

ARTICLE

Three cases of GERD treated by endoscopic cardiac constriction in Tibetan District County Hospital

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Abstract

Gastroesophageal reflux disease (GERD) is a common disease in the outpatient clinic. The symptoms of GERD are typical heartburn, acid reflux and chest pain, and a few are accompanied by extra-esophageal symptoms, such as cough. The recurrence rate of gastroesophageal reflux disease (GERD) is high in medical treatment. Three patients with gastroesophageal reflux disease who failed to receive standard medical treatment were treated by endoscopic cardiac coarctomy in the secondary hospital of Chayu County, Tibet Autonomous Region.

Keywords: Tibet; secondary hospital; gastroesophageal reflux disease; endoscopic cardiac constriction surgery

Gastroesophageal reflux disease (GERD) is a common disease in internal medicine clinics of hospitals at all levels. According to the latest epidemiological data statistics, the prevalence of symptomatic GERD in China is 1.9%–7.0% [1], and its symptoms are divided into typical (heartburn and acid reflux) and atypical (chest pain, epigastric burning sensation, epigastric pain, upper abdominal distension, belching), and a few are accompanied by extraesophageal symptoms, such as cough and asthma. GERD The relapse rate of medical drugs is as high as 75% to 90%. This paper reports three patients with gastroesophageal reflux disease (GERD) who were poorly treated by internal medicine and underwent minimally invasive endoscopic cardiac constriction surgery in the secondary hospital of Chayu County, Tibet Autonomous Region.

1. MEDICAL HISTORY

Medical Records I. Female patient, 69 years old, Tibetan. The patient was admitted due to "recurrent cough, expectoration and shortness of breath for 8 years, and recurrence for 7

days". In the past 8 years, the patient had recurrent cough, expectoration, white viscous sputum, yellow sputum between them, small amount, easy to cough, with shortness of breath, which was more significant after activities, occasional abdominal distension and regurgitation. Seven days ago, the patient developed cough again, paroxysmal aggravation of cough, yellow viscous sputum, no blood-stained sputum or hemoptysis, and chest pain when cough was obvious, with shortness of breath and chest tightness. PE: T: 36.6°C, P: 91 times/min, R: 21times/min, BP: 127/84 mmHg. A few crackles in the right lower lung, epigastric tenderness under xiphoid (+), and the rest were unremarkable. Auxiliary examination after admission: blood routine, liver and kidney function, coagulation four items and myocardial enzymes were all normal, chest X-ray showed a little pneumonia in the right lower lobe. After anti-infection, anti-tussive, expectorant and other symptomatic treatments for 14 days, the patient had no expectoration, but cough symptoms were not significantly improved. Combined with medical history, gastroesophageal reflux disease was considered. Gastroscopy showed cardiac relaxation Hi II Grade III and hiatal hernia. Endoscopic cardiac constriction surgery was performed. 10 days after surgery, the patient felt that cough symptoms were significantly improved, and gastroscopy healed well and the patient was discharged.

Medical Records II. Female patient, 61 years old, Tibetan. The patient was admitted due to "abdominal pain and acid reflux for 30 years and confirmed gastroesophageal reflux disease for 2 months". 30 years ago, the patient began to have recurrent epigastric pain without obvious inducement, showing persistent swelling pain, accompanied by chest pain, mainly on the left side, knife-like, significant pain during cough, no paroxysmal aggravated colic, no radiation to other places, accompanied by regurgitation, with acid reflux, heating, and usually oral omeprazole symptoms still appeared intermittently. Two months before admission, gastroscopy in our hospital showed "cardiac relaxation Hill grade III and hiatal hernia." Standardized PPI 8 weeks of treatment. The subjective symptoms were relieved, but the symptoms recurred repeatedly, sometimes mild and sometimes severe, so he came to our department and was hospitalized for gastroscopic cardiac constriction. Admission examination: T: 36.5°C, P: 52 beats/min, R: 20 breaths/min, BP: 110/63 mmHg, cardiopulmonary auscultation showed no abnormality, upper abdomen subxiphoid tenderness (+), the rest showed no abnormality. Preoperative laboratory tests and examinations were normal. Endoscopic cardiac constriction was performed, and the patient felt significant improvement of abdominal distension and acid reflux 8 days after operation. The gastroscope healed well and the patient was discharged after reexamination.

Medical Records III. Male patient, 54 years old, Tibetan. He was admitted to the hospital due to "recurrent abdominal pain, heartburn, and retrosternal burning sensation 5 years." In the past 5 years, the patient developed abdominal pain without obvious inducement, more significant in the epigastric subxiphoid region, showing persistent colic, more significant after meals, with heartburn and retrosternal burning pain. No cough or expectoration. The patient took Omeprazole by himself and was admitted to our hospital for further diagnosis and treatment. PE after admission: T: 36.3°C, P: 77 bpm, R: 19times/min, BP: 101/107 mmHg. Cardiopulmonary auscultation was unremarkable, epigastric subxiphoid tenderness was positive, and the rest were unremarkable. Preliminary diagnosis of gastroesophageal reflux disease was initially made, gastroscopy showed cardiac relaxation Hill grade II, and

the patient's condition was explained to the family members and the patient, and endoscopic cardiac constriction surgery was developed. 7 days after surgery, the patient's abdominal pain and retrosternal burning sensation basically disappeared, and the gastroscopy healed well and the patient was discharged.

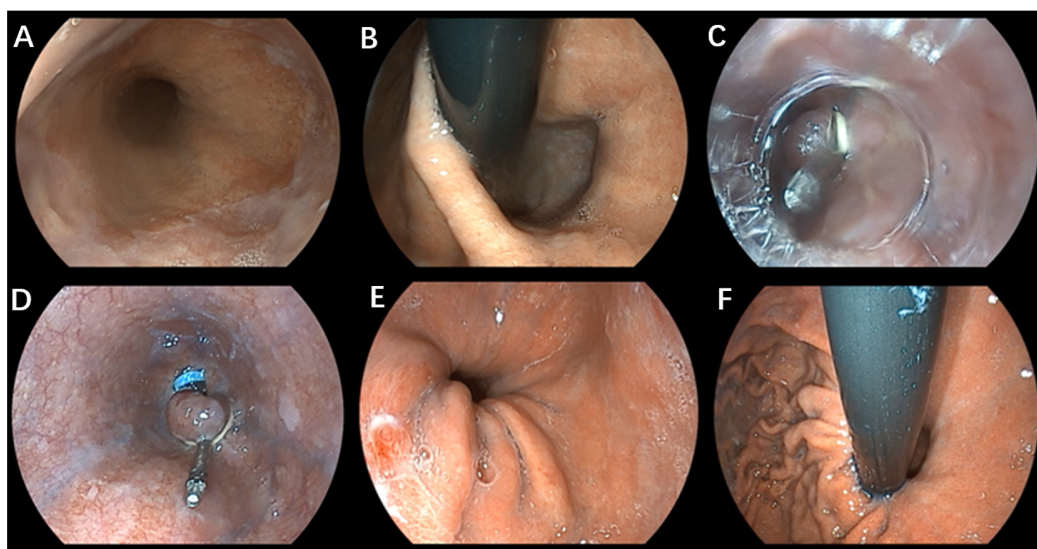
2. Discussion

Numerous studies have confirmed that the pathogenesis of GERD is: dysfunction of gastroesophageal junction function and structure, esophageal clearance dysfunction and weakened epithelial defense, and obesity weakens esophageal anti-reflux function, and gastroesophageal reflux disease is divided into two phenotypes: erosive reflux disease (ERD) and non-erosive reflux disease (NERD). A large data [2] study from the Department of Gastroenterology of the School of Medicine of Tibet University in conjunction with the People's Hospital of Tibet Autonomous Region showed that gastroesophageal reflux disease remains predominantly mild in Tibet, with young and middle-aged people as a group, and the incidence of severe ERD increases with increasing age, with males detected more than females. In view of the in-depth study of pathogenesis, it is recommended in the consensus opinion of Chinese experts in 2020 and Japanese evidence-based clinical practice guidelines in 2021 that GERD treatment includes drug therapy and surgical treatment: acid suppressants are the main therapeutic drugs and tend to recur after 6 months of drug withdrawal; surgical anti-reflux therapy is effective but invasive and usually unacceptable to patients. With the rapid changes in minimally invasive techniques of digestive endoscopy, minimally invasive treatment of GERD continues to emerge, and the more mature techniques are: endoscopic submucosal dissection (ESD), endoscopic anti-reflux mucosal resection (AMR), and endoscopic cardiac constriction band ligation, in which endoscopic cardiac constriction develops on the basis of mature endoscopic techniques for the treatment of gastroesophageal reflux disease.

Of the three cases reported herein, two patients sought medical attention with typical symptoms of GERD, and the other presented with atypical symptoms combined with extraesophageal symptoms (long-standing chest pain and cough), which were considered to be caused by GERD after multidisciplinary consultation with gastroenterology, respiratory medicine, and thoracic surgery, and gastroscopy was performed to confirm the diagnosis. Endoscopic cardiac relaxation HiII II-III could be minimally invasive endoscopic cardiac relaxation in three patients. Because this hospital was a secondary primary hospital, and the nurses in the matching table did not receive four-level surgical training such as ESD and AMR, endoscopic cardiac constriction surgery was performed. Specific operation process: complete upper gastrointestinal examination → determine the grade of cardiac relaxation, reflux esophagitis (grade B) need medical treatment first mucosal healing to A grade, before surgery → withdrawal install Boston seven-loop ligator → smooth mirror successively fully suction set the lesser curvature, posterior wall, greater curvature mucosal layer and muscular layer of the cardia, each set of 1 ring → with Boston integrated self-controlled rotatable locking hemostatic clip, fix the root of the greater curvature snare tissue → observe the relaxation of the cardia significantly narrowed, withdrawal. Gastroscopy was reexamined more than 1 week after operation to observe mucosal healing and cardiac constriction.

All three patients healed well, the cardiac relaxation grade decreased, and the subjective symptoms were significantly improved.

Endoscopic cardiac constriction for the treatment of GERD is performed by endoscopic ligation and fixation to scar the mucosa and sphincter at the lower end of the esophagus, thereby increasing the pressure of the lower esophageal sphincter and effectively playing a role in preventing gastroesophageal reflux from pathogenesis. Minimally invasive endoscopic surgery can significantly improve the symptoms of patients with GERD, significantly improve the quality of life, reduce drug dependence and reduce medical costs [3], effectively solving the treatment problem for patients with GERD. This technique is easy to operate and suitable for promotion in secondary primary hospitals.



Endoscopic Pictures:

- A. PREOPERATIVE: Endoscopic observation of lower esophageal cardia relaxation
- B. Preoperative: Inverted endoscopy for gastric cardia relaxation
- C. Intraoperative: Ligation and titanium clip fixation of the mucosal and muscular layers of the cardia orifice
- D. Intraoperative: Observe for cardia constriction
- E. 1 week after surgery: significant narrowing of the cardia at the lower end of the esophagus was observed endoscopically
- F. 1 week after surgery: significant narrowing of gastric cardia observed by inverted endoscopy

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