

A 37-Year-Old Schizophrenic Woman With Abdominal Pain

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ABSTRACT

INTRODUCTION: Internal fistula across the posterior wall of stomach and the transverse colon caused by foreign bodies in the alimentary tract presents an extremely rare medical entity.

PRESENTATION OF CASE: We report an aschizophrenia female patient with onset of internal fistula across the posterior wall of stomach and the transverse colon triggered by swallowed magnetic metal beads. The patient was admitted to the emergency room of Northern Jiangsu People's Hospital because of acute right lower abdominal pain. Emergency routine abdominal CT scan revealed acute appendicitis and a set of foreign body in digestive tract.

DISCUSSION: The foreign body in the stomach was removed by open surgery after tentative Endoscopic foreign body removal and laparoscopic appendectomy and exploration. In the process of exploring the gastric wall, it was found that one of magnet beads was embedded in the posterior wall of stomach and adhered to part of the transverse colon. After separation, it was found that an internal fistula was formed across the posterior wall of stomach and the transverse colon. As the patient ate only a small amount of food within 2 days, and the intestines were in good condition, we performed partial transverse colectomy, end-to-side anastomosis and gastric wall repair.

CONCLUSION: This case shows that for long-term foreign bodies in the digestive tract, we should be beware of the onset of gastrointestinal perforation. Moreover, perforation caused by the force acting on a blunt foreign body often results in atypical imaging findings, and the diagnosis of perforation cannot be clearly determined by imaging findings such as the presence of free gas downstream of the diaphragm. This poses new challenges for clear diagnosis and treatment.

KEYWORDS: Internal fistula, acute appendicitis, magnet bead, colon anastomosis

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Introduction

Internal fistula across the posterior wall of stomach and the transverse colon caused by foreign bodies in the alimentary tract presents an extremely rare medical entity. The cause of internal fistula between the transverse colon and stomach has been reported in ulcerative colitis, transverse colon cancer and iatrogenic injury, but not in foreign bodies.¹⁻³ We report a female patient with aschizophrenia who developed an internal fistula through the posterior wall of the stomach and the transverse colon caused by swallowing magnetic metal beads. The patient presented to the emergency department of Northern Jiangsu People's Hospital with acute right lower abdominal pain. A routine emergency abdominal CT scan revealed acute appendicitis and a number of foreign bodies in the digestive tract. Laparoscopic appendectomy and gastroscopy were performed simultaneously by the surgeon and gastroenterologist.

Under gastroscope, it was found that the bead bands were formed by magnetic metal beads and difficult to remove under endoscope. After undergoing laparoscopic appendectomy, we conducted a detailed laparoscopic exploration of the suspected perforated gastric wall and found that the magnetic beads embedded in the gastric wall were abnormally swollen and adhered to the adjacent transverse colon with congestion and edema. In this case, it is possible that the transverse colon also undergoes perforation and forms an internal fistula with the perforated gastric wall. The laparoscopic repair of perforation and removal of magnetic were faced with technical difficulties. Therefore, the foreign body in the stomach was removed by open surgery after laparoscopic appendectomy. During exploration of the stomach wall, it was found that a magnetic bead was embedded in the posterior wall of the stomach and adhered to part of the transverse colon. After separation, it was found



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that an internal fistula had formed across the posterior wall of the stomach and the transverse colon. As the patient ate only a small amount of food within 2 days and the bowel was in good condition. The patient underwent partial transverse colectomy, end-to-side anastomosis and gastric wall repair. The patient recovered well after surgery. This case shows that with long-term foreign bodies in the digestive tract, we should be aware of the development of gastrointestinal perforation.

Case Presentation

A 37-year-old Chinese woman was admitted to the Emergency Department of Northern Jiangsu People's Hospital, Yangzhou, China, with a 2-day history of persistent abdominal pain in the right lower quadrant. The patient had a history of mental disorder and was unable to provide an accurate description of her condition, so the history was provided by the patient's mother. The patient developed intermittent lower abdominal pain 1 day ago, which worsened and was localized to the right upper quadrant. After the aggravation of the abdominal pain, the patient developed delirium. This situation had attracted the attention of the patient's family members, and her mother sent the patient to the hospital for urgent care. According to the patient's family member, the patient was diagnosed with schizophrenia in 2004 and received systematic treatment in the local psychiatric hospital in 2004 and 2012, but the specific treatment plan and the course of treatment are not known (for reasons of confidentiality). She has been taking one tablet of quetiapine fumarate (300 mg) intermittently every night since her discharge from the asylum. Although the patient's schizophrenia was well controlled most of the time, the irregularity of the medication caused the patient to have occasional severe psychotic episodes. On several occasions, she attempted suicide and self-mutilated. On one occasion, the patient jumped from a height, resulting in fractures of the pelvis, spine and tibial plateau, and the patient recovered well after open reduction and internal fixation of the fracture. This explained the presence of multiple internal fixation devices in her body. The patient's family member denied any other pre-existing medical conditions or any particular family history.

Preliminary physical examination revealed that the patient had right lower abdominal tenderness with rebound pain. A diagnosis of acute appendicitis was considered. We then measured the patient's axillary temperature, which reached 38.2°C, and took blood samples for laboratory analysis. The results of the laboratory analysis are shown in Table 1. The patient underwent a routine CT scan, which revealed acute appendicitis (Figure 1A). In addition, a bead-like high-density opacity was observed in the left upper diaphragmatic area, and intramedullary nail fixation in the lumbar vertebrae was observed in the lower abdomen (Figure 1B). In addition, some of the intestines were distended and filled with gas and fluid, with some exudation around them and a slight thickening of the cardia wall of the stomach. The patient denied having

swallowed a foreign body. To find out the cause of the patient's foreign body, we asked the family members for detailed information: whether the patient had a history of pica, a history of deficiency of trace elements such as vitamins or iron, or a history of swallowing foreign bodies associated with uncontrolled schizophrenia. The patient's family members denied the above and said they did not know that the patient had swallowed a number of foreign bodies. Patients with foreign body perforation usually cannot remember ingesting foreign body, let alone schizophrenics.^{4,5} Besides, due to the nonspecific clinical manifestations, colonic perforation is seldom can be diagnosed preoperatively.^{6,7}

According to the report of the CT scan, there were beaded foreign bodies in the left middle and upper abdomen, the surrounding radial artifacts are large, and the adjacent structures were not clearly depicted (Figure 1C). Considering the large volume of the foreign body, we speculated that the foreign body was intentionally swallowed by the patient and she forgot about it. According to the physical examination, history and ancillary examination, the patient was diagnosed with acute appendicitis and foreign body in the digestive tract, there were indications for emergency surgery.

Considering the fact that the patient had acute appendicitis, the exact location of the foreign body in the digestive tract was unclear, and the patient was currently in a state of mental disorder, we decided to perform laparoscopic appendectomy combined with endoscopic examination during surgery, which not only can minimize the damage, but also help to locate the foreign body and even remove it. The 2 operations were performed almost simultaneously, and we successfully performed laparoscopic appendectomy, appendicitis was later proved by pathological examination (Figure 1D). However, the endoscopic examination performed by the gastroenterologist was not smooth. Firstly, it was difficult to pass through the esophagus due to the severe swollen/edematous endometrium. It took extra time to find the cardia of the stomach. Several independent metallic spherical objects were observed when the endoscope reached the gastric cavity (Figure 1E and F), which was quite different from the integrated design of the pearl bands that we recognized. On clearing the probe, we found that there were several magnetic beads located in the gastric fundus and greater curvature of the stomach, adjacent to the pylorus, accompanied by the magnetic phenomenon of individual metal beads. The magnetic beads attack to each other, and was located by pylorus, long term stimulation of mucosal folds may lead to pyloric edema and obstruction. So, it was urgent to remove the magnetic beads immediately under endoscope. However, due to the patient's edema of the gastrointestinal tract, the narrow space of the gastric cavity and the stenosis of the cardia, the cardia of the stomach was at great risk of being torn apart by forceful removal. Moreover, according to the estimation of CT and direct observation under gastroscopy, the diameter of magnetic beads is about 3 cm which

Table 1. The Results of Laboratory Examination.

VARIABLE	THE DAY OF ADMISSION	1 D AFTER SURGERY	6 D AFTER SURGERY	20 D AFTER SURGERY	REFERENCE RANGE
Hemoglobin (g/L)	145	108	117	114	115-150 g/L
Hematocrit (%)	43.5	33.6	34.9	33.4	35%-45%
Mean corpuscular volume, MCV (fL)	92.1	92.3	89.7	85.2	82-100 fL
Mean corpuscular volume, MCH (pg)	30.7	29.7	30.1	29.1	27-34 pg
Mean corpuscular volume concentration, MCHC (g/L)	333	321	335	341	316-354 g/L
Combining Red Blood Cell Distribution Width, RDW-CV %	13.6	13.3	12.9	12.7	12.2%-14.8%
Differential count (%)					
Neutrophil	93.7	78.9	83.2	58.4	40%-75%
Lymphocytes	3.9	14.1	13.3	33.9	20%-50%
Monocytes	2.3	6.6	2.9	6.1	3%-10%
Eosinophils	0	0.2	0.2	0.8	0.4%-8.0%
Basophil	0.1	0.2	0.4	0.8	0%-1%
Neutrophil	9.6	3.81	7.72	2.87	1.8-6.3 10 ⁹ /L
Differential cell count (/L)					
Red blood cell, RBC	4.72	3.64	3.89	3.92	3.8-5.1 10 ¹² /L
White blood cell, WBC	10.25	4.83	9.28	4.92	3.5-9.5 10 ⁹ /L
Lymphocytes	0.4	0.68	1.23	1.67	1.1-3.2 10 ⁹ /L
Monocytes	0.24	0.32	0.27	0.3	0.1-0.6 10 ⁹ /L
Eosinophils	0	0.01	0.02	0.04	0.02-0.52 10 ⁹ /L
Basophil	0.01	0.01	0.04	0.04	0-0.06 10 ⁹ /L
Platelet	240	210	322	292	125-350 10 ⁹ /L
Mean platelet volume, MPV (fL)	9.1	10.3	9.6	10	9.2-12.0 fL
PCT (%)	0.218	0.22	0.31	0.29	0.19%-0.39%
PDW (fL)	16	11.4	10.2	11.4	9.6-15.2 fL
PDW-SD (fL)	45.3	44.9	42	39	41.2-53.6 fL
P-LCR (%)	20	27.6	21	25.4	19.7%-42.4%
Total protein, TPO (g/L)	73.7	51.6	63.7	69.3	65-85 g/L
Albumin (g/L)	44.4	32.9	38.5	42.6	40-55 g/L
Globulin (g/L)	29.3	18.7	25.2	26.7	20-40 g/L
A/G	1.52	1.8	1.5	1.6	1.2-2.4
Total bilirubin, RBIL (umol/L)	26.7	18.1	8.8	5.5	≤15 umol/L
Direct bilirubin, DBIL (umol/L)	0	8.3	4.2	2.6	≤5.0 umol/L
Indirect bilirubin, IBIL (umol/L)	26	9.8	4.6	2.9	0-20 umol/L
ALT (U/L)	13	8	8	7	7-40 U/L
AST (U/L)	17	9	11	12	13-35 U/L
LDH (U/L)		168	228	144	120-250 U/L
ALP (U/L)	102	55	98	92	35-100 U/L
γ-GT (U/L)	18	8	49	17	7-45 U/L
Glucose (mmol/L)		5.12	6.59	5.37	3.9-6.1 mmol/L
Uric acid (mmol/L)	309.8	130	82	237	142.8-339.2 umol/L

(Continued)

Table 1. (Continued)

VARIABLE	THE DAY OF ADMISSION	1 D AFTER SURGERY	6 D AFTER SURGERY	20 D AFTER SURGERY	REFERENCE RANGE
Urea (mmol/L)	4.31	5.76	3.66	5.16	2.6-7.5 mmol/L
Creatinine (mmol/L)	58.6	59	55	67	70-106 umol/L
Carbon dioxide (mmol/L)	18.9	19.6	16.8	25.9	22-29 mmol/L
Calcium (mmol/L)	2.26	1.92	2.15	2.44	2.15-2.50 mmol/L
Potassium (mmol/L)	3.07	4.33	4.07	4.3	3.5-5.3 mmol/L
Sodium (mmol/L)	138.8	140	139	136	137-147 mmol/L
Chlorine (mmol/L)	101.2	108	104	100	99-110 mmol/L
Total bile acid (mmol/L)		0.4	1.8	5	0.0-10.0 umol/L
Cholinesterase (KU/L)		5.387	5.984	8.265	5.32-12.92 KU/L
Retinol binding protein (mg/L)		7	16	27	25-69 mg/L
AST Mitochondrial Isoenzymes (U/L)		4.1	2.2	3.8	0-17 U/L
C-reactive protein (mg/L)		305.27			0-10 mg/L
Cystatin C (mg/L)		0.77	0.71	0.66	0.54-1.55 mg/L
Adenosine deaminase (U/L)		2	5	7	0-25 U/L

indicates underlying perforation of gastric wall (range between 3 and 7mm).⁸ For condition of perforation, the European Society of Gastrointestinal Endoscopy (ESGE) Clinical Guideline recommend surgery instead of endoscopic approach.⁹ After discussion, we decided to perform laparoscopic appendectomy and perform anterior gastric wall incision to remove foreign bodies through abdominal wall assisted incision. As the position of the magnetic beads in the stomach was determined by endoscopy, we first performed laparoscopic appendectomy, and opened the anterior gastric wall according to the preoperative imaging data and endoscopic examination results, hoping to bring out the whole “hand string” completely by virtue of the strong magnetic force of the magnetic bead, and suture the gastric wall in one stage. However, after incising the anterior wall of the stomach, it was not possible to remove it smoothly. Considering that the patient swallowed a single magnetic bead in stages, it was not ruled out that there were magnetic beads passing through the pylorus and relying on magnetic compression to attract each other to the gastrointestinal tract. It was also possible that long-term gastric wall edema caused the magnetic beads to embed into the gastric wall, forcing them to be removed through laparoscopy. Then We have decided to undergo an exploratory laparotomy. We made a 15 cm incision along the linea alba in the middle of the upper abdomen and made a smooth entry into the abdomen. According to the results of the endoscopic examination, we opened the anterior wall of the great curvature of the stomach and used oval forceps to successfully remove a total of 9 pieces of magnetic beads. According to the CT scan reports, we should find 10 pieces of magnetic beads. Further intraoperative exploration revealed that the last missing magnetic bead

was embedded in the deep part of the greater curvature of the stomach, surrounded and still fixed by adjacent adhesion. The intraoperative free gastrocolic ligament was immediately recognized and the strong adhesion between the greater curvature of the stomach and the transverse colon was identified. The ultrasonic knife was used to carefully and slowly dissect the gastrocolic ligament and the position of the last magnetic bead could be reached at the junction of the adhesion between the stomach and the transverse colon. During the operation, it was thought that the magnetic beads induced an internal fistula between the greater curvature of the stomach and the transverse colon (Figure 2A). As to the cause of the internal fistula, we made some speculations as follows: due to the weight of the magnetic beads themselves and the severe edema of the stomach wall, the magnetic beads could act like plant seeds, the magnetic beads infiltrating the lower tissues like plant seeds infiltrating the soil. Otherwise, there is a high probability that the magnetic beads were attracted by magnetism to the previously implanted lumbar metal fixation, settled anterior to the lumbar metal fixation, and continued to penetrate into the inferior tissue, resulting in the formation of an internal fistula. For healthy individuals, foreign body is more likely impact into the anatomical position including anatomical stenosis position or angular area.¹⁰ The separation continued until the magnetic beads were removed, leaving a 5 mm perforation against the junction of both the posterior gastric wall and the transverse colon (Figure 2B). Intraoperative diagnosis was gastric and transverse colon perforation and acute appendicitis. All magnetic beads were removed from the abdomen (Figure 2C). The overall mortality and morbidity rate from colonic perforation were high, arguing for timely

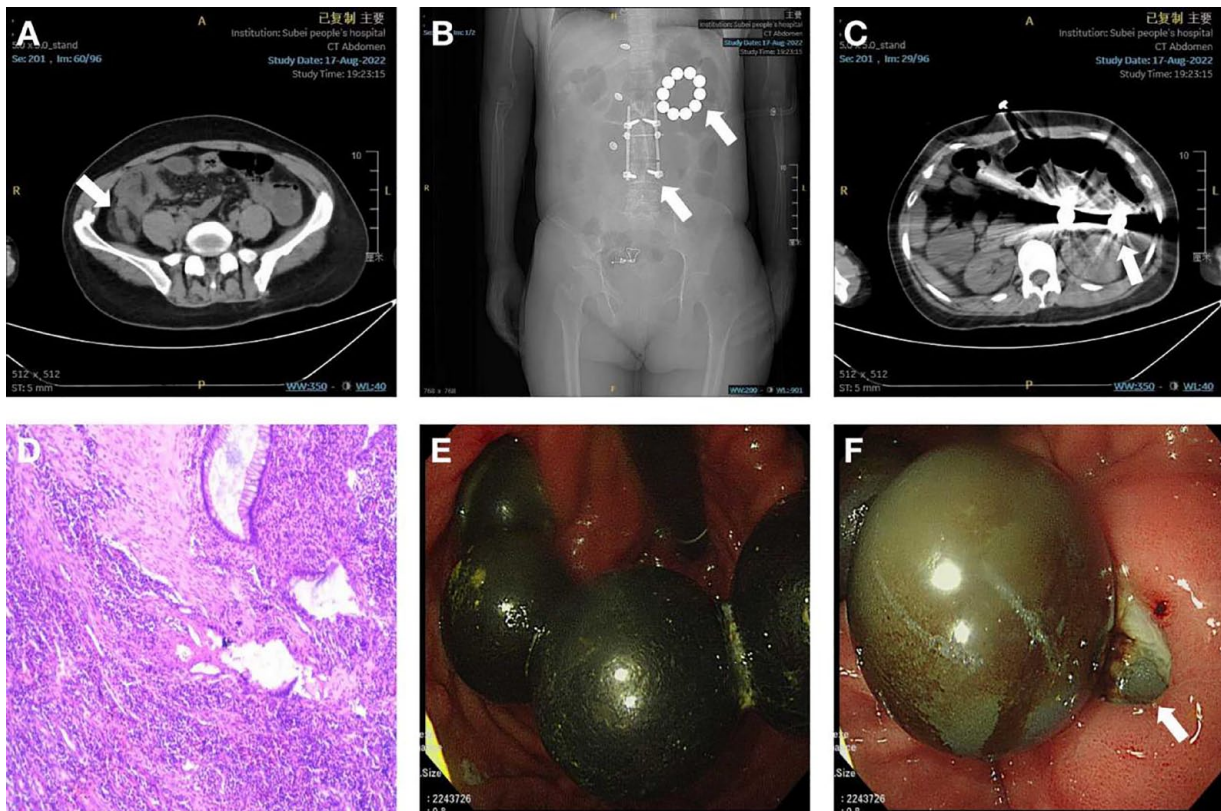


Figure 1. Images obtained from CT scan, pathology, and endoscopy: (A) CT scan shows acute appendicitis, (B) upper arrow shows a bead bracelet was observed in the left upper diaphragm area; lower arrow shows an intramedullary nail fixation in the lumbar vertebrae, (C) CT scan shows the beaded foreign bodies were in the left middle and upper abdomen, surrounding radial artifacts are large, and the adjacent structures were not clearly displayed, (D) pathological image of appendicitis, (E) several independent metal spherical objects were observed the moment when the endoscope reached the gastric cavity, and (F) one of the beads was embedded deep in the gastric mucosa.

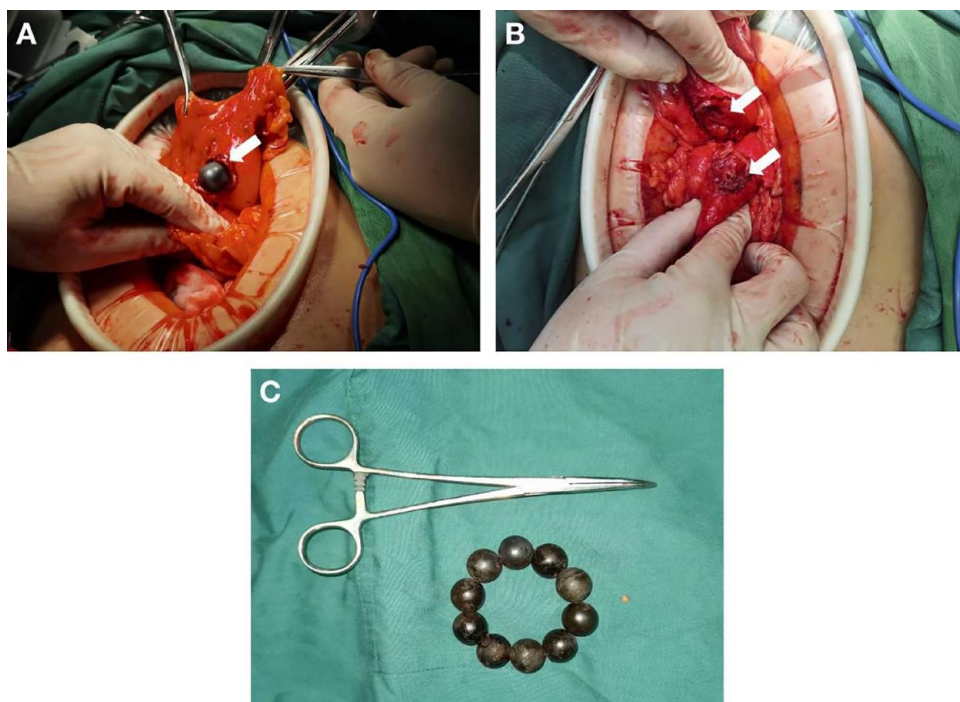


Figure 2. Images obtained during surgery: (A) the white arrow shows the magnetic bead penetrate the posterior gastric wall, (B) the upper arrow shows the hole on the posterior gastric wall; the lower arrow shows a hole on the wall of transverse colon penetrated by the bead, and (C) general observation of magnetic beads.

and accurate diagnosis and treatment.¹¹⁻¹³ In line with standard practice, a single-stage anastomosis is not recommended for acute colonic perforation. Considering the fact that the patient is a 37-year-old woman in good general health, the appendicitis is well controlled and the patient did not eat regularly for 2 days (there was little content in the intestinal tract explored during the operation and the intestinal tract was well prepared). Unlike perforations caused by colon cancer or injury, this patient's condition is actually similar to that caused by iatrogenic colonoscopy. So, we choose a damage control way of surgery.^{14,15} We performed repair of the gastric perforation, partial resection of the transverse colon and end-to-side anastomosis. The patient's post-operative respiratory and circulatory function was good and he was not transferred to intensive care for close monitoring.

As the patient was admitted to hospital as an emergency, no prophylactic antibiotics were given prior to emergency surgery, even though CT showed exudation around the appendix. After the operation, we medicated the patient with full rehydration. In addition, patients received routine gastrointestinal decompression, fasting, somatostatin, parenteral nutrition support and routine antibiotic treatment. Antipsychotic medication was maintained at the previous regimen of one 300mg quetiapine fumarate tablet each night. Patients' vital signs did not fluctuate significantly, ECG (electrocardiogram) monitoring was discontinued on the third postoperative day, and no worrisome postoperative delirium or mental disturbance was observed. There was no anastomotic fistula of concern on the fifth day after surgery. The only complication was a suppurative infection of the incision, which allowed the patient to stay longer than other patients undergoing emergency enterectomy. After discharge, the patient was followed for 1 month. The patient recovered well after discharge, the purulent incisional infection was controlled before discharge, and the patient received a thorough debridement suture before discharge. A follow-up CT scan half a month after surgery showed that the gastrointestinal anastomosis had healed well. The patient is able to describe her illness herself and is able to respond freely. Diet was good and there was no abdominal pain, bloating or bowel obstruction after eating.

Discussion

In comparison to other foreign bodies, the misingestion of magnetic foreign bodies within the digestive tract presents distinctive characteristics that warrant careful consideration. The accumulation of magnets can induce compression of the luminal wall of the gastrointestinal tract, consequently leading to ischemic necrosis. Such a condition has the potential to cause intestinal perforation, both singularly or in multiple instances, intestinal obstruction, peritonitis, intussusception, hemorrhage, and in severe instances, it may culminate in sepsis, septic shock, and pose a life-threatening risk.^{16,17} Hence, considering the prevalence of multiple magnetic foreign body ingestions and

their potential for grave complications, the incidence of surgical interventions surpasses that of other types of foreign bodies. In contrast to the deleterious effects associated with multiple magnetic foreign bodies, a solitary magnetic foreign body is frequently expelled through the natural passage of feces, resulting in a comparatively more favorable outcome.¹⁸ Approximately 80%–90% of ingested foreign bodies undergo spontaneous passage through the gastrointestinal (GI) tract, while the proportion of cases necessitating surgical intervention due to severe complications is less than 1%.¹⁹⁻²¹

The act of ingesting multiple magnets is a relatively prevalent occurrence on a global scale and often results in significant ramifications. Regrettably, a substantial number of patients do not promptly receive accurate diagnosis and appropriate treatment. In the present scenario, the patient exhibits solely mild symptoms such as mild fever and abdominal pain, coupled with a history of instability. It is noteworthy that the majority of cases either present with negligible clinical manifestations or exhibit mild symptoms, such as gradual onset of nausea, non-bilious vomiting, and persistent or intermittent abdominal pain within the initial hours or weeks subsequent to magnet ingestion.²² Considering the patient's history of instability and the absence of comprehensive care, it becomes exceedingly challenging to definitively diagnose the presence of foreign bodies within the digestive tract solely based on medical history collection and laboratory examinations, particularly prior to undergoing systematic imaging examinations. Moreover, the formation of internal fistulas within the digestive tract resulting from prolonged magnetic interactions further complicates the diagnostic process. Furthermore, it is important to acknowledge that aside from children, adults with neurological or psychiatric disorders are also susceptible to ingesting foreign bodies, including magnets.²² In conjunction with the presence of low-grade fever and abdominal pain, the patient displays a notable decrease in appetite, which could potentially serve as an indicative factor for diagnosing gastrointestinal foreign bodies. Unlike acute perforation such as peptic ulcer perforation, our case should belong to chronic perforation caused by magnetic foreign bodies. Our patient was not aware of the timing of ingesting foreign objects due to mental disorder, but according to endoscopic and intraoperative examination results, the patient should have ingested the foreign body for a long time. Due to the gravity of the magnetic bead itself and the potential magnetic attraction of the conical metal implant, the magnetic bead shifts toward the greater curvature of the stomach and adjacent transverse colon. The gastric wall becomes swollen due to prolonged stimulation. Because the perforation is caused by impaction and progressive erosion of the foreign body through the intestinal wall, the site of perforation becomes covered by fibrin, omentum, or adjacent loops of bowel.⁹ After the magnetic bead penetrates the gastric wall, it continues to stimulate the adjacent transverse colon until it penetrates the entire layer of the transverse colon, resulting in perforation of

the transverse colon. Therefore, the perforation and encapsulation of the gastric wall and transverse colon are organized to form an internal fistula. Consequently, it is imperative to exercise caution and vigilance regarding the possibility of gastrointestinal foreign bodies when encountering patients with neurological or psychiatric disorders who present with symptoms and signs pertaining to the digestive tract, along with accompanying manifestations of reduced appetite.

In this particular case, the patient ingested a cluster of magnetic beads, posing significant challenges for complete retrieval through endoscopic procedures. Moreover, the individual magnetic bead possesses a diameter of 3 cm, considerably exceeding the dimensions of the pyloric opening, rendering autonomous passage through the digestive tract virtually impossible. Furthermore, the substantial magnetic interaction between the magnetic beads complicates the feasibility of performing successful endoscopic operations. Separating the adhered magnetic spheres not only demands exceptional endoscopic proficiency but also escalates the risk of mucosal damage, laceration, and perforation. After undergoing laparoscopic appendectomy, we conducted a detailed laparoscopic exploration of the suspected perforated gastric wall and found that the magnetic beads embedded in the gastric wall were abnormally swollen and adhered to the adjacent transverse colon with congestion and edema. In this case, it is possible that the transverse colon also undergoes perforation and forms an internal fistula with the perforated gastric wall. Compare to open repair, laparoscopic repair minimizes postoperative wound pain and encourages early mobilization and return to normal daily activities and the complications in both procedures are similar.²³ However, for cases with multiple perforations or unclear intraoperative diagnosis, open surgery might be more effective in overcoming the technical difficulties encountered in laparoscopic surgery for a clear diagnosis.²⁴⁻²⁶ In our case, the laparoscopic repair faces several technical difficulties: (a) the unclear diagnosis of simple laparoscopic exploration; perforation of the transverse colon cannot be ruled out. (b) the strong interaction magnetic force made it hard to remove the beads through laparoscopic instruments. (c) laparoscopic removal of magnetic beads poses difficulties in exposing the field of view, and due to strong interaction magnetic forces, it is difficult to remove the beads separately. The entire removal the “hand string” may involve the possibility of an auxiliary incision on the abdominal wall. Based on the above considerations, we conducted open surgery.

Presently, there exists a lack of consensus regarding the optimal approach for managing a solitary misingested magnetic foreign body. Currently, clinicians commonly advocate for conservative observation accompanied by regular abdominal X-ray monitoring. In the majority of cases involving a singular magnetic foreign body, spontaneous expulsion through the natural passage of feces is anticipated. However, when confronted with

a cluster of magnetic bodies, the prospects of spontaneous expulsion become significantly diminished, consequently elevating the likelihood of surgical intervention. This is particularly pertinent in situations where implants with pre-existing magnetic fields of interference are present within the body. For our case, due to various special reasons, the diagnosis and treatment face significant challenges: (a) the patient has schizophrenia, has had multiple previous episodes, has a complex history of psychiatric medication and medical treatment due to trauma, and has a metal implant after cone surgery. (b) The magnetic beads swallowed by the patient have strong magnetism, and they are swallowed multiple times. The strong magnetic interaction force makes it almost impossible to remove them under endoscopy. (c) Unlike acute ulcer perforation or perforation caused by sharp foreign objects such as fish bones, foreign objects in the patient’s digestive tract are discovered due to routine CT scans used to diagnose acute appendicitis, and the abdominal symptoms caused by foreign objects are not significant. (d) Due to insignificant abdominal symptoms and patient mental disorders, blunt magnetic beads can cause chronic perforation of the gastric and transverse colon walls due to their own gravity and possible magnetic interactions (from conical metal implants), leading to the formation of an internal fistula, located on the greater curvature side of the posterior gastric wall, posing a challenge for intraoperative diagnosis. Laparoscopic exploration cannot provide a clear diagnosis. This also led to the final patient undergoing open exploratory surgery.

Conclusion

In conclusion, this case shows that for long-term foreign bodies in the digestive tract, we should be beware of the onset of gastrointestinal perforation. Diagnostic evaluation of foreign bodies in the digestive tract should base on the patient’s history and symptoms which require a physical examination focused on the patient’s general condition and to assess signs of any complications, but for asymptomatic individuals with mental disorder, potential foreign bodies and perforations in the digestive tract cannot be ignored, and this situation often makes it difficult to determine the location and degree of perforation, which puts higher demands on the strategy of foreign body removal and the selection of modus operation. For this situation, it is particularly important to choose a approach that is less traumatic and helps to clarify the diagnosis. Internal fistula of gastric and colon may have no typical clinical manifestations and imaging. With its insidious behavior, internal fistula is difficult to diagnose at an early stage.

Authors’ Contributions

Conception and design: Jun Ren. Collection and assembly of data: Jun Ren, Yiqun Liao. Manuscript preparation: All authors. Manuscript proofing: All authors. Final approval of the manuscript: All authors.

Data Availability

The datasets analyzed during the current study are available from the corresponding author on reasonable request.

Ethics Approval and Consent to Participate

The study was performed in accordance with the Declaration of Helsinki.

Consent for Publication

The study did not disclose any individual details, images or videos.

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