



Clinical effect of traditional Chinese spinal orthopedic manipulation in treatment of Functional Abdominal Pain Syndrome



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ABSTRACT

Objective: To evaluate the clinical effect of Traditional Chinese Spinal Orthopedic Manipulation (TCSOM) in treating Functional Abdominal Pain Syndrome (FAPS) in comparison with Pinaverium Bromide (Dicetel, PBD), and to assess a possible cause for FAPS.

Methods: 60 cases of FAPS patients were randomly assigned to the TCSOM group and PBD group according to the random number table method. The TCSOM group was treated with thumb pressing manipulation, every other day in the first week, and once every three days in the second week, for 5 times treatments. Patients in the PBD group were instructed to take 50 mg 3 times a day, consistently for 2 weeks. The symptoms of pre-treatment and post-treatment were assessed on a visual analog scale (VAS) pain score. A symptom improvement rating (SIR) was implemented in order to evaluate the effects of the treatments, and to statistically compare the two groups.

Results: The symptoms of 21 patients of the TCSOM group were resolved soon after the first spinal manipulation treatment and 4 cases were significantly improved. The VAS pain scores in the TCSOM group were significantly lower than those in the PBD group after 2 weeks treatment. According to the SIR based on VAS, the TCSOM research group included 20 cases with excellent results, 8 cases with good, and 2 cases with poor. There were no side effects in the TCSOM group after treatment. Based on VAS, the PBD research group reported 6 cases with excellent results, 8 cases with good and 16 cases with poor. All cases were statistically analyzed, revealing a significant difference ($P < 0.001$) between the two groups.

Conclusion: TCSOM group performed much better than PBD group for relief of the symptoms of FAPS. Thumb pressing manipulation on the thoracic and/or lumbar region can correct the displacement of inter-vertebral discs and/or vertebra, resolving the stimuli caused by pressure exerting on the nerves and vessels around the spine.
Treatment: with thumb pressing manipulation on the Back-Shu acupoints, the Jiaji (EX-B2) and the governor vessel acupoint had a very good clinical effect for abdominal pain indicating that it is an effective treatment for FAPS.

1. Background

Functional Abdominal Pain Syndrome (FAPS, category D) is one of six major categories of Functional Gastrointestinal Disorders.¹ FAPS represents a pain syndrome attributed to the abdomen that is poorly related to gut function, and is associated with some loss of daily activities, and has been present for at least 6 months. The pain is constant, nearly constant, or frequently recurring. The principal criterion differentiating FAPS from other functional gastrointestinal disorders, such as irritable bowel syndrome (IBS) and functional dyspepsia, is the lack of symptom relationship to food intake or

defecation. FAPS commonly is associated with a tendency to experience and report other somatic symptoms of discomfort, including chronic pain thought to be related to the gynecologic or urinary systems.²

The etiology and pathophysiology are incompletely understood and the diagnostic criteria has been based on the Rome III Multiconsensus Group in 2006.¹ The epidemiology of FAPS in North America range from 0.5% to 2%, the disorder is more common in women, with prevalence peaking in the fourth decade of life.³ A study reported in the United States, the average work absenteeism of FAPS patients is 11.8 days per year and contributes to an average number of doctor's visits of 7.2 times per year compared with other functional disorders,

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where the averages are 4.2 times and 1.9 times respectively.⁴ Patients with FAPS have higher work absenteeism and health care utilization and, thus, impose significant economic burden.⁴

A wide range of therapeutics including antidepressants, anticonvulsants, psychotherapy relaxation techniques, and complementary therapies are being used, however, FAPS frequently raises serious medical problems and economic burden. There are not effective therapeutics being medical filed accepted for FAPS till now.² It is very difficult to treat for FAPS' etiology and pathophysiology being incompletely understood. In traditional Chinese medicine, there are many effective ways to relieve abdominal pain as acupuncture and traditional Chinese spinal orthopedic manipulation, and so on.

Traditional Chinese spinal orthopedic medicine is a branch of the traumatology and orthopedics of traditional Chinese medicine. It is under the guidance of the basic theory of traditional Chinese medicine. It includes traditional Chinese spinal orthopedic manipulation (TCSOM), traction therapy, functional exercises, acupuncture and moxibustion and herbal medicine. When TCSOM is applied as part of a medical treatment, depending on the patient's symptoms, a sensation test, palpation, and imaging examination, the thumb(s), or arms of the practitioner are often used to move or press the patient's spine into correct alignment. TCSOM is based on the theory of Traditional Chinese Medicine, human anatomy, biomechanics, and radiology.⁵

2. Materials and methods

2.1. Diagnostic criteria

Patients were recruited from the outpatient treatment department in Zhongda Hospital. All of the 60 patients fulfilled the diagnostic criteria for FAPS (2006).²

Diagnostic criteria for FAPS must include all of the following:

(1) Continuous or nearly continuous abdominal pain; (2) No or only occasional relationship of pain with physiological events (eg, eating, defecation, or menses); (3) Some loss of daily functioning; (4) The pain is not feigned (e.g., faking the pain, or malingering for secondary gains); (5) Insufficient symptoms to meet criteria for a different functional gastrointestinal disorder that would explain the pain.

Diagnostic criteria must be fulfilled for the last 3 months with symptom onset at least 6 months before diagnosis.

2.2. Inclusion criteria

(1) Patients must fulfill the diagnostic criteria for FAPS and have symptoms currently; (2) Patients are between the age of 18–60; (3) Patients must be tested with routine blood examination, erythrocyte sedimentation rate, blood biochemistry, C reactive protein and occult blood in stool; (4) FAPS patients must concurrently suffer from back pain, with the contingency that these symptoms must be less severe than the FAPS symptoms; (5) Patients/participants must give informed consent to treat.

2.3. Exclusion criteria

Exclusion criteria included pregnancy or breast-feeding; menopause; use of certain medications including anticholinergics, smooth muscle relaxants, motility stimulants and/or antidepressants; current alcohol or drug abuse; inflammatory bowel disease (ulcerative colitis or Crohn's disease); gastric and duodenal ulcers; cancer of the GI tract; celiac disease or diabetes mellitus; vertebral fracture; central herniation of lumbar inter-vertebral disc; post-operation of the spine; serious osteoporosis; vertebral tuberculosis and vertebral tumors or cancer.

2.4. General material

60 cases of FAPS patients were observed in this study, all of whom

were recruited from the outpatient department of Zhongda Hospital of Southeast University between March 2013 and April 2015. The patients were randomly assigned to two groups according to the random number table method of randomization. One group was treated with Traditional Chinese Spinal Orthopedic Manipulation (TCSOM) and the other with a pharmaceutical drug. The demographic breakdown of the TCSOM treatment group (n = 30) included 12 men and 18 women, with ages ranging from 18 to 60 years [(34 ± 11) years] old, and the course of disease ranging from 1 to 11 years. All the patients in the TCSOM group were treated with 5 times treatments, which consisted of a Chinese spinal orthopedic manipulation, administered by a qualified doctor with over 10 years of clinical experience of TCSOM. The patients who were treated with TCSOM received 5 times spinal manipulations. The demographic breakdown of the pharmaceutical group (n = 30) included 13 men and 17 women, with ages ranging from 19 to 59 years [(36 ± 10) years], and the course of disease ranging from 1 to 12 years. There were insignificant differences between the two groups in sex, age, disease duration, pre-treatment VAS (P > 0.05).

3. Methods

3.1. PBD group

Patients were treated with Pinaverium Bromide Dicletel (Abbott Products SAS, Chatillon sur Chalaronne, France), a calcium agonist used to relieve GI spasms, pain, transit disturbances, and other functional intestinal disorders. The PBD group was instructed to take 50 mg three times a day, consistently for two weeks.

3.2. TCSOM group

Patients were treated with Chinese spinal orthopedic manipulations, for five times treatments. Before treatment with spinal manipulation, the following examinations were conducted.

3.2.1. Sensation test

The patient's sensory perception of the skin of the chest, abdomen and back were examined prior to the treatment, as chronic back pain and FAPS have been found to be associated with generalized musculoskeletal hyperalgesia.⁶ Sensibility to pain may be normal, reduced (hypo-algesia), absent (analgesia), or increased (hyper-algesia).⁷ Paresthesia can often be observed on the skin of the abdomen and back which correspond accordingly to the spinal nerve by which it is controlled.

3.3. Palpation

This is one type of examination and diagnosis belonging to the practice of Traditional Chinese Medicine. The pads of the fingers are used to press along the spine in order to locate spinous processes that are not in alignment. There is often tenderness reported by the research participant/patient while having the soft tissue palpated, as well as the structures adjacent to these processes. Between T₇–L₃, on one or two sides of the spinous processes, there can be several taut soft tissue projections felt, which are closely located perpendicularly to the spine area. It is these taut soft tissue projections that are believed to be the cause of FAPS, which were treated with spinal manipulation in the TCSOM group of FAPS patients.

3.4. Imaging examination

X-ray and/or magnetic resonance imaging examinations of patients may show displacement of vertebra, inter-vertebral stenosis, inter-vertebral angle variation, hyper-osteogeny of vertebra, spinous processes deviated, and/or disc narrowing. These conditions can be observed in the thoracic and/or upper lumbar vertebrae.

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