

## Clinical Report

# Pyonex in treatment of 23 patients with delayed gastric emptying after esophagectomy

## 揞针治疗食管癌术后胃排空障碍23例

FENG Gang (冯罡)<sup>1</sup>, HUA Jin-shuang (华金双)<sup>2</sup>

1. Rehabilitation Department of Henan Cancer Hospital Hebi Branch, Hebi 458030, Henan Province, China; 2. Henan University of TCM, Acupuncture and Massage College (1. 鹤壁京立肿瘤医院康复科, 河南鹤壁 458030, 中国; 2. 河南中医学院针推学院)

### ARTICLE INFO

First author: FENG Gang (1979-), male, chief physician.

Research field: clinical and scholarly tradition of Henan SHAO's acupuncture and treating stubborn diseases with acupuncture.

E-mail: fenggang0304@163.com

Accepted on July 10, 2015

### ABSTRACT

**Objective** To evaluate the effect of Pyonex in treatment of patients with delayed gastric emptying after esophagectomy. **Methods** Twenty-three patients were treated with Pyonex at Píshū (脾俞 BL 20, bilateral), Wèishū (胃俞 BL 21, bilateral), Nèiguān (内关 PC 6), Zúsānlǐ (足三里 ST 36), Sānyīnjiāo (三阴交 SP 6) and Shídào (食道 CO 2) on the basis of conventional treatment. The pyonexs were changed every four days, and change for five times was considered as one course of treatment. The efficacy was evaluated after treatment for one course. **Results** One patient was cured after treatment for one time, with the effective rate of 4.4%; two patients were cured after treatment for two times, with the effective rate of 8.7%; ten patients were cured after treatment for three times, with the effective rate of 44.5%; seven patients were cured after treatment for four times, with the effective rate of 30.4%; and three patients were cured after treatment for five times, with the effective rate of 13.0%. 23 patients were cured after treatment for five times, with the total effective rate of 100%. **Conclusion** Pyonex has sound effect in treatment of patients with delayed gastric emptying after esophagectomy.

**KEY WORDS:** pyonex; esophagus cancer; delayed gastric emptying

Delayed gastric emptying (DGE) is one of the complications at the early stage after esophagectomy, and a kind of gastric dynamics disorder syndrome caused by non-mechanical obstruction. With the main characteristic of gastric emptying delay, DGE is also called gastroparesis syndrome<sup>[1-2]</sup>, belonging to the category of “vomiting” in traditional Chinese medicine. The incidence of DGE is 0.2%–4.6%. If treatment is not in time, DGE can induce thoracic-stomach dilatation and gastric wall edema, resulting in undesirable healing of anastomotic stoma<sup>[3]</sup>. The authors have treated 23 patients with DGE, and obtained good efficacy by exploring the academic essence of School of Shao's acupuncture and moxibustion and combining with the long-term advantage of pyonex. The report is as follows.

### GENERAL DATA

Twenty-three patients were the inpatients of Henan Cancer Hospital Hebi Branch from May, 2008 to March, 2015. There were 14 males and 9 females, and aged from 43 to 78 years old, with the average of (62±10) years old. Delayed gastric emptying (DGE) attacks patients 5–14 days after operation, with the average of (9.6±2.5) days. There were 12 patients underwent curative resection of esophagus cancer through neck and left thorax, 9 patients underwent curative resection of esophagus cancer through left thorax, and 2 patients underwent curative resection of esophagus cancer through neck, right thorax and left thorax. All the patients underwent esophagus-stomach-neck anastomosis, and gastric tube and nutrient canal were indwelt during operation.

All the cases conformed to the diagnostic criteria<sup>[4]</sup>: (1) gastrointestinal motility weakened, and mechanical obstruction was excluded; (2) the amount of stomach drainage >500 mL/d, and lasted for more than 10 days; (3) gastroparesis caused by diabetes, connective tissue diseases, hypothyroidism and etc. was excluded; (4) without obvious disturbance of water and electrolyte or acid-base imbalance; (5) did not take medicine to inhibit gastrointestinal motility.

## METHODS

(1) Conventional treatment: food and water was forbidden after operation; continuous gastrointestinal decompression; water, electrolyte and acid-base balance were maintained, and enteral nutrition (1 000 mL/d) was conducted for more than 7 days.

### (2) Pyonex therapy

Acupoints selection: Pishū (脾俞 BL 20), Wèishū (胃俞 BL 21), Nèiguān (内关 PC 6), Zúsānlǐ (足三里 ST 36), Sānyīnjiāo (三阴交 SP 6) and auricular point Shídào (食道 CO 2) were selected. Manipulation: The patient was asked in semireclining position, with back and lower limbs exposure. The doctor's hands were disinfected with medical grade liquid soap, and the patient's skin of acupoints was disinfected with 75% alcohol. Disposable pyonexs (Seirin brand), with the specification of 0.2 mm×0.9 mm, were used at auricular points, and 0.2 mm×1.5 mm pyonexs were used at other acupoints. In addition that BL 20 and BL 21 were needled at both sides, other acupoints at both sides were needled alternately. After the pyonexs were fixed, the acupoints were pressed for three times on each day, with the degree tolerated by the patient. The pyonexs were changed every four days, and change for five times was considered as one course of treatment. The efficacy was evaluated after treatment for one course.

## RESULTS

### Efficacy evaluation criteria<sup>[5-6]</sup>

Clinically controlled: gastrointestinal decompression was stopped, and the symptoms such as feeling of repletion, nausea and vomiting disappeared; food and water could be taken. Markedly effective: the amount of stomach drainage=150–300 mL/d, and the symptoms such as feeling of repletion, nausea and vomiting alleviated obviously. Effective: the amount of stomach drainage=300–500 mL/d, and the symptoms such as feeling of repletion, nausea and vomiting alleviated slightly. Ineffective: the amount of stomach drainage >500 mL/d, and the symptoms such as feeling of repletion, nausea and vomiting didn't

alleviate.

## Result

One patient was cured after treatment for one time, with the effective rate of 4.4%; two patients were cured after treatment for two times, with the effective rate of 8.7%; ten patients were cured after treatment for three times, with the effective rate of 44.5%; seven patients were cured after treatment for four times, with the effective rate of 30.4%; and three patients were cured after treatment for five times, with the effective rate of 13.0%. 23 patients were cured in treatment for five times, with the total effective rate of 100%.

## TYPICAL CASE

The patient was a male, 61 years old, and visited hospital on May 20, 2014 for the first time. Chief complaints: feeling of repletion, nausea and vomiting for three days one week after esophagectomy. Conventional treatment: fasting; continuous gastrointestinal decompression; water, electrolyte and acid-base balance were maintained; enteral nutrition (1 000 mL/d); intramuscular injection with metoclopramide dihydrochloride (20 mg/d); and gastric lavage with 200–500 mL of 5% sodium bicarbonate solution for 1 or 2 times per day. Efficacy was not good. According to consultation, physical examination: absence of tenderness in upper abdominal, no masses was touched, peristole weakened, gurgling sound was once/ 3 min, and the amount of stomach drainage was 700 mL/d; with light red tongue, thin coating and moderate pulse. Western medicine diagnosis: DGE after esophagectomy; TCM diagnosis: vomiting (spleen-stomach depletion). Treatment: fortifying the spleen and boosting the stomach, directing counterflow downward and arresting vomiting. Nutritional support was continued, and pyonexs therapy was applied. BL 20 (bilateral), BL 21 (bilateral), PC 6, ST 36, SP 6 and CO 2 were selected as main acupoints. Disposable pyonexs (Seirin brand), with the specification of 0.2 mm×0.9 mm, were used at auricular acupoints, and 0.2 mm×1.5 mm pyonexs were used at other acupoints. In addition that BL 20 and BL 21 were needled at both sides, other acupoints at both sides were needled alternately. After the pyonexs were fixed, the acupoints were pressed for three times on each day, with the degree tolerated by the patient. The pyonexs were changed every three days. After the first treatment, the patient's symptoms such as feeling of repletion, nausea and vomiting alleviated, and the amount of stomach drainage was 400 mL/d; after the second treatment, the patient's symptoms such as feeling of repletion, nausea and vomiting alleviated obviously,

and the amount of stomach drainage was 200 mL/d; before the third treatment, stomach tube has been pulled out, liquid food could be taken, the symptoms such as feeling of repletion, nausea and vomiting occurred occasionally; after the third treatment, the patient's symptoms disappeared, and then he left the hospital.

## EXPERIENCE

The pathogenesis of DGE after esophagectomy has not been clear, which may be related to the disruption of vagus nerve during operation, changes of the location, shape and size of stomach<sup>[7]</sup>, and autonomic nerve dysfunction caused by various factors (advanced age, hypoproteinemia, diabetes, and spiritual hypertension)<sup>[2]</sup>. In modern medicine, the main treatment method is gastrointestinal decompression, nutritional support, and symptomatic treatment. But the course of treatment is long, and the improvement of symptoms is unobvious. The authors have applied pyonex to treat with this disease, which shortened the course of treatment, improved the symptoms rapidly, enhanced patient's quality of life, and contributed to the concrescence of anastomotic stoma. Esophagus cancer belongs to the category of "dysphagia" in traditional Chinese medicine, and "dysphagia" for long time may cause *qi* and blood consumption, and failure of the spleen-stomach to transport; operation may damage *zang-fu* organs, *qi* and blood, thoracic and abdominal incision, meridians of spleen, stomach, liver and gallbladder, so as to result in serious disorder of *qi* movement and *qi* and blood depletion, which made more difficult to treat. Ordinary acupuncture is time-bound, and patients cannot tolerate treatment for many times in one day. While pyonex therapy has little stimulation, which can be retained in acupoints for continuous stimulation, and will not be affected by position and activity. Applying back-*shu* points and lower *he*-sea points to treat with diseases of *zang-fu* organs is one of the academic characteristics of School of Shao's acupuncture and moxibustion, by which, doctors often obtained good efficacy. So the authors have selected the abovementioned acupoints to treat DGE. BL 20 and BL 21 are the back-*shu* points of spleen and stomach, and acupuncture at these two acupoints can healthy spleen-stomach transportation, and regulate and supplement *qi* and blood. ST 36 is a *he*-sea point of stomach meridian, also a lower *he*-sea point of stomach, it was found in the *Song of the Four Command Points* that "all the diseases on the abdomen are related with ST 36", so ST 36 is used to treat all the digestive diseases, and it is a key acupoint for health care. It is believed in modern study<sup>[8]</sup> that BL 20,

BL 21 and ST 36 can regulate the functions of esophagus, stomach and intestines and gastric secretion function; PC 6<sup>[9]</sup>, connecting the *yinwei* vessel, is the acupoint of pericardium meridian, and can regulate three energizer meridian and pericardium meridian simultaneously; it is used to direct counterflow downward and arrest vomiting, and adjust gastrointestinal dysfunction; acupuncture at PC 6 can make the closed pylorus open, or make the opened pylorus close, showing a two-ways regulation effect<sup>[10]</sup>. SP 6 is the intersecting point of liver meridian, spleen meridian and kidney meridian, acupuncture at which can regulate the three meridians, supplement and invigorate blood, and regulate and unblock *qi* movement. "Dysphagia" and the incision are both located at esophagus, so CO 2 is needed to regulate the function of upper gastrointestinal tract.

Since DGE after esophagectomy is not common, the authors have not observed many cases. Large sample study is still needed to further explore the pathogenesis of DGE though good efficacy has been obtained. If pyonex intervention is conducted before operation to reduce the incidence of DGE, the patients' postoperative pain may be reduced greatly.

## REFERENCES

- [1] Wang LL. Accidents and Complications During Ordinary Surgical Operation(Chin). Zhengzhou: Zhengzhou University Press; 2008: 248.
- [2] Qin XY, Liu FL. The pathogenesis and treatment of postoperative gastroparesis syndrome. J Diagn Concepts Pract (Chin) 2006; 5(1): 13-15.
- [3] Li J. Diagnosis and treatment of rare complications after esophagectomy. Chin J Surg Oncol (Chin) 2013; 5(4): 261-263.
- [4] Qin XY, Liu FL. Diagnosis and treatment of postoperative gastroparesis. Chin J Digest (Chin) 2005; 25(7): 441.
- [5] Yao TJ, Wang SY. Clinical analysis of 26 patients with delayed gastric emptying after esophagectomy. Chin J Anat Clin (Chin) 2007; 12(6): 417-418.
- [6] Yu J. Diagnosis, treatment and discussion of functional delayed gastric emptying after esophagectomy. Henan J Surg (Chin) 2012; 18(2): 36-37.
- [7] Huang WJ, Hu HH, Hu L, Zheng W. 14 patients with delayed thoracic-gastric emptying after esophagectomy and cardia cancer resection. Chin J Clin Thorac Cardiovasc Surg (Chin) 2009; 16(3): 240-241.
- [8] Li ZR. Experimental Acupuncture Science (Chin). Beijing: China Press of Traditional Chinese Medicine; 2003: 220-227.
- [9] Jiang H. Acupuncture in treatment of 105 patients with postoperative gastrointestinal dysfunction syndrome.

(Turn to page 70)



cancer. Chin J Pract Chin Modern Med (Chin) 2005; 18(12): 1803.

[14] Gan WN, Liu FX, Cai HL. Supportive therapeutic efficacy of moxibustion in treatment of postpartum urinary retention. Guid J Tradit Chin Med Pharm (Chin) 2012; 18(12): 59.

[15] Hu GR. Application of moxibustion at Shuǐdào (水道 ST 28) in treatment of anorectal postoperative urinary retention. Today Nurse (Chin) 2012; 229(1): 132-133.

[16] Fan LX, Gao SF, Wang M, Sun XM. Efficacy observation of moxibustion in treatment of urinary retention after operation of lower limbs. J Hebei Med Univ (Chin) 2012; 33(2): 207-208.

[17] Deng XR, Liu Y, Zhang J. Efficacy observation of mild moxibustion in treatment of anorectal postoperative urinary retention. Chin Pract Med (Chin) 2012; 7(18): 50.

[18] Chen SZ, Hu XY, Chen JP, Gan SQ. Heat-sensitive moxibustion in treatment of 50 patients with anorectal postoperative urinary retention. Pract Clin J Integr Tradit Chin West Med (Chin) 2010; 10(3): 52-53.

[19] Chen XJ, Wang YJ, Yan HM. Efficacy observation of mild moxibustion in treatment of urinary retention after gynecologic surgery. Shanghai J Acup-Mox (Chin) 2010; 29(8): 519-520.

[20] Chen L, Chen ZH, Zhang RF, Chen HX. Clinical study of moxibustion in treatment of anorectal postoperative urinary retention. Zhongguo Zhenjiu (Chin) 2013; 33(1): 17-19.

[21] Ma CJ. Clinical study of moxibustion on Shénquè (神阙 CV 8) combined with auricular acupoint sticking in treatment of postoperative urinary retention. J Changchun Univ Tradit Chin Med (Chin) 2008.

[22] Huang SY. Efficacy observation of mild moxibustion at Zhōngjí (中极 CV 3), Guānyuán (关元 CV 4), Shímén (石门 CV 5) and Qihǎi (气海 CV 6) in treatment of urinary retention after orthopedic surgery. J Nurs (Chin) 2012; 19(8): 67-68.

ABSTRACT IN CHINESE

[摘要] 目的: 对艾灸治疗尿潴留临床随机对照研究报告进行质量评价, 为临床决策提供客观依据。方法: 电子检索中国知网 (CNKI)、中国生物医学文献数据库 (CBM)、维普期刊数据库 (VIP)、万方数据库, 英文文献数据库Scimedirect。年限为1990年1月1日至2013年6月30日。在排除无关、重复及非随机对照试验后, 筛选出符合纳入标准的穴位艾灸治疗尿潴留的随机对照试验。应用Jadad评分量表对符合入选标准的随机对照研究进行质量评价, 并用专用软件RevMan 5.2版进行统计分析。采用Cochrane系统评价的方法对穴位艾灸治疗尿潴留的随机对照试验进行系统评价。结果: 纳入的19篇文献同质性较好, Meta分析结果显示, 合并效应量OR=6.95, 95%CI (5.12, 9.44), 合并效应量检验Z=12.43, P<0.000 01, 差异有统计学意义, 提示穴位艾灸组可能优于对照组, 可认为穴位艾灸治疗尿潴留疗效较好。漏斗图显示研究对象分布较为对称, 可认为该研究的偏倚较小。结论: 穴位艾灸治疗尿潴留有一定优势。但纳入研究的样本含量少、文献质量较低, 有待补充一些大样本、高质量、方法学规范的随机对照试验来进一步验证。

[关键词] 穴位艾灸 尿潴留 有效性 系统评价 Meta分析

(Continue from page 59)

Lishizhen Med Mater Med Res (Chin) 2003; 14(6): 364.

[10] Tang JH, Chen YZ. Observation of motion of pylorus caused by acupuncture at Nèiguān (内关 PC 6). Zhongguo Zhenjiu (Chin) 1997; 17(11): 655-656.

ABSTRACT IN CHINESE

[摘要] 目的: 探讨揶针治疗食管癌术后胃排空障碍的临床疗效。方法: 23例食管癌患者在常规治疗方法的基础上在脾俞 (双)、胃俞 (双)、内关、足三里、三阴交、耳穴食道埋入揶针治疗, 4日更换一次针具, 5次为一疗程, 1个疗程后评价疗效。结果: 患者1次治愈1例, 占4.4%; 2次治愈2例, 占8.7%; 3次治愈10例, 占44.5%; 4次治愈7例, 占30.4%; 5次治愈3例, 占13.0%。经过1~5次治疗, 23例全部治愈, 占100%。结论: 揶针辅助治疗食管癌术后胃排空障碍有较好疗效。

[关键词] 揶针 食管癌 胃排空障碍