

Case Report

Therapeutic Effect of *Nangan-geon* for an Elderly Patient with Refractory Abdominal Pain: a Case Report

Chang-Gue Son

Liver and Immunology Research Center, Oriental Medical College in Daejeon University

Objective: To inform a clinical usefulness of *Nangan-geon* (暖肝煎) decoction to treat a refractory abdominal pain especially in elderly.

Methods: This case report presents an 85-year old male patient who had been suffered with a refractory abdominal pain without any abnormality in laboratory test and radiological examination for 5-years. The clinical outcome was observed by numerical rating scale (NRS) of self-reporting method.

Results: Based on his previous multiple normal examination results from Western hospitals and clinical features including thin body (19.6 BMI), nocturnal pain around lower abdomen and cold-sensitivity, author diagnosed him as “*deficiency and cold of liver-Qi* (肝氣虛寒)” similar to intestinal spasm. After prescription with *Nangan-geon* (暖肝煎) for one month, all symptoms became improved notably (NRS 5), and almost completely recovered as a level of normal condition in 3 months (NRS 1).

Conclusion: This study would show the potential of traditional Korean medicine (TKM) therapies for a refractory functional abdominal pain, and especially efficacy of *Nangan-geon* against cold-pattern of nonspecific abdominal pain in elderly patients.

Key Words : Elderly patient, Refractory abdominal pain, Intestinal spasm, *Nangan-geon*, Traditional Korean medicine

Introduction

Abdominal pain is common in elderly patients (≥ 65 years old), accounting for 20% of patients presenting abdominal pain complaints to emergency department¹⁾. This abdominal pain remains one of the most challenging because atypical presentations are very frequent as well as symptoms are often nonspecific even in serious disease in geriatric patients²⁾. Approximately 50% of elderly patients seeking emergency department with abdominal

pain were hospitalized, and their mortality rates have been relatively very high likely between 11% and 14%³⁾.

The continuous increase of aged population raises a medical issue of abdominal pain in elderly. A wide range of disorders can cause abdominal pain in the geriatric population, from a constipation to diseases in biliary tract, bowel obstruction, gastric ulcer, appendicitis, pancreatitis, urogenital diseases or mesenteric ischemia⁴⁾. Although the recent advanced technologies

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• Correspondence to : Chang-Gue Son
Liver and Immunology Research Center, Daejeon Oriental Hospital of Daejeon University
35235 Daedukdae-ro 176 bun-gil 75, Seo-gu, Daejeon, Republic of Korea
Tel : +82-42-484-6484, Fax : +82-42-470-9005

including computerized tomography (CT) scan significantly improved the accurate and rapid diagnosis of causative condition of abdominal pain, many cases of elderly patients tend to present the vague pain without specific findings on examinations^{5,6)}. In addition, a functional abdominal pain in the elderly often confound physicians, which presents chronic or recurrent pain in abdominal region not explained by structural or biochemical abnormalities⁷⁾.

The clinical and diagnostic assessments in elderly patients is commonly limited by the lowered immunity-related milder and late symptoms, comorbidities, unclear history-taking, and painkillers interfering localization of tenderness⁸⁾. Accordingly, in management of elderly patients with abdominal pain, the understanding the feature of geriatric abdominal pain along with clinical acumen and tact are strongly demanded.

This study aimed to report a case of elderly patient suffering from chronic and severe nocturnal abdominal pain, which has been not improved by Western therapies but cured after administration of *Nangan-geon* (暖肝煎).

Case report

A 85-year old male had suffered from chronic and severe abdominal pain around umbilical and lower abdomen, whose abdominal pain started without any episode from 5-years ago. His pain has a typical pattern; mostly happen during night particularly between 1 am to 6 am. The pain was to be feeling stiff or squeezing around umbilical region and lower abdomen as a level of moderate to severe. In addition, he felt inclination for stool several times without real defecation on the same

times. The patient had visited emergency room frequently or regular clinics for diagnosis and treatment. No specific abnormality however was found in several medical examinations including abdominal x-ray, sonogram, CT scan and chemistry in university hospitals and clinics, respectively.

His abdominal pain was not recovered even multiple medications at all. This frustrating condition let the patient visit author' clinic in a Korean hospital. On the interview and physical examinations, the patient presented a lack of appetite, but no close relation between pain and eating or defecation. The patient showed a small body frame (around 52 kg), and lost 5 kg during the last 5 year (47 kg, 19.6 BMI). He hadn't used alcohol or smoking, and had no specific family history. He didn't have medication history for hypertension or diabetes mellitus, then underwent medical procedure for lumbar spinal stenosis on 10-years ago. Except a slight anemia (hemoglobin 11.9 g/dL) and a little gas finding in gastrointestinal track, no specific abnormality was observed from blood tests and a simple abdomen X-ray in author' hospital (Fig. 1A and B). On abdominal examination, abdominal tenderness was a little hard at central area, and both hands and feet were cold. He didn't present any painfulness but rather than felt comfortable by the pressure with a hand at umbilical and lower abdomen. Author noticed that he has been very sensitive to cold, which was supported by a body temperature pattern using digital infrared thermal imaging (DITI) system (Fig. 1C). His whole skin and nails were very dry, and he had a tongue with a white color coating in surface along with a weak and rapid pulsation.

Based on the characteristics of symptoms and

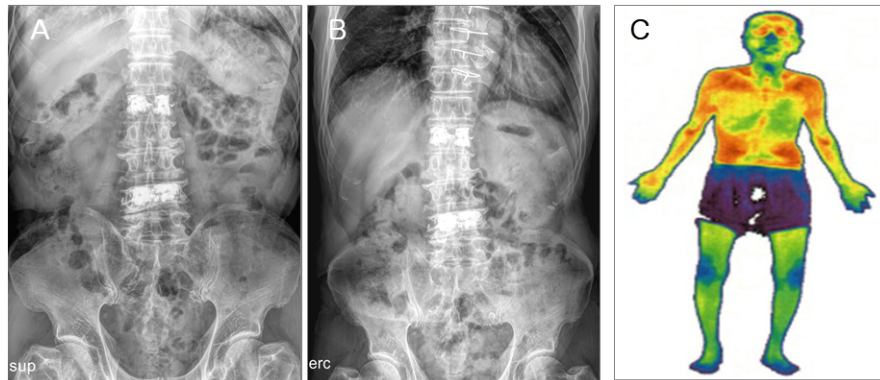


Fig. 1. Radiological findings and body temperature imaging.

No specific abnormality was found in simple abdominal X-ray, supine (A) and erect position (B). The cold-pattern was appeared around lower extremity and lower abdomen from digital infrared thermal imaging (C).

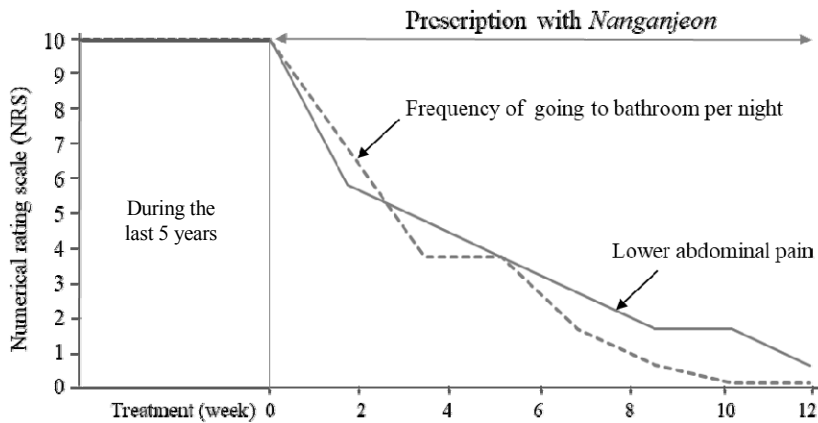


Fig. 2. Summary of clinical outcome and treatment course

physical features, author diagnosed his abdominal pain as “deficiency and cold of liver-Qi (肝氣虛寒)”, and prescribed *Nangan-geon* (暖肝煎, Table 1). The changes of symptoms were assessed by self-reported numeric rating scale (NRS) comparing to 10 for his usual level of pain. After taking the decoction for one month, his abdominal pain was reduced notably (NRS 5), along with the improvement of the keeping going to the bathroom

at night. The abdominal pain and other symptoms gradually improved, and almost disappeared by a level of normal condition (NRS 1~2) in three months (Fig. 2). This patient lived far apart from author’ hospital, thus acupuncture (mainly at both HT7 and SP6) and indirect moxibustion (CV4 and CV8) were given only twice during whole treatment days.

This study had been proved by This case study

had been approved by the Institutional Review Board for Human Research of Daejeon University Daejeon Hospital (Approval Number: DJDSKH-22-E-09-1)

Discussion and Conclusion

The atypical presentation and high incidence of complications in elderly people imply the relative high chance of missed diagnosis and difficulty in proper treatment, accordingly the abdominal pain in elderly patients is a clinical challenge for physicians⁹⁾. In general, biliary tract diseases (approximately 20%) and pancreatitis (approximately 5%) are known as the most common reasons for abdominal pain in geriatric patients by results from emergence department³⁾. The feature of abdominal pain in the patient was notably different with disorders of hepatobiliary system or pancreatitis, and no abnormality from serial examinations such as abdominal CT and other tests in the past 5 years. Furthermore, none specific finding was observed in examination for urinary system.

In the case of no causative abnormality in systemic examinations, patients are generally diagnosed as nonspecific abdominal pain (NSAP)

likely this patient. NSAP would be common among geriatric patients. For example, both studies from Turkey and Korea reported 30.6% of 676 patients and 25.6% of 207 patients (both aged ≥ 65 years) who visited emergency departments were diagnosed as NSAP, respectively^{10,11)}. Author diagnosed this patient as an abdominal pain by 'deficiency and cold of liver-Qi (肝氣虛寒)' which led to chronic colon spasm during night. This had been made based on the the characteristics of squeezing-like abdominal pain (mainly from 1 am to 6 am on lower abdomen) and keeping use of the restroom without defecation, cold-sensitivity, and a white color-coated tongue with weak-rapid pulsation. The unorganized contraction of muscles lining the colon could be painful and obvious, which is called as colonic spasms¹²⁾. Not necessarily so, colonic spasms would be associated with irritable bowel syndrome (IBS), causing other symptoms such as cramping, bloating and a sudden feeling of needing to pass stool¹³⁾.

In fact, any medical instrument to determine the colonic spasm is not available in clinics. No doctor gave a diagnosis of colonic spasm to the patient previously, and author also wasn't sure the disorder. Although hyoscine butylbromide is used

Table 1. Composition of *Nangan-jeon*

Scientific name	Herbal name	Chinese name	Dose*
<i>Lycium chinense</i> Miller	Lycii Fructus	枸杞子	24.0 g
<i>Angelica gigas</i> Nakai	Angelicae Gigantis Radix	當歸	16.0 g
<i>Poria cocos</i> Wolf	Poria Sclerotium	白茯苓	16.0 g
<i>Foeniculum vulgare</i> Miller	Foeniculi Fructus	小茴香	16.0 g
<i>Lindera strichnijfolia</i> Fernandez-Villar	Linderae Radix	烏藥	16.0 g
<i>Cinnamomum cassia</i> Presl	Cinnamomi Cortex	肉桂	8.0 g
<i>Aucklandia lappa</i> Decaisne	Aucklandiae Radix	木香	4.0 g

* The indicated dose is weight of each herb for an adult during one day

for patients with gastric or intestinal spasms, no drug or way to cure the recurrent type of colonic spasms exists¹⁴. Whereas, administration with *Nangan-jeon* rapidly improved his nocturnal abdominal pain and frequency of need to go bathroom. *Nangan-jeon*, first appeared in *Gyeongakjeonseo* (景岳全書), is a multi-herbal formula to treat ‘cold symptoms of the liver- and kidney-Yin (肝腎陰寒證)¹⁵. This formula has been prescribed to patients with contractive pain of lower abdomen or groin, and woman infertility under condition of ‘liver-kidney cold’^{16,17}. This case of patient presented a classical feature of cold pattern with condition of deficiency, likely cold-sensitivity with a thin and dry skin and whole-body including nails, favorable feeling to warm-hand pressure on abdomen and his tongue and pulse diagnosis. The overall collections of symptoms and physical features let us to make a diagnosis of ‘deficiency and cold of liver-Qi (肝氣虛寒)’ instead of ‘spleen-kidney Yang-deficiency (脾腎陽虛)’, ‘cold-type hernia (寒疝), or ‘cold symptoms of large intestine (大腸寒證), which would be similar but different patterns.

In general, tissue temperature and blood flow mutually interplay, and body core temperature rapidly goes down from midnight and reach the lowest on 4 to 5 am^{18,19}. One clinical study reported the efficacy of *Nangan-jeon* on unstable angina, indicating the blood flow-accelerating action of this decoction¹⁵.

The elderly population is continuously increasing worldwide, which is same pattern in Korea, likely reaching 16.4% of aged 65 and over in 2020²⁰. Aging influences the sensory, affective, and cognitive-evaluative components affecting the final

pain response, thus physicians should pay a careful attention on history and physical examination to reassure the absence of a life-threatening disease⁷. If the diagnosis deserves to be accurate, traditional Korean medicine (TKM) could be well practiced for disorders frequently occurred in aged people, including functional abdominal disorders²¹.

In summary, this case study showed the TKM-derived potential to cure a refractory abdominal pain in elderly patients.

Conflict of interest statement

The author declares that he has no conflict of interest

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ORCID

Chang-Gue Son <https://orcid.org/0000-0002-6963-5229>