

# Chronic Gastroesophagitis Treated Successfully with Novel Taping Therapy: A New Approach to the Treatment of Digestive Disorders

Hwa Soo Hwang K<sup>1</sup>, Bong Hyo Lee K<sup>2\*</sup>, Emily Bien B.S<sup>3</sup>, Arnyce R. Pock<sup>4</sup> and Lisa A. Osborne<sup>5</sup>

<sup>1</sup>Chims-Saengvit Oriental Medicine Clinic, Theosuperium 105, 3001-2 Bangbae-dong, Seocho-gu, Seoul 137-974, Republic of Korea

<sup>2</sup>Department of Acupuncture, Moxibustion and Acupoint, College of Korean Medicine, Daegu Haany University, 136 Shincheondong-ro, Suseong-gu, Daegu 42158, Republic of Korea

<sup>3</sup>Senior medical student at the F. Edward Hébert School of Medicine, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Rd, Bethesda, MD, 20814 USA

<sup>4</sup>Department of Medicine, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Rd, Bethesda, MD, 20814 USA

<sup>5</sup>Daniel K. Inouye Graduate School of Nursing, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Rd, Bethesda, MD, 20814 USA

\*Corresponding author: Bong Hyo Lee, Department of Acupuncture, Moxibustion and Acupoint, College of Korean Medicine, Daegu Haany University, 135 Shincheondong-ro, Suseong-Gu, Daegu 42158, Republic of Korea, Tel: +82-53-819-1828; Fax: +82-53-768-6340; E-mail: [dlqhdgy@dhu.ac.kr](mailto:dlqhdgy@dhu.ac.kr)

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## Abstract

**Objective:** Our previous studies have shown that taping therapy ameliorated neuropsychiatric symptoms such as chronic insomnia and depression. Here we report two cases of gastroesophagitis accompanied with additional chronic symptoms that were successfully treated by using a novel taping therapy.

**Case presentations:** (a) a male patient suffering from chronic gastroesophagitis complained of digestive malfunction for over 20 years, along with several neuropsychiatric symptoms. Some of these symptoms were refractory in nature, as the patient had tried a variety of other treatments without success; (b) a 59-year-old female who felt a burning sensation in her stomach for about 30 years.

**Interventions:** Medical tapes equipped with silver and optic fibers were applied at key acupoints, trigger points, and sensitive response points as identified by finger pressure or pinch in related areas.

**Results:** (a) Immediately after the first treatment, radial pulse decreased from 78/min to 68/min. After 2 treatments, the pharyngitis was markedly improved. After 7 treatments, the patient's symptoms of chronic gastroesophagitis markedly improved, although the associated symptom of rhinitis persisted. After an additional 7 treatments, all of his remaining symptoms were completely resolved and his digestive problems did not recur during a 60-day follow-up period; (b) the burning sensation decreased after the first treatment. Following a series of daily treatments for 1 week, her symptoms disappeared.

**Conclusions:** Tactile examination of selected-acupoints and trigger points can be a useful tool for evaluating digestive disorders. Regulation of bioelectric currents on the relevant points with using Chimsband® can be helpful for treating chronic gastroesophagitis.

**Keywords:** Digestive disorder; Abdomen discomfort; Throat pain; Burning sensation; Bioelectricity; Oriental medicine

hoarseness, heartburn, chest pain, nausea, vomiting, abdominal pain, and/or decreased appetite [4].

## Introduction

Gastritis is a very common digestive disease with a prevalence of 50% in the world population. *Helicobacter pylori*, a well-known cause of this condition, has been reported to have a prevalence rate of up to 90%, depending on the region [1]. Patients with chronic gastritis generally suffer from symptoms of upper abdominal pain, indigestion, bloating, nausea, vomiting, belching, loss of appetite and/or body weight. While medications are commonly recommended [2], they may not always be effective, as shown by a recurrence rate of up to 20% [3].

Esophagitis is also a major problem in the digestive system, frequently caused by chronic gastroesophageal reflux. Symptoms may include dysphagia, regurgitation, pain with swallowing, sore throat,

Medications are commonly used for the treatment, however many patients continue to suffer from this condition [5]. While gastritis and esophagitis can occur separately, there are patients with chronic disease who may present with both conditions. Since these diseases are not easily treated with medications alone, the possible use of a non-chemical therapy is worthy of formal study.

Recently, complementary and alternative medicine (CAM) has been gradually gaining increasing interest in diverse fields, as an adjunct to conventional, Western medicine. In Oriental medicine, non-pharmaceutical therapies such as acupuncture have long been used to treat a wide range of diseases including digestive problems [6,7], some of which have gained acceptance as useful and effective modalities. Included in the latter is the taping therapy.

A key benefit of such an approach is that it is non-invasive and rarely painful. However, to date, taping treatments have primarily been used for the treatment of muscular diseases, including movement disorders or musculoskeletal pain. Consequently, there are very few studies regarding the use of non-pharmaceutical therapy, such as taping for gastritis or esophagitis.

In the present study, we report two cases of chronic, refractory gastroesophagitis that were successfully treated using a taping therapy that is substantially different from the conventional taping therapy (Kinesio taping). Indeed, we have suggested that this taping therapy which regulates bioelectric currents at acupoints and trigger points (TPs) could also be useful for the treatment of neuropsychiatric diseases such as insomnia and depression [8,9].

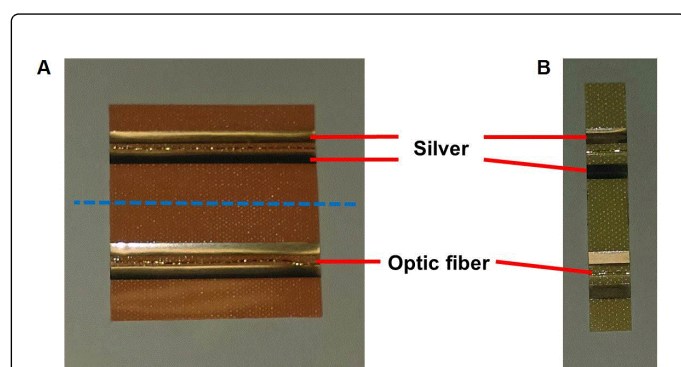
As a result, we hypothesized that chronic gastroesophagitis might be related to stress and/or to neuropsychological problems, and if so, that the application of taping therapy could be effective and might be in avoiding the need for surgery. Based on this hypothesis and our practical experience, we will first discuss a case in which a patient with a 20-year history of chronic, refractory gastroesophagitis was effectively treated with therapeutic taping, thereby introducing a promising new strategy toward the treatment of digestive disorders.

## Methods

### Materials

The Chimsband (Chims-Saengvit Oriental Medicine Clinic, Seoul, Korea) [9] is a novel medical tape that uses a combination of silver and optic fibers in addition to a standard adhesive (Figure 1). Each piece has two functional components: O and ne component is comprised of two silver lines (length of 24 mm and width of 2 mm for type A; length of 4 mm and width of 2 mm for type C) and a single optic fiber (length of 24 mm and width of 0.5 mm for type A; length of 4 mm and width of 2 mm for type C).

The size of type C is 1/6 of that of type A, and is the only structural difference between types A and C. Silver and optic fibers were used because of their high electrical conductivity.



**Figure 1:** Appearance of type A (A) and C (B) of Chimsband. One piece has two functional units and one unit has two silver lines (length of 24 mm and width of 2 mm for type A; length of 4 mm and width of 2 mm for type C) and one optic fiber (length of 24 mm and width of 0.5 mm for type A; length of 4 mm and width of 2 mm for type C). The blue line in the type A is the cutting line for the attachment to the digastric muscle.

## Interventions

Treatment simply involved attaching Chimsband tapes to sites on the patient's body that correlated to the underlying etiology, as guided by the classical meridian theory of traditional Oriental medicine, or, that elicited a painful or sensitive response with digital palpation (finger pressure examination).

To enhance the therapeutic effect at the digastric muscle, the type A Chimsband was cut (along the blue line) and each composition was applied separately (Figure 1A). In all other instances, the standard sized Chimsband tapes were used without alteration.

## Evaluation of improvement

Improvement of symptoms was evaluated by the patient, using a visual analog scale (VAS) ranging from 0 (perfect satisfaction) to 10 (most severe or discomfort) [10-12]. Termination of medications, maintenance of a down-regulated, resting radial pulse, alleviation or disappearance of symptoms and, a decrease in the area or intensity of painful responses were all considered as evidence of progressive improvement.

## Ethical information

This study was performed in compliance with general ethical standards and included obtaining the consent written by the patient.

## Case presentation

### Case 1

**History and examination:** A 40-year-old male who was 5.8 feet tall, and weighed 154 pounds, visited Dr. Hwang's clinic and presented with a chief complaint of a persistent right sided irritation in his throat, which was more painful when speaking. He also felt bloated and complained of a burning sensation in his stomach that that was worse on the right.

The pain was frequently present throughout the day, and the patient often felt sick to his stomach regardless of eating. His mouth was dry, and he had a longstanding history of rhinitis, dizziness, and insomnia. He experienced chronic fatigue and over several years his face had gradually developed a darkened degree of pigmentation b. His digestive malfunction had been present for at least 20 years.

The patient had tried a diverse array of treatments including medications, dietary therapies, and other complementary and alternative medicines however, none had been effective. He had taken the Propolis, a dietary supplement used to enhance immune function, based on the idea that his long illness might be due to a weakness of his immune system.

The patient had no other significant past medical history, although he did report experiencing a significant amount of stress as a result of being the head of a large sales department. Family history was notable in that his mother also had suffered from esophagitis.

Routine assessment at his first visit revealed the following: pulse of 78/min, blood pressure of 110/80, body temperature of 36.6, and a thickly coated tongue. To identify the optimal treatment points, a finger pressure examination was performed at the local and symptom related-sites, with particular focus on identifying any sensitive or painful acupoints and/or trigger points.

## Treatment and progress

**First treatment (May 9<sup>th</sup>, 2014):** The finger pressure examination was performed at the digastric muscle, given the patient's primary complaint of throat irritation. Palpation revealed marked pain and sensitivity at the right side. As a result, a type A of Chimsband was cut in half, with half being attached at the right digastric muscle, covering the trigger points (TPs) (Figure 2).

In the abdomen, we examined the rectus abdominis muscle, searching for a clue for the patient's symptom of diffuse, abdominal bloating and burning in the whole stomach. Interestingly, on the left, painful responses were limited to the muscle only, however on the right abdomen, diffuse tenderness was elicited, with sensitivity to palpation extending to the right flank. A whole piece of type A was applied to the TPs of the rectus abdominis muscle and to reactive spots on the right side of abdomen (Figure 3).

Examination of the lower abdomen detected painful responses at the lower rectus abdominis muscle and external oblique muscle, and so type A was attached to these areas as well. In addition, Examination examination of the pectoralis muscle revealed the presence of several painful points, and so given the patient's symptoms of dry mouth, rhinitis, dizziness, insomnia [9], fatigue, and a dark face, type C [8,9] of Chimsband was applied to these location as well.

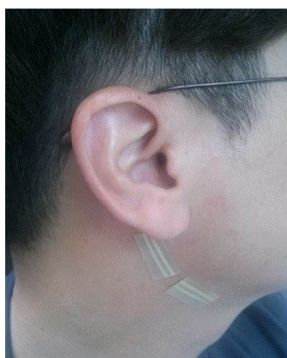


Figure 2: Attachment of half piece of type A to the digastric muscle

Once all the tapes were in place, and immediately following completion of this initial treatment, the patient's radial pulse had decreased to 68/min and the patient's feeling of persistent throat irritation disappeared.

Additionally, the throat pain that occurred when speaking, as well as the presenting abdominal discomfort, was both markedly improved immediately following this treatment. The patient was released to home and advised to leave all of the applied tapes in place until the next visit.

**Second treatment (May 12<sup>th</sup>):** The patient reported that the painful and irritated feeling in his throat which was most severe upon wakening throat, which was most severe upon wakening, was markedly improved. Even more, the sense of nausea and abdominal malaise were also improved, as was the patient's ability to sleep.

The thick coating on his tongue was less pronounced and the presenting pulse was 68/min. We applied a new series of Chimsband tapes in the same manner as the first treatment. Since, the patient also exhibited painful responses to palpation around the middle of his back

(from the 4<sup>th</sup> to 12<sup>th</sup> thoracic level), at the left erector spine muscle (at 11<sup>th</sup> and 12<sup>th</sup> thoracic levels), and between the 11<sup>th</sup> rib and iliac crest on the flank, type C Chimsband tapes were applied to each of these reactive locations as well (Figure 3).

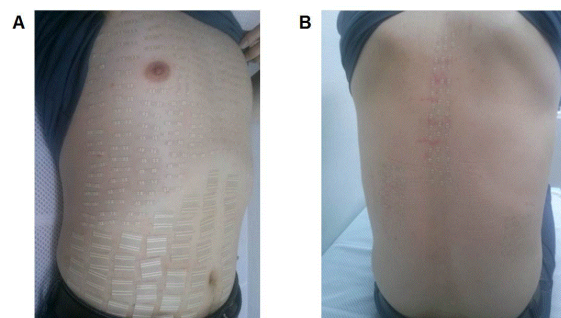


Figure 3: Attachment of type C on the chest and attachment of type A on the abdomen (A); attachment of type C on the back and flank (B).

**Third treatment (May 16<sup>th</sup>):** The presenting symptom of a sore irritated throat continued to improve as did the patient's sense of chronic fatigue, nausea and malaise. Interestingly the patient took off all of the applied Chimsband tapes a day before his scheduled follow-up, as he wanted to see if the positive changes were really attributed to the use of the Chimsband. Within 24 h of removing the tapes, most of his presenting symptoms returned. Re-applying the tape in the same manner with the second treatment quickly alleviated the tender responses on his upper back and flank.

**Fourth treatment (May 19<sup>th</sup>):** The patient's abdominal muscles were noted as being softer and more pliable than at his initial (baseline) examination. His face was also found to be notably brighter than at his prior visit. However, symptoms of rhinitis, fatigue, and dizziness were more pronounced and he felt shaky, even though his pulse was 68/min and regular. Tapes were attached again in the same manner, as the second treatment however additional tapes were applied to the right sternocleidomastoid muscle and to the right dorsal nose in order to address the symptoms of rhinitis and dizziness (Figure 4).

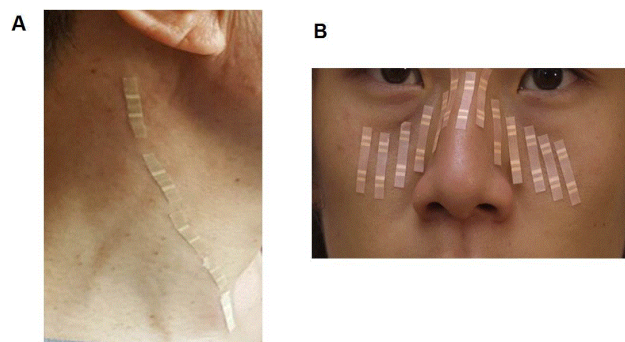


Figure 4: Attachment of type C on the sternocleidomastoid muscle (A); attachment of type C on the dorsal nose (B).



**Fifth treatment (May 21<sup>st</sup>):** All problems in the throat and the abdomen were markedly improved however the patient continued to report feeling somewhat shaky and again noted persistent rhinitis. Radial pulse was 68/min. Taping was performed in the same manner, as on his previous treatment.

**Sixth treatment (May 23<sup>rd</sup>):** The tender and painful pressure points on the patient's back were completely resolved, however symptoms of rhinitis and subjective 'shakiness' persisted. A new set of Chimsband were applied to the same areas, excluding the back.

**Seventh treatment (May 28<sup>th</sup>):** The right sided abdominal discomfort along with the feeling of being shaky and dizzy had completely disappeared. The patient's sense of fatigue had also decreased, however the complaint of persistent rhinitis remained. Treatment was performed in the same manner.

**Eighth treatment (May 30<sup>th</sup>):** All of the digestive complaints were completely resolved. However, the patient continued to report persistent rhinitis. Areas of previous tenderness point were noted as being markedly diminished. Pulse was 64/min. Treatment was repeated in the same manner.

**Ninth treatment (Jun 2<sup>nd</sup>):** The patient reported feeling much better. Pulse was 64/min. Tapes were attached in the same area.

**Tenth treatment (Jun 3<sup>rd</sup>):** Rhinitis was markedly improved, so a fewer number of tapes were applied to the same areas and the patient was asked to return to the clinic in two weeks.

**First follow-up 1 (Jun 16<sup>th</sup>):** The patient reported the isolated recurrence of some right lower quadrant pain. Tenderness to palpation was detected at the external oblique muscle and type A tapes were applied to the digastric muscle and to areas on the pectoralis major muscle, and right abdomen, where painful responses were also detected.

**Follow-up 2 (Jun 23<sup>rd</sup>):** Right lower quadrant tenderness had completely resolved, however the patient complained of unsatisfactory sleep. Pulse was 63/min. Chimsband was attached to trigger points on the digastric muscle and to tender sites on the chest.

**Follow-up 3 (Jun 26<sup>th</sup>):** The patient felt well and presented without complaint, however tenderness to palpation was elicited at the right lower abdomen, below the rib in the flank, and on the chest. Pulse was 62/min. We applied a set of Chimsband tapes at tender sites, using the same approach as with the previous treatment.

**Final follow-up (Aug 1<sup>st</sup>):** The patient's presenting sleep disorder had fully resolved, and the patient felt much better, reporting an improvement in his overall digestive function as well. The presenting complaint of throat pain had also resolved and the associated symptoms of abdominal pain and distress were significantly improved as well.

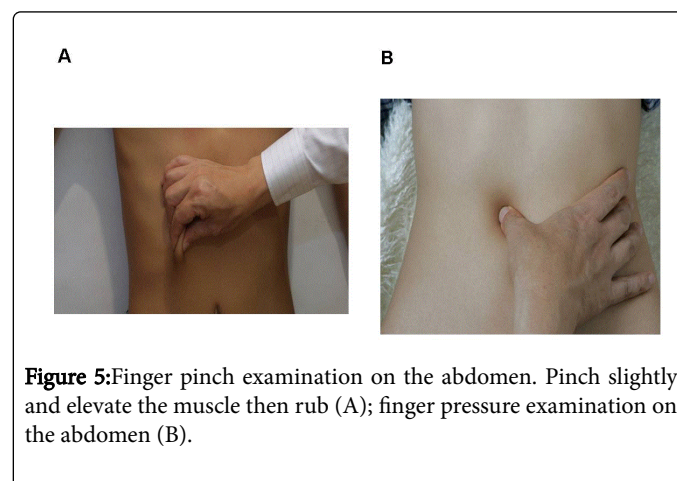
The patient chose to quit using Propolis early in the course of his treatment and remained well without it. The VAS was 8 at the first visit and decreased to 2 at the final treatment.

## Case 2

**History and examination:** A 59-year-old female who was 5.1 feet tall and weighed 141 pounds, presented to Dr. Hwang's clinic with a chief complaint of a burning sensation, which had been present since her early 30s. Several examinations including endoscopy found no evidence of underlying pathology.

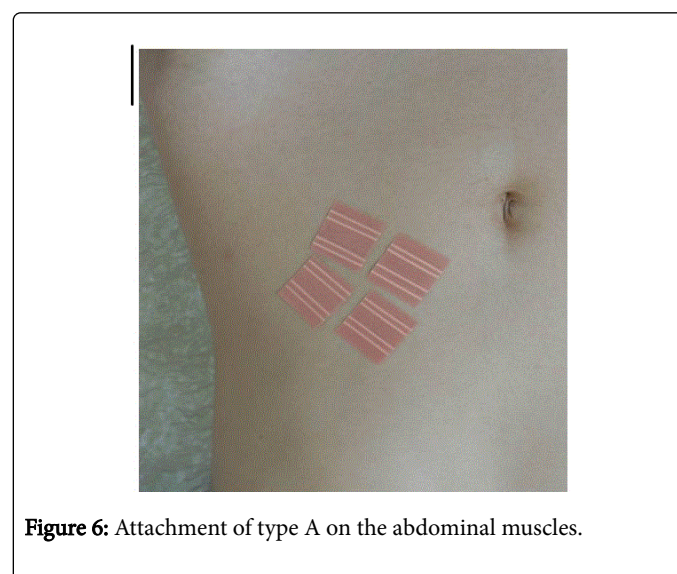
She had tried a diverse array of other treatments without success and even during our examination she felt burning. The burning sensation was always located in the right lower abdomen. Digestion, defecation, and sleep were normal and she had no family or significant past medical history. Pulse was 78/min and blood pressure was 110/80.

When the skin overlying the abdomen was elevated, gently pinched and then rubbed (Figure 5), the patient showed an unusual sensitive local response. Also, a similar response appeared during the finger pressure examination (Figure 5).



## Treatment and progress

Following finger examinations, type A of Chimsband tapes were applied to the sensitive areas on the right lower abdomen. Two minutes later the patient reported that the burning sensation had disappeared. Thinking that originally it had been constantly retained during day time, the sudden appearance of effect was very surprising. We instructed her to change tapes daily, and after 1 week, the patient stated that the burning did not recur. When we re-examined her abdomen the sensitive response was markedly reduced. We taught her how to re-apply these tapes if her symptoms recurred. However she had no further recurrences at her 1 month follow up.



## Discussion

In the first case, the patient not only presented with signs and symptoms of a chronic digestive disorder, but also exhibited symptoms such as stress and insomnia, which may have been reflective of some underlying neuropsychiatric problems as well. The patient had experienced these symptoms for nearly 20 years, and in addition to his complaints of persistent sore throat, he had been diagnosed as having chronic gastroesophagitis, with associated symptoms of a bloated and/or burning sensation in his stomach, a dry mouth, darkened face, with periodic dizziness, rhinitis, insomnia and fatigue—none of which had responded well to prior therapies.

Treatment was initiated by using a finger pressure examination of the related acupoints and TPs, as well as at locations where the patient reported pain or tenderness. Chimsband tapes were then applied at each of these locations. In the beginning, we attached half pieces of type A at TPs on the digastric muscle as treatment for the patient's complaint of throat irritation, dry mouth, and nausea and/or vomiting, because this muscle is known to be associated with oral and esophageal problems and interacts with the rectus abdominis muscle, with regard to the digestive function (Figure 2) [13]. We also attached type A at each of the locations that exhibited subjective tenderness upon finger pressure examination. When asked if any other areas on the patient's abdomen were tender or painful, we detected an area of reactivity on the external oblique muscle and at the inner area of the right iliac crest. In addition, the palpation of the patient's back revealed a large area of increased sensitivity that extended to right flank. These patterns are consistent with the fact that undigested-food often tends to accumulate on the right side of the abdomen. Consequently, the patient's right-sided tenderness was thought to be related to problems in this area and is why we attached tapes in this location (Figure 3). We also applied Chimsband to the pectoralis muscle as a way of treating some of his neuropsychiatric symptoms, as they seemed to be associated to the gastroesophagitis. Placement of tapes in this location not only helped relieve the neuropsychiatric or stress-related symptoms such as insomnia, stress, and fatigue, but also the patient's chief complaint of a persistently sore and irritated throat. In fact, our previous studies have suggested that the application of Chimsband at the pectoralis muscle can be effective for relieving chronic neuropsychiatric symptoms such as insomnia, depression, or fatigue (Figure 3) [8,9]. The tenderness to palpation that the patient reported around the mid-line of his back—between the level of the 4<sup>th</sup> and 12<sup>th</sup> thoracic spine was thought to be reflective of his esophageal symptoms, and was treated by applying Chimsband to the pectoralis muscle (Figure 3). Additional tapes were applied to the sternocleidomastoid muscle and to sensitive or painful locations on the patient's nose and face (Figure 4), in order to treat the patient's symptoms of persistent rhinitis. This made sense since the sternocleidomastoid is known to be related to problems of sensory organs [13] and several sinus cavities are located in and around the nose.

According to the meridian theory of Oriental medicine, distal points are not only linked to other points, but also influenced by their related-organs and may reflect a pathophysiological status. Our patient exhibited some unusual patterns of point tenderness. The fact that he had so many points of abdominal tenderness may have been a result of his having digestive problems for such a long time (20 years).

Another interesting aspect was that the patient's zone of tenderness to point palpation extended all the way down to the right flank, whereas it was restricted to the rectus abdominis on the left. In meridian theory, these zones are controlled by the Gall bladder (GB)

meridian and correspond to the acupoints of GB25-GB28 [14]. Therefore, these phenomena were thought to be reflective of a problem relating to the GB meridian. Secondly, the accompanying neuropsychiatric symptoms of insomnia and fatigue persisted for several weeks, fluctuating even when the patient's abdominal discomfort had improved. In Oriental Medicine, acupoints in the chest area are often used to treat neuropsychiatric symptoms as well as flank pain, chest discomfort, and insomnia [14,15]. That is why, in our previous studies, we found it effective to apply Chimsband at these points when treating symptoms of chronic insomnia and depression [8,9]. In this case, Chimsband tapes were also applied to the sternocleidomastoid muscle to further aid in the treatment of insomnia. This was based on the fact that there is an acupoint that can be used to address sleep disorders on the mastoid process, where this muscle originates [14,15]. Interestingly, this muscle is also under the GB's control (GB12) [15], and the GB function is closely related to sleep [16]. Furthermore, our previous study reported that using Five Element Acupuncture to tonify the GB meridian resulted in improved total sleep and subjective sleep quality in a case of chronic insomnia [17]. Taken together, it appears that the insomnia may be linked to the presence of digestive disorders through the GB meridian, with one affecting the other, as in chronic gastroesophagitis.

In addition to the insomnia, which persisted even after the first patient's GI symptoms had improved, the patient continued to report the presence of chronic rhinitis. Interestingly, the sites around nose that were treated with tapes are under the correlated with the Stomach (ST) meridian's control [14,15] which passes through the rectus abdominis muscle. This suggests that the sensitive or painful responses around the patient's maxillary sinus and nasal cavity were not only related to the ST meridian, but that the painful areas in the rectus abdominis may have been reflective of a connection between the patient's symptoms of rhinitis and his digestive complaints.

Based on this knowledge and the fact that there were remaining painful responses in the chest and abdomen in spite of marked disappearance of the main symptoms, we tried to remove all symptoms as completely as possible, with focusing at the left painful responses, particularly since symptom relief is highly predictive for the maintenance of healing [5]. Finally, the stabilization and reduction of the patient's radial pulse from 78 to less than 70 per min correlated with the resolution of his presenting symptoms. Most of all, the follow-up 60 days later confirmed that none of his digestive symptoms had recurred. As a result we believe that accompanying symptoms, even if neuropsychiatric in origin, should be addressed and treated along with symptoms of chronic gastroesophagitis. The fact that some of the patient's symptoms such as his rhinitis, fatigue, dizziness, shakiness, and/or constipation transiently worsened during the course of treatment may have signified that his body's ability to endure the change that chronic problems induced had been weakened and was only restored once a more holistic balance was reestablished.

According to the myofascial pain syndrome theory, the presence of TPs are associated with certain abnormal bioelectric currents [13,18,19]. Therefore, it follows that normalizing the deviant bioelectric currents at TPs might induce therapeutic effects. This is why the Chimsband incorporates the use of silver and optic fibers (Figure 1) and why we attached this tape at symptomatic TPs after eliciting sensitive or painful responses.

In short, this case demonstrated the successful use of Chimsband tape as a means of treating a patient with treatment-resistant, chronic gastroesophagitis. As in our previous studies, it seems that the

regulation of bioelectric currents at sensitive or painful response sites yields therapeutic results. The fact that the patient's symptoms which initially improved, recurred when the patient prematurely removed the applied Chimsband tapes while he was receiving active treatment, and that these same symptoms again improved once the tapes were replaced, further suggests that the taping was both effective and therapeutic.

In the second case, the patient was generally healthy except for the chronic burning sensation. Based on the TP theory a burning sensation limited to a specific area is induced by the TPs of the oblique muscle and rectus abdominis muscle, we performed finger pressure and pinch examinations. As anticipated, we found sensitive responses on the local site where the muscles are located. Immediately after attachment, the symptom that had not stopped during day time decreased markedly. Following self-treatment for 1 month, it did not recur. This case was relatively easier than the first however the duration of almost 30 years shows that it was not easy to treat. Based on our experiences, we are convinced that this therapy may be effective for chronic digestive disorders.

## Conclusion

In summary, we presented two patients with a longstanding history of chronic gastroesophagitis, whose symptoms were effectively relieved by the application of Chimsband medical tapes. Regulating patient's bioelectric currents by placing Chimsband at these locations can be a safe and effective option for treating certain forms of chronic digestive disorders.

## Consent Statement

Written informed consents were obtained from all the patients with permission to publish this paper. Copies of the written consents are available for review by the Editor of this journal.

## Authors' Contributions

All authors wrote the manuscript together. Hwa Soo Hwang, KMD treated the patient, prepared the figures, and drafted the initial text in Korean. Bong Hyo Lee, KMD, Ph.D. drafted the text in English and completed the manuscript. All The other authors discussed, revised draft in English draft, and contributed to the preparation of making the final manuscript.

## Disclaimer

The views expressed in this article are those of the authors and do not reflect the official policy or position of the Uniformed Services University of the Health Sciences, the Department of Defense, or the United States Government.

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