All gave their written consent for the participation in the study.

Data such as name, age, gender etc. was recorded. All patients underwent triple ostomy. Exploratory laparotomy was performed through upper midline incision. Triple ostomy was performed after prior Kocherisation and primary closure with modified Graham's technique. The retrograde duodenostomy was performed with 14 Fr Foley catheter at the antimesenteric border about 15 cm distal to the ligament of Treitz. Gastrostomy with 14 Fr Foley catheter was performed. A 10 Fr feeding tube was placed at the antimesenteric border about 10 cm distal to the retrograde duodenostomy as feeding jejunostomy (FJ). Parameters such as time of presentation, length of hospital stay, post-operative complications and outcomes was recorded.

Data thus obtained were subjected to statistical analysis. P value < 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Total- 75		
Gender	Males	Females
Number	45	30

Table I shows that out of 75 patients, males were 45 and females were 30.

Table II Assessment of parameters

Parameters	Mean	SD
Time of presentation (hours)	86.2	12.3
Length of hospital stay (days)	11.4	4.5
Oral elementationday (POD)	7.9	2.1

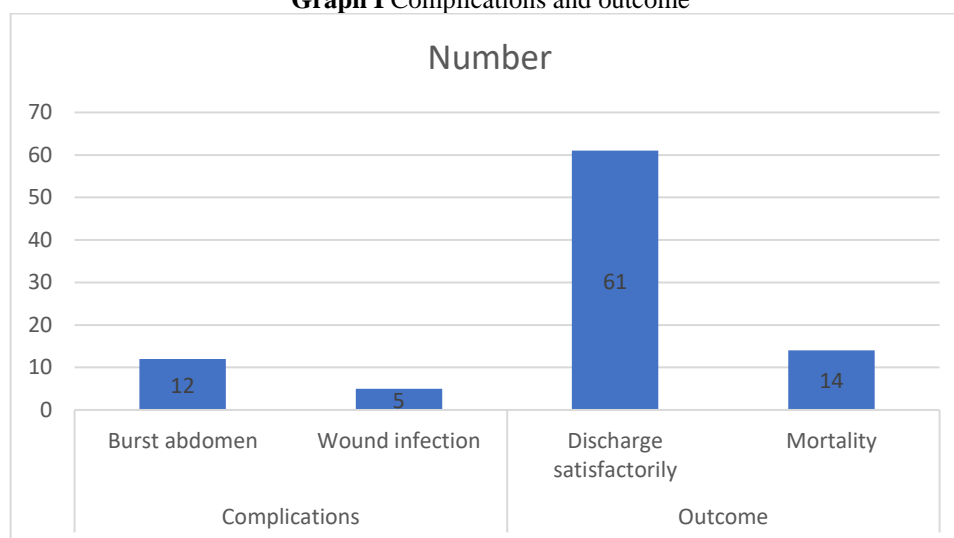
Table II shows that mean time of presentation was 86.2 hours, length of hospital stay was 11.4 days and Oral elementationday (POD) was 7.9.

Table III Complications and outcome

Parameters	Variables	Number	P value
Complications	Burst abdomen	12	0.01
	Wound infection	5	
Outcome	Discharge satisfactorily	61	0.02
	Mortality	14	

Table III, graph I shows that post- operative complications were burst abdomen seen in 12 and wound infection in 5. Outcome was discharge satisfactorily in 61 and mortality in 14. The difference was significant (P< 0.05).

Graph I Complications and outcome



DISCUSSION

The repair of the giant duodenal perforations (≥ 2 cm) is still a matter of debate as these patients are difficult to manage with simple primary closure and omentoplasty because of the following reasons: (a) the size of the ulcer is big, (b) the margins are oedematous and necrotic, (c) there is high intraluminal pressure and (d) the options range from omentopaxy, omental plugging, partial gastrectomy, Jejunal serosa patch, Jejunal pedicled graft, proximal gastrojejunostomy or pyloric exclusion.^{6,7} All these procedures are complex, technically demanding and time consuming.⁸ Moreover, the patients are in poor general condition with hemodynamically instability and/ or may have significant comorbidity. Therefore, they uniformly have high leak rate (>10 %) and high mortality rate (10– 65 %).^{9,10} The present study was conducted to assess management of giant duodenal ulcer perforations with triple tube ostomy.

We found that out of 75 patients, males were 45 and females were 30. The mean time of presentation was 86.2 hours, length of hospital stay was 11.4 days and Oral elementationday (POD) was 7.9. Ali et al¹¹ in their study hemodynamically unstable patients who have presented to the emergency with preoperative diagnoses of giant duodenal ulcer perforation and had undergone triple tube ostomy with primary repair of the perforation were included in the study. There were 34

patients of giant duodenal perforation who presented in shock. All of them underwent triple-tubeostomy after primary repair of the duodenum. Thirty-two patients recovered with two mortalities (5.8 %)

We observed that post-operative complications were burst abdomen seen in 12 and wound infection in 5. Outcome was discharge satisfactorily in 61 and mortality in 14. Fujikuni Net al¹² performed the cholecystectomy and inserted the C tube through the cystic duct for biliary drainage, a retrograde duodenostomy and a feeding jejunostomy was done following duodenorrhaphy.

Crippa S¹³ proposed the use of the double tube. He inserted two nasogastric tubes (NGT) one drained the stomach and another one was negotiated to the II or III part of the duodenum bypassing the duodenal perforation which was then closed. The NGT were then fixed at the external nares. The triple tube procedure works on the principle of the damage control surgery. The patient after adequate resuscitation is taken for surgery. The retrograde duodenostomy decompresses the duodenum by acting as the controlled fistula. The gastrostomy drains the gastric juices and the bile refluxed into the stomach thereby decreasing the load of secretions passing through the duodenum.

Gujar et al¹⁴ found that in 18 patients of Omental plugging 14 (66.66%) were in the age group of 41-50 years, 4 (33.33%) were in the age group of 51-60 years and 9 (50%) were more than 60 years of age while in 18 patients of controlled tube duodenostomy, 14 (77.77%) were in the age group of 41-50 years and 4 (22.23%) were in the age group of 51-60 years. In the overall present study 16 (44.44%) patients had the perforation less than 48 hours while 20 (55.55%) patients had more than 48 hours. In Omental plugging they had 6 (33.33%) patients had perforation less than 48 hours, 12 (66.66%) had perforation more than 48 hours while in controlled tube duodenostomy 10 (55.56%) patients had perforation less than 48 hours and 8 (44.44%) had more than 48 hours.

The limitation the study is small sample size.

CONCLUSION

Authors found that the triple tube procedure is very safe and effective method in management of giant duodenal ulcer.

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