Gallbladder: An Anatomical Option for Giant Duodenal Ulcer Perforation; When Omental Patch closure Alone Not Feasible - A Case Report

Jayakumar Palanisamy*, Karunakaran Kathiresan, Vijaykannan Shanmugam, Kamil Syed Ahamad, Thangapandi Murugesan and Fazil Navabjan
Department of General Surgery, Sivagangai Medical College, Sivagangai, India - 630561

Introduction

Giant duodenal ulcer (GDU) perforation is the perforation size of more than 2 Centimeters (cms), which is frequently closed by omental patch closure or omental plugging [1]. Other proved procedure is Cholecystoduodenoplasty or cholecystoduodenostomy done by anastamosing fundus of the gallbladder with the trimmed edges of the duodenal perforation [2]. Here we did a slight modification by simply patching the anatomical gallbladder which was lying over the perforated duodenum and the remaining uncovered perforation by using live omental patch closure.

Case Report

A 55-year-old male came with complaints of abdominal pain for 10 days and history of obstipation for 3 days. He is not a known peptic ulcer disease patient, but a known analgesic abuse patient for his myalgia. History of (h/o) self-medication for the abdominal pain for the last 10 days present. No h/o fever, chills or rigor. No other associated illnesses were positive as per the history narrated by him. Clinical examination revealed abdominal distension and diffuse tenderness all over the abdomen. There was no typical guarding or rigidity in the abdomen. Further investigations revealed acute renal failure with blood urea 178 mg/dl and creatinine 2.1 mg/dl. Other investigations like blood sugar, hemoglobin, electrolytes, and serum proteins were normal except leukocytosis. Contrast enhanced computed tomography revealed perforative peritonitis. Emergency laparotomy done and 3*2 cms size giant perforation of the first part of duodenum identified (Figure 1). Size of the perforation

Abstract

Giant duodenal perforation is rare nowadays, but the mortality and morbidity are high even with improved health care technologies. Here we report a case of giant duodenal ulcer perforation, which was managed with gallbladder as an anatomical sealer with omental patch closure.

Figure 1: Showing GDU perforation in 1st part of duodenum.
increased to 5*2 cms (Figures 2a and 2b) while preparing for live omental patch closure by mobilising gallbladder which was adherent to the duodenal wall. Reactive peritoneal fluid of 2 liters was removed and thorough wash was given by using luke warm saline.

Plan of live omental patch closure will produce plugging effect on the duodenal lumen and the alternative plan of jejunal loop patch closure likely to produce kinking of the jejunal loop, so lateral part of the perforation which was extended during gallbladder mobilization was closed using gallbladder body which was adherent previously by using 3’0 vicryl sutures and medial part was closed using live omental patch by using the same sutures (Figures 3a and 3b).

Post-operatively patient developed bile leak of 500ml on the first postoperative day, which settled on the next day itself. Patient recovered well and his renal parameters were back to normal.

We planned for oesohagogastro-duodenoscopy (OGD) and contrast enhanced computed tomography (CECT) after three months of postoperative period for planning further definitive treatment. But after two months of postoperative follow-up patient not turned back.

### Discussion

Current options for the management of GDU perforation are simple closure, omental patch closure or omentopexy, omental plugging, Cholecystoduodenostomy, Tribble-tubeostomy and Jejunal loop patch closure [1-5].

Cienfuegos, et al. described a method by doing subtotal gastrectomy and closure of the GDU with the help of remaining antrum, which can be another procedure among the list of armamentarium [6].

Conservative method by doing peritoneal dialysis, gastric aspiration and other supportive measure may be a choice in small gastroduodenal ulcer perforations, but not in the giant ulcer perforation [7].

The above mentioned procedures are helpful in acute cases of perforation. Nussbaum, et al. claimed definitive procedures like vagotomy, antrectomy and drainage procedures are needed in emergency cases or later date as elective procedure [8].

Tsugawa et al study on gastroduodenal ulcer perforations above the age of 70 years points the simple closure with vagotomy as best approach in terms of mortality compared to simple closure alone. Cumulative recurrence at fifth year is high in simple closure group compared to gastrectomy group [9]. But the complications related to peptic ulcer disease are coming down with the H2-receptor antagonists and proton pump inhibitors (PPI) [10,11].

In our case we did perforation closure laterally by using gallbladder and medially by omentum as a combination. We didn’t do vagotomy or any other definitive procedure to reduce the anesthesia time. Possibility of cholecystoduodenal fistula cannot be ruled out in our case, so cholecystectomy with definitive procedure in later date will be a disadvantage of our approach. Limitation of our approach is, the above-mentioned procedure is possible when gallbladder is healthy, freely mobile and over the perforation site. As the patient lost to followup after two months, our plan of delayed definitive procedure or followup endoscopy or imaging is not possible.

### Conclusion

Our case signifies gallbladder as an anatomical option for giant duodenal ulcer perforation when there are no other choices fit in to a particular case. So we suggest, In the case of perforated giant duodenal ulcer, the chosen therapeutic solution may be a therapeutic option.

### References

1. Jani K, Saxena AK, Vaghasia R. Omental plugging for large-sized duodenal


