

Migration of metal clips into the duodenum after laparoscopic cholecystectomy: A report of two cases

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Abstract

Migration of metal clips into the duodenum after laparoscopic cholecystectomy is rare. We herein present two cases of migration of metal clips into the duodenum in patients who developed upper quadrant discomfort and a poor appetite after laparoscopic cholecystectomy. Gastroscopy revealed metal clips in the duodenum. In one patient, the clip dropped from the duodenum after 2 months; the other patient went to another institution to undergo duodenotomy. The mechanism underlying migration of a metal clip into the duodenum remains unclear but might be related to chronic inflammation and duodenal peristalsis. In conclusion, clinicians must remember that metal clips can migrate after laparoscopic cholecystectomy and later cause complications.

Keywords

Laparoscopic cholecystectomy, migrate, metal clip, duodenum, case report, duodenotomy

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Introduction

Laparoscopic cholecystectomy has now become the procedure of choice for gall-bladder removal. Potential complications of laparoscopic cholecystectomy include bile leakage, hemorrhage, bile duct injury, and sepsis. Migration of metal clips into the

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duodenum is a very rare complication. We herein report two cases of migration of metal clips into the duodenum that caused later complications after laparoscopic cholecystectomy. These cases are reported to aid clinicians in the rapid diagnosis and timely management of this rare but important complication.

Case reports

Case 1

A 56-year-old woman presented with a several-month history of left upper quadrant discomfort and a poor appetite. Her medical history included laparoscopic cholecystectomy due to chronic cholecystitis performed 3 years previously. Physical examination revealed moderate tenderness in the upper quadrant. Gastroscopy revealed a metal clip in the duodenum (Figure 1). The clip was about to drop from the duodenum; therefore, we did not remove the clip surgically or gastroscopically. Two months later, gastroscopy revealed that the metal clip had dropped.



Figure 1. Gastroscopy showing a closed metal clip in the duodenum. The tail of the clip is visible.

Case 2

A 59-year-old woman who had undergone laparoscopic cholecystectomy 1 year previously was admitted for investigation of a 1-week history of middle upper quadrant pain. Laparoscopic findings revealed an acutely inflamed, thick-walled gallbladder with surrounding pus. The patient's postoperative course was uneventful. Gastroscopy revealed two metal clips in the duodenum (Figure 2). The patient went to another institution to undergo duodenotomy. After the operation, she became asymptomatic. Unfortunately, the patient died of depression-induced suicide 3 months after the operation.

This study was approved by the ethics committee of the People's Hospital of Zhujiaji. Both patients provided written informed consent.

Discussion

Metal clips are widely used during laparoscopic cholecystectomy. Such clips can migrate into the common bile duct and cause related complications such as stone formation, acute biliary pancreatitis, cholangitis, obstructive jaundice, and others.¹ Migration of metal clips into the duodenum is a rare



Figure 2. Gastroscopy showing two metal clips in the duodenum.

complication. Yu et al.² first reported the migration of metal clips into the duodenum after laparoscopic cholecystectomy in 1997. A few cases of migration of metal clips into the duodenum after laparoscopic cholecystectomy have also been reported.²⁻⁴

The mechanism underlying how a metal clip migrates into the duodenum remains unclear. It can be hypothesized that these metal clips are involved in chronic inflammation. Controlled studies have shown that these clips are capable of inducing a foreign body inflammatory response.⁵ When a metal clip adheres to the duodenal wall, the wall becomes eroded or inflamed because of the localized inflammatory response around the clip. Duodenal peristalsis causes the metal clip to finally penetrate the duodenum wall. Gastroscopy and computed tomography can be helpful for diagnosis of migration of metal clips into the duodenum after laparoscopic cholecystectomy, and gastroscopy is confirmatory.

Complications associated with migration of metal clips into the duodenum include peptic ulcers and choledochoduodenal fistulas.³ If the patient has no serious complications, duodenotomy or endoscopic removal of the metal clip is unnecessary. Duodenal peristalsis may cause the migrated metal clip to spontaneously dislodge from the duodenal wall, as in Case 1 of the present report. However, if further complications such as bleeding, choledochoduodenal fistula, perforation, or intractable pain occur, surgery is necessary. Photographic evidence of the correct clip placement and retrieval of any clips dropped during laparoscopic cholecystectomy are recommended to avoid or reduce the migration of these clips.

Conclusion

This report adds to the small body of evidence regarding the migration of metal clips

after laparoscopic cholecystectomy. It is important to remember that metal clips may migrate and cause later complications after surgery. These two case reports suggest that any clips dropped during laparoscopic cholecystectomy should be retrieved.

Declaration of conflicting interests

The authors report that there is no conflict of interest.

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