

# Advances in Non-Operative Treatment of Hiatal Hernia

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**Abstract:** Hiatal hernia is a disease of abdominal organs (mainly stomach) entering the thoracic cavity through the hiatus of the diaphragm. It is often seen in patients with obesity and long-term elevated abdominal pressure. It is easy to be misdiagnosed as heart, lung and chest diseases. In recent years, due to the improvement of living standards, more and more obese patients are suffering from obesity, and the pressure of work and life is increasing. With the improvement of diagnosis and treatment technology such as endoscopy and angiography, the incidence of obesity is gradually increasing in recent years. Because the surgical treatment is still in the initial stage and there are many postoperative complications, it is necessary to study the non-surgical treatment of esophageal hiatal hernia. After data investigation, this paper discusses the western medicine treatment of esophageal hiatal hernia and traditional Chinese medicine treatment of esophageal hiatal hernia, and summarizes and discusses various non-surgical treatment methods on the basis of the original data. The results showed that the non-surgical treatment of hiatal hernia in China is still in its infancy, but there are many research results, especially the method of combining traditional Chinese and Western medicine in the treatment of hiatal hernia is worthy of promotion.

**Keywords:** Esophageal Hiatal Hernia, Non-surgical Treatment, Integrated Traditional Chinese and Western Medicine, Research Progress

## 1. Introduction

The incidence rate increased with age, 10% in patients fewer than 40 years of age, and 70% in patients aged 70 years [1]. Hiatal hernia is closely related to gastroesophageal reflux disease (GERD) symptoms such as heartburn, acid reflux, retrosternal pain and so on [2]. It is difficult to accurately diagnose the common clinical examination methods, especially for the smaller esophageal hiatal hernia; moreover, whether to choose the surgical treatment and the choice of surgical methods are also controversial [3]. The number of patients who are ill in western countries is increasing [4]. It is considered rare in Asia before. However, with the development of economy, the incidence rate of the disease has increased significantly in Asia with the change of living habits. According to the current research, the prevalence of HH in the world is increasing (about 50%) [5].

After many scholars' research, esophageal hiatal hernia [6] is closely related to gastroesophageal reflux disease, Barrett's esophagus and esophageal cancer [7]. Some scholars think that the probability of gastroesophageal reflux disease in HH is 2-64%, and the rate of gastroesophageal reflux disease combined with HH is 32% - 52% [8]. Today's research reports suggest that most of Barrett's esophagus is accompanied by hiatal hernia, and the incidence of Barrett's esophagus in patients with hiatal hernia is significantly increased [9]. Researchers have found that over a period of time, hiatal hernia may also develop into esophageal cancer, the incidence of esophageal cancer in patients with hiatal hernia ranged from 0.32% to 10%. In addition, long-term HH patients, especially those with larger hernia, may cause severe gastroesophageal reflux symptoms. However, Barrett's esophagus and esophageal cancer play an important role [10].

In this paper, the existing non-surgical treatment of esophageal hiatal hernia was studied. Based on the original data, it was discussed and summarized. It was found that the existing non-surgical treatment of esophageal hiatal hernia is still very simple, and can only be used in patients with mild symptoms of esophageal hiatal hernia. Therefore, the non-surgical treatment of hiatal hernia in China is still in its infancy, and there is still a long way to go in the future.

## 2. Esophageal Hiatal Hernia and Simo Decoction Oral Liquid

### 2.1 Hiatal Hernia

Hiatal hernia [11] refers to the abdominal esophagus, esophagogastric junction and some gastric tissue protruding into the chest through hiatus. Hiatal hernia is a common disease [12], which is very common in western countries. The incidence rate in western countries is between 4.5% and 15%. The incidence rate of local population is around three percent. The incidence of hiatal hernia increased with age [13]. In recent years, the incidence of hiatal hernia is increasing. The clinical symptoms of hiatal hernia mainly depend on the size of hernia and the degree of gastric reflux [14]. The main manifestations were heartburn, sternal pain, acid regurgitation and dysphagia. In addition, some patients can be manifested as: angina like pain, similar to gastric perforation, similar to left exudative pleurisy, similar to left pneumothorax, similar to intestinal obstruction. Esophageal hiatal hernia can be generally divided into four types: type I is sliding type hiatal hernia, the position of cardia moves upward; type I is paraesophageal hiatal hernia, the cardia is still in normal position, and the gastric fundus enters the chest through the esophageal hiatus hernia; type I is the mixed type of esophageal hiatal hernia, the gastric fundus enters the chest cavity through the esophageal hiatal hernia, and the cardia moves up to the chest cavity; type I is the paraesophageal hiatal hernia; type II is the paraesophageal hiatal hernia; type II is the esophageal hiatal hernia; Type A is a huge hiatal hernia of the esophagus, protruding to other organs except stomach [15].

### 2.2 Simotang Rral Liquid

Simotang [16] is a traditional Chinese medicine combined with modern science and technology. It comes from the classic medical work Wu Wu Tang. The mechanism of traditional Chinese medicine in restoring gastrointestinal physiological function, promoting emptying, lowering blood pressure, promoting gastrointestinal peristalsis, calming Qi, reducing adverse reactions, relieving pain and other aspects have been deeply understood [17]. This prescription uses wood and orange shell [18] to clear swelling, black medicine to regulate qi, areca nut to regulate qi. Modern pharmacological studies have shown that Fructus aurantii can increase the tension and motor function of gastrointestinal smooth muscle, and increase the peristalsis of gastrointestinal smooth muscle [19]. It not only regulates the function of esophageal and gastrointestinal smooth muscle, but also relieves spasm and pain; it not only regulates the type of liver blood stagnation, but also increases the gastrointestinal tension in the elderly, so as to correctly lack gas and non-solid esophageal hiatal hernia [20]. This is conducive to the recovery of the whole digestive tract function, and gradually restore the normal physiological structure of the gastric sac sliding to the chest.

## 3. Non Operative Treatment of Hiatal Hernia

### 3.1 Lauryl Alcohol in the Treatment of Esophageal Hiatal Hernia

During the operation of endoscopic drug injection, gastroscopy was carried out into the gastric cavity, and the endoscopic examination was performed at the junction of the esophagus and stomach and the dentate line. The total amount of lauryl alcohol was not more than 10 ml. the interval between the points was 0.01 M, and 1.0 ml was injected once a week for four consecutive weeks. The rats were fasted for 4.5 hours after each injection and were treated with anti-reflux drugs.

### 3.2 Simo Decoction plus Ranitidine in the Treatment of Slipping Esophageal Hiatal Hernia

Simotang oral liquid (mainly composed of Radix Aucklandiae, Fructus aurantii Immaturus, Radix Aconiti, areca,) 20ml each time, 3 times a day, ranitidine 150mg, twice a day, a course of treatment for 2 weeks. After 2 weeks, the second course of treatment was conducted. After the end of the second course of treatment, gastroscopy was rechecked for 2 weeks.

### 3.3 Treatment of Sliding Hiatal Hernia with Integrated Traditional Chinese and Western Medicine

Western medicine treatment: all cases were given modoline 9mg orally; three times a day; omeprazole 45mg, oral, once a day; hydrotalcite tablets 0.6g orally, three times a day. Acupuncture and moxibustion was used in the treatment of TCM. The acupoints of Zhongwan, Neiguan, Zusanli and

Geshu were selected, once a day and 10 times for a course of treatment. During the treatment, pay attention to avoid spicy, raw and cold diet, reduce activities and do not have a full meal.

#### 4. Discussion

##### 4.1 Efficacy of Lauryl Alcohol in the Treatment of Esophageal Hiatal Hernia

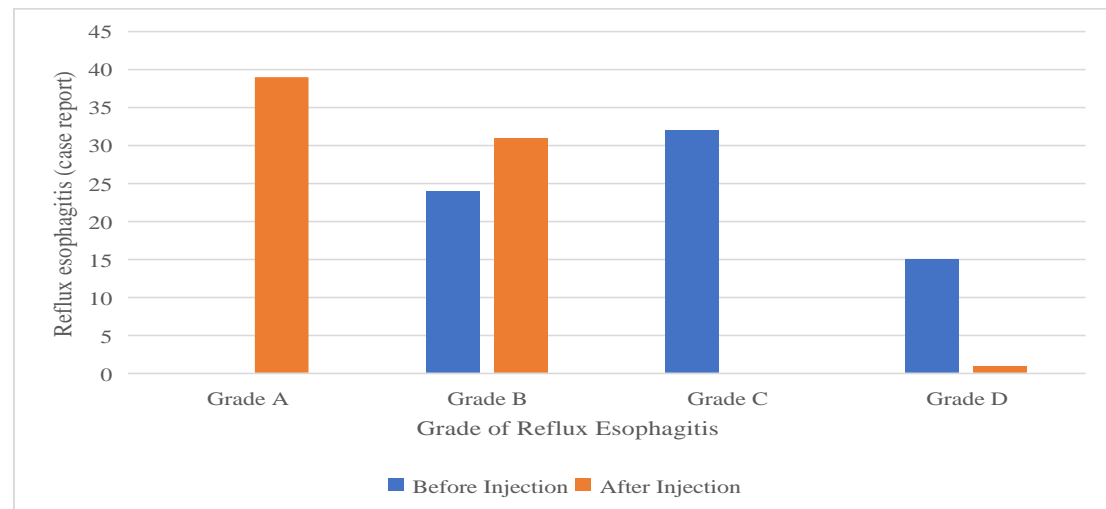


Figure 1. Comparison of Endoscopic Curative Effect of Esophageal Hiatal Hernia Patients before and after Injection

In this paper, 71 patients with esophageal hiatal hernia were treated with lauryl alcohol. The situation before and after treatment was analyzed. The statistical results were drawn by Excel, as shown in Figure 1. Injection of lauryl alcohol can shorten the distance between dentate line and esophageal hiatus mark, and obviously improve the degree of reflux esophagitis. It can effectively relieve pain and other clinical symptoms in a short time. Therefore, endoscopic injection of lauryl alcohol is an effective method for the treatment of HH type hiatal hernia. The results showed that non manual treatment could improve the acid environment, reduce the contact time, increase the sphincter pressure, improve the clinical symptoms and improve the quality of life in a short time.

Lauryl alcohol is the most widely used sclerotherapy drug in the world. Tissue edema, inflammation and proliferation of fibroblasts after local injection are the earliest drugs with fibrotic degeneration. The efficacy of lauryl alcohol in the treatment of varicose veins and intratumoral sclerosis has been recognized. However, there are no clinical reports on its application in HH. Endoscopic submucosal drug injection for HH is to inject drugs into the mucosa and submucosa of LES and phrenic hiatus. In addition, sclerosing agent can stimulate the intima of small vein to cause aseptic inflammation and vasculitis to form thrombus, so as to thicken the wall of the tube. The above factors can change the sensibility of LES area wall, tighten the relaxed lumen and change the structure of hernia; At the same time, when injecting drugs into the submucosa of diaphragmatic hiatus, the injection needle points to the gastric side with force, and the lumen may push to the gastric side, so as to change the position of diaphragmatic hiatus, so that some of the stomach tissues and abdominal esophagus moved upward are pushed back to the diaphragm. The exact mechanism remains to be further studied.

##### 4.2 Efficacy of Simotang Rral Liquid plus Ranitidine in the Treatment of Sliding Esophageal Hiatal Hernia

Table 1. Comparison of Improvement of Esophagitis between the Two Groups after Treatment

Group	Case	to become Better	Unchanged	Hypostasis	Effective
Treatment Group	71	37	4	30	67(94.4%)
Control Group	71	36	12	23	59(83.1%)

Shown as Table 1, the frequency of abdominal pain in the two groups was significantly improved compared with that before treatment. Endoscopic dentate line, hernia sac, and esophagitis: the treatment group and the control group were significantly improved. The improvement of the treatment group was significantly better than that of the control group, and the improvement of esophagitis was more significant.

In recent years, the incidence of esophageal hiatal hernia is increasing year by year, characterized by frequent or persistent attacks of acid regurgitation, belching, heartburn, hiccup, epigastric fullness, pain behind the sternum and its surrounding areas, which can radiate to the precordial area, shoulder back and mandible; women are more than men, and older than younger age. TCM syndrome differentiation can be divided into two types: emotional depression is common in women, and stagnation of liver qi and gastrointestinal qi stagnation are syndrome differentiation. Elderly: gastrointestinal tension decreased, peristaltic function weakened, syndrome differentiation for Qi deficiency is not solid. Simotang is a Chinese traditional medicine with modern science and technology. It has a deep understanding of its traditional Chinese medicine mechanism in restoring gastrointestinal physiological function, promoting emptying, reducing pressure, promoting whole gastrointestinal peristalsis, smoothing Qi and reducing adverse reactions, eliminating accumulation and relieving pain. In addition, oral ranitidine can reduce esophageal reflux, and the combination of the two drugs has significant curative effect, convenience and no adverse reactions.

#### 4.3 Effect of Integrated Traditional Chinese and Western Medicine on Sliding Hiatal Hernia

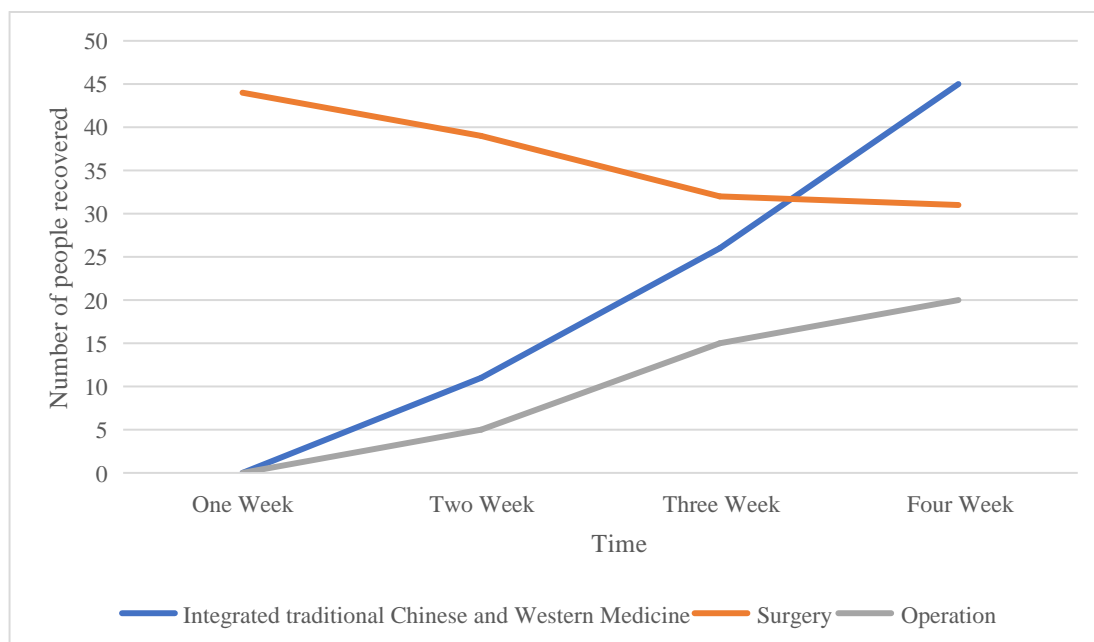


Figure 2. Comparison of Integrated Traditional Chinese and Western Medicine and Surgical Treatment

The statistical results of treatment effect of three groups of patients were drawn with Excel, as shown in Figure 2. As can be seen from Figure 2, the treatment course of traditional Chinese and Western medicine is long, the effect is slow, and the cure rate is not high or low, but the advantage is that there are no complications and the treatment process is not painful. Although the cure rate of surgical treatment is high, it is often accompanied by high-risk complications and postoperative pain is greater.

Sliding hiatal hernia is a common digestive system disease, its etiology mainly has congenital and acquired two kinds, and later days are the majority. Congenital due to hypoplasia, acquired often due to the increase of years, organ aging, tissue atrophy, ligament relaxation. According to traditional Chinese medicine, the disease belongs to the category of "choking diaphragm", "nausea", "vomiting", and hiccup "and" epigastric pain. The disease is caused by improper diet and seven emotions. The pathogenesis of the disease is melancholy for the liver, liver loss of drainage, liver wood riding on soil, and spleen failure in healthy movement, resulting in adverse invasion of the stomach, imbalance of stomach and esophagus Qi, loss of muscle and fascia. Although surgical treatment can correct the anatomic defects of hiatal hernia, the postoperative dysfunction of esophageal and gastric junction is up

to 10%, and the recurrence rate is as high as 50%. Therefore, medical treatment is often selected in clinical practice. In addition to the application of drugs to enhance gastric motility, gastric acid secretion should be inhibited and gastric mucosa should be protected. There are few reports on the treatment of this disease with traditional Chinese medicine, so far there is no unified syndrome differentiation and curative effect standard, only case reports; because the disease is easy to be ignored, some symptoms are equivalent to peptic ulcer disease, biliary tract disease, esophageal cancer, coronary heart disease and other drugs cannot be used too much, the course of treatment is too long, dampness and heat are caused by heat evil, because the total pathogenesis of gout is mainly due to positive deficiency and yang deficiency, It's better to make pills and draw them slowly.

#### 4.4 Summary of Three Non-surgical Treatments

Compared with surgical treatment, the three non-surgical treatment process is not painful, but the treatment time is longer, can be said to have advantages and disadvantages. The biggest advantage of non-surgical treatment is that the probability of complications is very small, which greatly reduces the pain after treatment. Hiatus hernia is caused by various causes of esophageal hiatus, relaxation of the hiatus, abdominal esophagus, esophagogastric junction, and part of gastric tissue hernia into the chest. The clinical manifestations are acid reflux, vomiting, sternal pain, arrhythmia, asthma and other symptoms. The incidence rate is higher in western countries and increases with age, hiatal hernia. At present, the main treatment methods are internal medicine, surgical treatment and laparoscopic treatment. Surgical operation requires laparotomy, which is traumatic. For the elderly, poor physique, unable to tolerate surgery or unwilling to accept any surgery, endoscopic minimally invasive surgery is one of the more promising treatment methods. At present, there are many reports on reflux esophagitis, such as endoscopic suture technology, injection of intumescent drugs in the lower esophagus, radiofrequency treatment; etc. Endoscopic treatment of hiatal hernia is rare. The ideal treatment of hiatal hernia is to reset the esophageal anatomic position, repair the diaphragmatic hiatus and enhance Les through fundus folding. Therefore, most scholars believe that endoscopic treatment of hiatal hernia may have little effect, which is also an important reason for the treatment of esophageal hiatal hernia. Therefore, to explore a small trauma, effective, acceptable non-surgical treatment for the elderly and weak is an urgent problem to be solved in clinical treatment.

## 5. Conclusions

In this study, this paper studied and summarized the treatment of esophageal hiatal hernia with lauryl alcohol, Simo decoction plus ranitidine in the treatment of sliding esophageal hiatal hernia, and integrated traditional Chinese and Western medicine in the treatment of sliding esophageal hiatal hernia. These three kinds of non-surgical treatment process are longer, but the treatment risk is small. Generally speaking, the non-surgical treatment of esophageal hiatal hernia is not mature, and has not reached the large-scale application, so the non-surgical treatment of esophageal hiatal hernia still has a lot of room for development and progress.

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