

An Unusual Site of Perforated Duodenal Ulcer - A Cadaveric Case Report

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Abstract

Case Report

Perforated duodenal ulcer is a complication of peptic ulcer disease which carries a high risk for morbidity and mortality. Duodenal ulcers are usually seen in the 1st part of duodenum. The authors of present case report have found an unusual site of perforated duodenal ulcer at postero-medial wall of 2nd part of the duodenum, immediately above and medial to the major duodenal papilla, in an adult male cadaver at Department of Anatomy, ESIC Medical College, Sanathnagar, Hyderabad, TS, India. The perforation measured 1.25cm in length and 1cm in width. There were significant radiating mucosal folds around the perforation which is a sign of mucosal ulcer. No other gastro-intestinal lesions or anomalies were observed in the same cadaver. Duodenal perforation releases the gastro-duodenal contents into peritoneal cavity which results in peritonitis. Early diagnosis, proper resuscitation and rapid surgical interventions are crucial in improving the outcome.

Key words: Duodenum, Peptic ulcer disease, Major duodenal papilla, Peritonitis, Duodenal ulcer.

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INTRODUCTION

Peptic ulcer disease (PUD) results from the peptic digestion of devitalized mucous membrane with the assistance of HCL. The duodenum has 4 parts and all the parts are retro-peritoneal except, proximal part of the first part and fourth part of the duodenum. First part of duodenum is vulnerable to the formation of peptic ulcer, since it is supplied by a series of end arteries. An ulcer of the anterior wall of first inch of the duodenum may perforate into the upper part of the greater sac, above the transverse colon which directs the fluid into the right iliac fossa. In such case the differential diagnosis between a perforated peptic ulcer (PPU) and a perforated appendix may be difficult. An ulcer of the posterior wall of first part of the duodenum may penetrate the wall and erode the relatively large gastroduodenal artery, causing a severe haemorrhage. Second, third, fourth parts of duodenum are least affected by mucosal ulcers. However, in the present

case report addressing an unusual location of perforated duodenal ulcer at postero-medial wall of 2nd part of the duodenum. Helicobacter pylori, stress, smoking, past history of PUD, Non-steroidal anti-inflammatory drugs (NSAIDs) are the risk factors for perforated duodenal ulcer. Recurrence of ulcer is not uncommon if risk factors are not identified. Perforated duodenal ulcer is a surgical emergency which is associated with high mortality when left untreated.

CASE REPORT

The authors of present case report have observed all the parts of duodenum for their external features from anterior view (Figure 1) and also from the posterior view, in an adult male cadaver during routine dissection of abdominal viscera at Department of Anatomy, ESIC Medical College, Sanathnagar, Hyderabad, TS, India, in 2018-19 academic year.

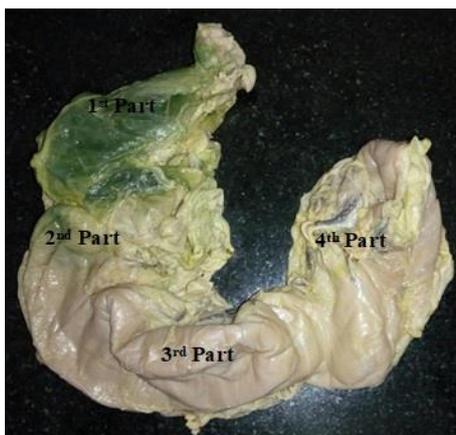


Fig-1: Anterior view of the Duodenum

The authors found a perforation at postero-medial wall of 2nd part of the duodenum which was located immediately above and medial to the major duodenal papilla (Figure 2) in the interior of 2nd part of duodenum.



Fig-2: Interior of 2nd part of the Duodenum with perforation

(Red color arrow- Major duodenal papilla; Yellow color arrows- Radiating mucosal folds)

The perforation measured about 1.5cm in length and 1cm in width. There were significant radiating mucosal folds around the perforation which is a classical sign of mucosal ulcer. The location of the perforation was close to the arterial arcades supplying the duodenum and head of the pancreas. Even though, the perforation seems to be separated by a fascial pouch from the adjacent structures, the arteries are likely to be involved as they are in close proximity to the ulcer perforation. The anterior wall of 2nd part of duodenum was clear with any mucosal ulceration; similarly, the other parts of duodenum were also not showing any mucosal ulceration or perforation. No other gastrointestinal lesions or anomalies were observed in the same cadaver.

DISCUSSION

The present case report is unusual in its atypical location in the duodenum. Previous author Simon Mbarushimana has mentioned in his case report that, the diagnostic laparoscopy for a severe lower abdominal pain revealed a 0.5cm perforation in the anterior wall of the first part of the duodenum [1].

Perforation occurs in 2-10% of patients and accounts for more than 70% of deaths due to PUD [2]. Perforated duodenal ulcer will lead to server abdominal pain and signs of peritonitis. Demographic differences in age, gender, location of perforation and aetiology should be considered in making a diagnosis. According to a previous study, only about a third of patients with perforated peptic ulcer have a previous history of peptic ulcer at time of diagnosis [3]. Previous author Kin Tong Chung has mentioned in his literature that the classic triad of sudden onset of abdominal pain, tachycardia and abdominal rigidity is the hallmark of perforated peptic ulcer [4]. A previous study concluded that an abdominal CT scan should be taken without hesitation for diagnosing PPU [5]. Outcome of surgical treatment of perforated peptic ulcers should be effective and life-serving with less mortality and morbidity. A previous study mentioned that, Graham's omental patch of PUD perforations remains a surgical procedure of choice in most centres [6]. Sometimes a perforated duodenal ulcer shows self-sealing, in such instances, nonsurgical therapy can be pursued [7]. In the present case report the surgical treatment should focus not only on the

closure of perforation, but also in avoiding the damage to intramural course of Ampulla of Vater.

CONCLUSION

The commonest site for the occurrence of perforated duodenal ulcer being the first part of duodenum. However, abnormal location of duodenal ulcer perforations should be kept in view, as it is the 2nd part of duodenum in the present case report, to avoid the misdiagnosis. Delayed diagnosis of perforated duodenal ulcer located at an unusual site can lead to serious complication like hemodynamic shock which may result in death of the patient. Early diagnosis, proper resuscitation and rapid surgical interventions are crucial in improving the outcome.

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