

# Research Progress on Integrated Traditional Chinese and Western Medicine in the Treatment of Post-Cholecystectomy Syndrome

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**Abstract:** Laparoscopic cholecystectomy (LC) is a highly accepted treatment at this stage, with the increasing incidence of biliary tract disease and the development of endoscopic technique in recent years. However, some patients after cholecystectomy still have symptoms similar to preoperative symptoms, such as abdominal pain, diarrhea, indigestion and so on. This series of syndromes has become a common clinical problem at present. This article reviews the research progress of etiology, pathogenesis, diagnosis and treatment of post-cholecystectomy syndrome by reading related literatures.

**Keywords:** Postcholecystectomy Syndrome; Traditional Chinese Medicine Treatment; Research Progress

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## Introduction

The term post cholecystectomy syndrome (PCS) refers to a syndrome in which, after surgical removal of the gallbladder, the original clinical symptoms have not disappeared or, on this basis, new symptoms have developed, such as discomfort with abdominal tightness and distension, abdominal pain, shoulder and back pain, dyspepsia, nausea or vomiting with vomiting, eructation, and increased frequency of stools, and specific biliary symptoms such as severe right upper quadrant pain, biliary colic, fever, jaundice, etc. [1] The onset can occur from within days postoperatively to years postoperatively. General "abdominal pain", "jaundice", "biliary distension" in Chinese medicine.

## 1. Pathogenesis of post cholecystectomy syndrome

### 1.1 Pathogenesis of traditional Chinese Medicine

The traditional Chinese medicine holds Dan as the province of "Qiheng", which is also the first of "six Fu" organs. The liver and bile are mutually episodic. [2] The clinical symptoms of PCS can be assigned to the categories of "flank pain", "jaundice", "biliary distension", and "fullness" in Traditional Chinese Medicine. According to Prof. Zhengxue Pei, after damage to the human body by the scalpel, the human Qi is made deficient, which causes qi stagnation and blood stasis, liver stagnation, and transverse spleen stomach, so that after cholecystectomy, more gallbladder stumps and gastrointestinal infections exist. [3] Traditional Chinese medicine believed that the disease location was still hepatobiliary, and involved the spleen and stomach, and the disease mechanism was an adverse effect of Shaoyang main and collateral channels. [4]

## 1.2 Pathogenesis of Western Medicine

The current western medical pathogenesis of PCS is not very clear, and it is currently believed that the etiology of PCS is related to bile duct stones before operation, and about half of the patients with bile duct stones develop PCS after cholecystectomy, and the statistical significance of PCS in this category of patients after open or laparoscopic cholecystectomy reaches 4.76-7.34%.<sup>[5-6]</sup> The predisposing factor is either related to the damage caused by the operating instruments during the operation or to the residual gallbladder, part of the bile duct, bile that accumulates in the stump predisposing to inflammation or stone formation again triggering PCS.<sup>[7]</sup> Duodenal parapapillary diverticula were present in 38.5% of the patients with PCS.<sup>[8]</sup> Therefore, some authors believe that duodenal parapapillary diverticulum is also a common pathogenic factor of PCS. Jiaqing Wu<sup>[9]</sup> suggested that the onset of PCS is closely related to the thickness of the gallbladder wall, the number and size of stones, the patients' emotions and life habits. When the gallbladder is surgically removed and the function of the bile duct is not fully compensated to replace gallbladder function. After cholecystectomy, bile is discharged into the bile duct, duodenum, after losing the concentration effect of the gallbladder, causing abdominal discomfort and other gastrointestinal symptoms.<sup>[10]</sup>

## 2. Diagnosis of post cholecystectomy syndrome

Among the imaging examinations, hepatobiliary and pancreatic spleen color ultrasound, endoscopic ultrasound (EUS), computed tomography (CT), magnetic resonance cholangiography (MRCP), and endoscopic retrograde cholangiopancreatography (ERCP) were performed. Color ultrasound is easy, fast and noninvasive in the clinic, and is usually used as the initial screening test to exclude gallbladder and bile duct diseases, but it can be disturbed by feeding conditions, gases and other factors, so it is often used as the initial screening test for hepatobiliary pancreaticosplenic diseases. CT is relatively good for stones, bile duct dilatation, pancreatitis, tumours, but may be too small a diameter of the stone to make a missed diagnosis. MRCP, ERCP are widely used in clinical departments, and both have high-definition development ability and can clearly present stone number, size, and location. EUS can be used to find distal common bile duct and ampullary lesions, and also has a high diagnostic yield of 88.9% for stones less than 4 mm in diameter.<sup>[11]</sup>

## 3. Management of post cholecystectomy syndrome

### 3.1 Traditional Chinese medicine treatment

Traditional Chinese medicine (TCM) has not uniformly developed a syndrome type classification for PCS, and based on clinical experience, various doctors make an approximate classification of the disease. Clinically, Yangyang Wu<sup>[12]</sup> applied Chaihu Shugan powder plus and minus formula to treat PCS with remarkable efficacy. Zhengxue Pei<sup>[13]</sup> believed that the treatment of PCS should be Shu-gan- Li-dan, and Chai-hu-Shu-gan-San are often used to treat the disease in clinic. At the same time, acupuncture can be combined, however, Xiran Su<sup>[14]</sup> selected acupuncture points such as Dan Shu, Yang ling quan, and Taichong in clinical studies and applied electroacupuncture, which make Qi and blood in the meridians smooth to improve symptoms with significant efficacy.

### 3.2 Western medicine treatment

When patients experience stomach discomfort and regurgitant acid after surgery, proton pump inhibitors are used to inhibit the secretion of gastric acid and relieve the symptoms of stomach pain and regurgitant acid. Jiali Wei<sup>[15]</sup> when the patient developed functional dyspepsia postoperatively, deanxit combined with Mosapride was given, compared with the effect of Mosapride alone was prominent. Since more than half of patients with bile duct stones develop PCS postoperatively,

Because many symptoms occur after cholecystectomy, the etiology can be found in most cases by the ERCP technique, and the technique has many advantages such as safety, little patient suffering, and few complications, ERCP treatment should be considered the first choice for PCS patients with indications for endoscopic treatment. <sup>[16]</sup>In patients with PCS sphincter of Oddi dysfunction was observed in some patients, and after LC operation, bile normally secreted by the liver loses the space for concentration and storage, bile drained into the bile duct thereby causing the intra biliary pressure to rise, and irregularly drained into the duodenum through sphincter of Oddi, affecting its normal physiological function. <sup>[17-19]</sup> However, conservative treatment is still the generally recommended treatment with symptomatic supportive treatment, such as acid suppression and promotion of gastrointestinal motility, maintenance of water electrolyte balance, administration of vitamins and hepatoprotective treatment, and administration of antiviral and antispasmodic and sedative treatment if necessary. <sup>[20]</sup>

## 4. Summary

When a cholecystectomy is performed, it is an invasive procedure that is traumatic, and more or less has an impact on the autonomic function of the patient, with a range of postoperative symptoms occurring. <sup>[21]</sup> In Traditional Chinese Medicine treatment, it is important to emphasize that treatment based on syndrome differentiation and postoperative peace of mind and a light diet are effective means, establishment of a standardized TCM treatment regimen for PCS <sup>[22]</sup> In the treatment of Western medicine, PCS revisited prevention, a clear preoperative diagnosis, intraoperative attention to protect the surrounding normal anatomical structures, avoid accidental damage are effective steps in the prevention of PCS.

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