

UNEXPECTED INTRAOPERATIVE DISCOVERY OF A RARE CHRONIC SEALED DUODENAL PERFORATION DURING CHOLECYSTECTOMY: A CASE

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ABSTRACT:

Background: Perforated peptic ulcer remains one of the commonest surgical emergencies worldwide. However, chronic sealed perforation of the duodenum is an uncommon clinical entity because spontaneous sealing by the greater omentum prevents generalized peritonitis and often masks the diagnosis. Incidental identification of a chronic sealed duodenal perforation during elective cholecystectomy is exceedingly rare and scarcely described in the literature.

Case Presentation: A [43]-year-old [female] presented with recurrent right upper quadrant pain suggestive of symptomatic cholelithiasis. Ultrasonography confirmed gallstones without evidence of perforation or pericholecystic collection. Elective cholecystectomy was planned.

During surgery, dense inflammatory adhesions were encountered between the gallbladder, liver, greater omentum, and first part of the duodenum. Careful adhesiolysis unexpectedly revealed a chronic sealed perforation on the anterior wall of the first part of the duodenum, completely covered by adherent omentum. Cholecystectomy was completed safely, and the duodenal perforation was repaired by primary closure reinforced with a Graham's omental patch. Copious peritoneal lavage and drain placement were performed.

The postoperative period was uneventful, and the patient was discharged in stable condition.

Clinical Discussion: Dense inflammatory adhesions extending beyond the gallbladder fossa should alert surgeons to the possibility of occult pathology involving adjacent organs. Chronic sealed duodenal perforation may mimic severe chronic cholecystitis, making intraoperative diagnosis challenging. Careful adhesiolysis and systematic exploration are essential to avoid iatrogenic injury.

Conclusion: This case illustrates an extremely rare intraoperative diagnosis of chronic sealed duodenal perforation during cholecystectomy. Prompt recognition and repair using Graham's omental patch resulted in an excellent outcome.

KEYWORDS: Cholelithiasis, Chronic sealed duodenal perforation, Graham's patch, Cholecystectomy, Rare case, Adhesions.

INTRODUCTION

Gallstone disease is among the commonest indications for elective abdominal surgery. Difficult cholecystectomy is frequently encountered in patients with chronic inflammation, previous attacks of cholecystitis, or severe fibrosis.

Conversely, perforated duodenal ulcer usually presents as an acute surgical emergency characterized by severe abdominal⁵ pain, pneumoperitoneum, and generalized peritonitis. Occasionally, the perforation becomes sealed by the greater omentum, limiting contamination and resulting in chronic localized inflammation. Such patients may remain clinically stable and present without classical symptoms.

The coexistence of chronic sealed duodenal perforation with symptomatic cholelithiasis is extremely uncommon. Even rarer is its incidental intraoperative diagnosis during elective cholecystectomy. To our knowledge, only a limited number of similar cases have been reported. We present this rare case to emphasize the importance of maintaining a high index of suspicion when dense adhesions involve the duodenum during gallbladder surgery.

Case Presentation

A [43]-year-old [female] presented with intermittent right hypochondrial pain for [duration]. The pain was aggravated after meals and was associated with nausea but no history of jaundice or pancreatitis.

The patient denied sudden onset severe abdominal pain suggestive of acute perforation. There was no history of

chronic NSAID abuse or previous upper gastrointestinal surgery.

On examination, vital signs were stable.

Routine hematological and biochemical investigations were within normal limits.

Ultrasonography demonstrated multiple gallstones with features of chronic calculous cholecystitis. The common bile duct was normal.

The patient was planned for elective cholecystectomy.

Operative Findings

Following abdominal entry, extensive inflammatory adhesions were observed involving:

Gallbladder

Liver bed

Greater omentum

First part of the duodenum

The anatomy of Calot's triangle was markedly distorted.

Careful sharp and blunt adhesiolysis was performed.

Unexpectedly, a chronic sealed perforation measuring approximately [0.5] cm was identified on the anterior wall of the first part of the duodenum.

The perforation was completely covered by adherent omentum with no free contamination.

The gallbladder was densely adherent to the liver bed and was carefully dissected.

Critical View of Safety was achieved.

Cholecystectomy was completed successfully.

The duodenal perforation was closed with interrupted 2-0 absorbable sutures.⁶

A pedicled omental patch was placed over the repair (Graham's patch).²

The abdomen was irrigated with warm normal saline.

A closed suction drain was placed adjacent to the repair.

Postoperative Course

The patient remained hemodynamically stable.

Intravenous antibiotics, proton pump inhibitors and analgesics were administered.

Nasogastric decompression was continued until bowel sounds returned.

Oral liquids were started on postoperative day [3].

Drain output remained minimal.

The patient was discharged on postoperative day [10].

Histopathology confirmed chronic calculous cholecystitis.



DISCUSSION

Perforated peptic ulcer affects approximately 2–10% of patients with peptic ulcer disease and remains associated with significant mortality despite advances in surgical care.

The greater omentum is often referred to as the "policeman of the abdomen" because of its ability to migrate and seal sites of perforation. In rare situations, complete sealing prevents diffuse peritonitis and converts an acute perforation into a chronic inflammatory lesion.

Our patient presented only with symptoms attributable to gallstone disease. Neither clinical examination nor imaging suggested duodenal perforation. The diagnosis was established solely because meticulous adhesiolysis was performed.

The dense adhesions involving the gallbladder and duodenum created a difficult operative field. Failure to recognize the underlying pathology could have resulted in inadvertent duodenal injury or postoperative leakage.

Graham's omental patch remains the standard treatment for small perforated duodenal ulcers because it is technically simple, reliable, and associated with excellent outcomes.² The current World Society of Emergency Surgery guidelines continue to recommend this technique.

This report underscores an important surgical lesson: severe adhesions extending beyond the gallbladder should prompt careful evaluation of adjacent organs rather than assuming chronic cholecystitis alone.

CONCLUSION

Incidental chronic sealed duodenal perforation discovered during elective cholecystectomy is an exceptionally rare surgical finding.

Meticulous adhesiolysis, sound anatomical knowledge, and careful intraoperative decision-making allowed successful completion of cholecystectomy together with definitive repair of the perforation.

Reporting such rare cases enriches surgical literature and reminds surgeons to consider unexpected pathology when operating in a hostile upper abdomen.

Learning Points

- Dense adhesions around the duodenum require meticulous dissection.
- Omental sealing can completely mask chronic duodenal perforation.
- Unexpected pathology should always be considered during difficult cholecystectomy.
- Graham's patch remains a safe and effective repair.
- Careful surgical judgment prevents major complications.

Patient Perspective

The patient recovered well after surgery, resumed normal oral intake, and expressed satisfaction with the treatment. Appropriate counseling regarding peptic ulcer disease, proton pump inhibitor therapy, and *Helicobacter pylori* eradication was provided.

Ethics

Written informed consent was obtained from the patient for publication of this case report and intraoperative photograph.

Conflicts of Interest

The authors declare no conflicts of interest.

Funding

None.

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Highlights

- Rare incidental chronic sealed duodenal perforation discovered during elective cholecystectomy.
- Dense adhesions involving gallbladder, liver, omentum and duodenum obscured the diagnosis.
- Omental sealing prevented generalized peritonitis and classical clinical presentation.
- Successful simultaneous cholecystectomy and Graham's omental patch repair.
- Emphasizes meticulous adhesiolysis during difficult gallbladder surgery.

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