

The conservative management of a perforated duodenal ulcer in a morbidly obese patient

E. Gilkinson^{1,2}, G. Orsi^{1,2}, E. McCarthy³, A. Mastrosimone^{1,2}

1. Department of General Surgery, Connolly Hospital Blanchardstown, Dublin 15, Ireland.
2. RCSI Hospital Group, Connolly Hospital Blanchardstown, Dublin 15, Ireland.
3. Department of Radiology, Connolly Hospital Blanchardstown, Dublin 15, Ireland.

Abstract

Presentation

A 46-year-old morbidly obese gentleman presented to the emergency department with acute onset chest and epigastric pain. He denied any nausea, vomiting or changes in bowel habit. His medical history included severe obesity, peripheral vascular disease, osteoarthritis and hypertension. The patient did admit to being a heavy smoker and regularly consumed alcohol.

Diagnosis

Abdominal CT scans confirmed the presence of a perforated duodenal ulcer. Subsequent CT's demonstrated a continuous rise of fluid within the patient's abdomen.

Treatment

Due to his high BMI, it was decided by the surgical team that he would be best treated conservatively with antibiotics and IR guided drainage. Following his course of treatment, resolution of the ulcer was demonstrated on CT and endoscopy. A year after discharge the patient persisted without complications.

Discussion

This case highlights that the conservative management of a perforated peptic ulcer can be implemented in select cases with early surgical input.

Introduction

Peptic ulcer disease (PUD) affects between 5-10% of the general population with an incidence of 0.1-0.3% per year^{1,2}. Although there has been a reduction in the number of hospital admissions and mortalities over recent decades, complications have still occurred in 10-20% of patients with PUD³. These complications include perforation, bleeding and

obstruction from chronic fibrosis. Although not as common as a bleeding ulcer, perforation remains the most common indication for emergency surgery, being the cause of 40% of all ulcer-related deaths ⁴.

Case Report

A 46-year-old overweight man presented to the ED complaining of acute onset pain in his central chest and epigastric region. He exhibited shortness of breath but had no other associated symptoms. His medical history included severe obesity (BMI 53), peripheral vascular disease, osteoarthritis and hypertension. He had no previous surgical history. The patient smoked 25 cigarettes a day and drank beer up to 3 days a week.

On exam, he was vitally stable and his abdomen was tender on palpation, mostly at the epigastrium. There was no evidence of rebound tenderness and bowel sounds were present on auscultation.

A CT pulmonary angiogram demonstrated no evidence of a PE but imaging did display a pneumoperitoneum (Fig. 1). The ED staff subsequently booked a CT abdomen pelvis (CTAP) with IV contrast. This demonstrated small extraluminal, loculated gas in the abdomen and fat stranding surrounding the antrum, signs indicative of a perforated ulcer.

The patient was admitted, kept NPO, an NG tube was inserted and the surgical team were contacted. Taking into consideration the challenges associated with his high BMI and comorbidities, it was opted that he would be best treated conservatively. This was also influenced by the fact that the patient was also haemodynamically stable on review and was not peritonitic. He was given an 80mg stat dose of PPI before being commenced on a PPI infusion, 8mg/hr. Analgesia, IV fluids and broad spectrum antibiotics were also administered. Antifungal cover was recommended by microbiology. A central line was ordered for the administration of TPN and daily bloods were scheduled to assess his progression.

Four days after his admission, a repeat CTAP with oral contrast was completed to further assess if there was any active extravasation of contrast. This showed increased peritoneal fluid when compared to the previous scan, but with no active extravasation of oral contrast, suggesting the development of an intra-abdominal collection (Fig. 2).

A CT with contrast was carried out 6 days later, after a sudden increase in both CRP and WCC. A rise in the volume of extraluminal gas and fluid collections within the abdomen was noted (Fig. 3). US guided insertion of a pigtail catheter was done to drain the intraperitoneal fluid.

An oesophago-gastro-duodenoscopy identified a D1 1cm diameter healed ulcer with adequate granulation tissue noted at the base (Fig. 4). No active leak was seen from the drains following the injection of methylene dye via NG tube.

Subsequent CTs showed a progressive reduction in the size of the abdominal collection (Fig. 5, 6). Output from his drain tapered off and was therefore removed. The patient was discharged home a total of 42 days following his admission.

Discussion

Non-operative management of a perforated peptic ulcers can be opted over surgery in select cases, as it avoids the associated morbidities. In small perforations, omental adhesions seal the ulcer, allowing it to heal – often not requiring direct treatment of the peritonitis ⁵. In 2004, Songne et al. carried out a prospective trial involving 82 patients with perforated peptic ulcers. Improvement was seen in 54% of the patients treated conservatively. Factors independently relating to successful non-operative management was found to include stable vital signs and the size of pneumoperitoneum ⁶, also including the available resources and team expertise ⁷.

It was decided from an early stage our patients perforated ulcer would be best managed conservatively. His very high body mass index made surgery, either open or laparoscopic, a high risk alternative. Eliecer Kurzer et al. states that the risk of a significant complication occurring when performing laparoscopic surgery on obese patients increases by 14% with every unit increase in BMI. One of these complications being the conversion to an open procedure ⁸, and this again carries further morbidity risks in overweight patients including fascial dehiscence, total wound failure and cutaneous wound healing impairment ⁹.

Figures

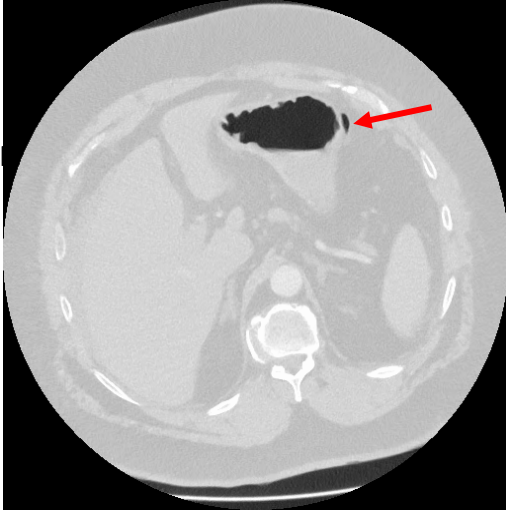


Figure 1: CTPA which demonstrated several extra luminal intra peritoneal locules of gas in the right subphrenic space. A locule of gas is also identified adjacent to the stomach body as above by arrow



Figure 2: CTAP with oral contrast showing increased pneumoperitoneum

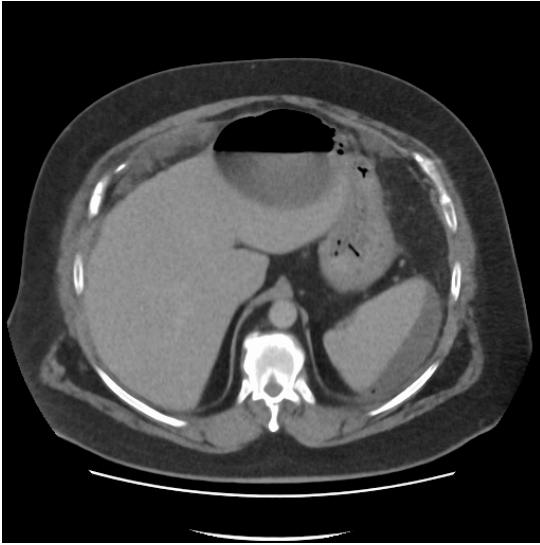


Figure 3: CTAP with contrast demonstrates interval maturation of an anterior abdominal collection indenting the left lobe of liver.



Figure 4: OGD showing healed D1 ulcer

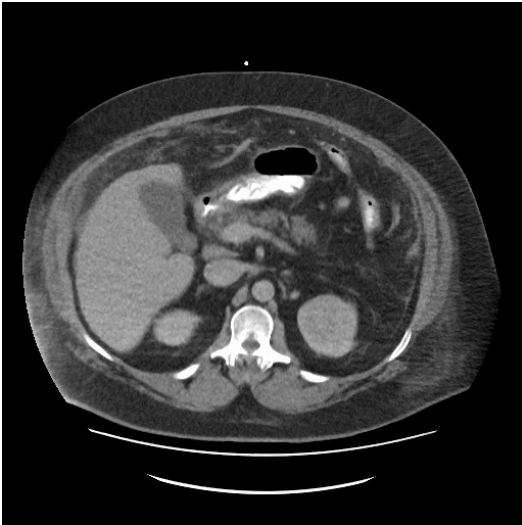


Figure 5 - CTAP with on the table PO contrast with no evidence of leak

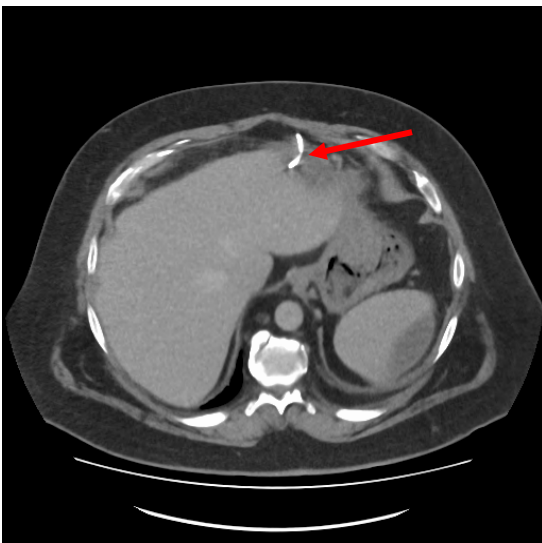


Figure 6 - Final CTAP with decrease in size of abdominal collection. Note pigtail catheter in situ, indicated by arrow

Declarations of Conflicts of Interest:

None declared.

Corresponding author:

Ethan Gilkinson,
Department of General Surgery,
Connolly Hospital Blanchardstown,
Dublin 15,
Ireland.

E-Mail: ethangilkinson@rcsi.ie

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