

Pediatric Finger Warts Treated Using Taeumjowi-tang: a case report

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Warts caused by the human papillomavirus (HPV) are generally treated with cryotherapy, CO₂ laser ablation, interferon injections, and bleomycin injections. However, it is sometimes difficult to treat children because the treatment can be painful. In addition, recurrence may occur after treatment. In this study, warts completely disappeared following the administration of herbal medicine in two children, with warts in multiple parts of the hands and around the nails. Two pediatric patients visited the hospital for treatment of warts around their fingers and nails. Both patients received Taeumjowi-tang (TJT) as a decoction for 60 days. TJT was performed twice per day for the 11-year-old patient and once per day for the 7-year-old patient. Patient progress was observed monthly, and the visual condition of the warts was photographed during the visits. After approximately two months of treatment, the warts disappeared from the fingers and nails of both patients. This case study suggests that the oral administration of TJT may be effective for pediatric patients with warts. Further studies are required to determine the efficacy and safety of these therapies.

Keywords: case report, korean medicine, pediatric warts, warts

INTRODUCTION

Warts are caused by epidermal infections, resulting from the human papillomavirus (HPV), and primarily emerge through contact or autoimmunity. Warts can occur at any age but tend to appear between 12 and 16 years old. Cryotherapy is the primary method for treating warts, whereas CO₂ laser ablation, keratin-dissolving agents, and thermal therapy are also used [1]. However, cryotherapy typically induces significant pain, particularly for periungual warts, and can cause nail deformation. In addition [2], CO₂ laser ablation entails severe pain, a substantial risk of scarring, and a high recurrence rate [1].

Regarding pediatric warts, administering treatments that can cause pain poses a challenge. Accordingly, there is a pressing need for novel therapies associated with minimal or no pain, supplementing current conventional methods. Research exploring effective Eastern medical treatments for warts with minimal pain has evaluated moxibustion treatment [3] and bee-venom

injection [4]. However, studies examining the treatment of warts with pain-free herbal medicines have not been reported thus far.

This study reports the effective treatment of warts using herbal medicine in two pediatric patients who previously encountered challenges in undergoing potentially painful treatments. Prior studies have shown that Taeumjowi-tang (TJT) inhibits the growth of prostate cancer cells by activating the AMPK pathway [5]. TJT has also shown demonstrated efficacy in treating obesity, suppressing ulcers, acting as an antioxidant and anti-aging agent, improving cranial nerve and liver function, and exhibiting anti-hyperlipidemic properties [6]. Nonetheless, its treatment effect on warts has not yet been investigated. Therefore, this study not only proposes a painless and effective treatment for pediatric warts but also contributes to expanding the indications of TJT.

1. Taeumjowi-tang (TJT)

TJT is an herbal medicine documented in the “Longevity and Life Preservation in Eastern Medicine (東醫壽世保元),” a book on Korean medicine. TJT was administered orally in the form of a decoction, according to the prescribed composition outlined in the “Longevity and Life Preservation in Eastern Medicine (東醫壽世保元).” The volume of one pouch of herbal medicine was 100 mL. Table 1 displays the weights of the medicinal ingredients contained within this volume.

CASE PRESENTATION

1. Case 1

An 11-year-old girl, without underlying diseases, presented at a Korean medicine clinic with warts on her nails on May 1, 2023. She had previously been diagnosed with warts by a dermatologist around May 2022. From May 2022 to March 2023, she underwent cryotherapy six times; however, the warts recurred, persisted, and spread to her other fingers. In addition, the pain resulting from cryotherapy raises concerns regarding patients’ ability to continue treatment. Because she had symptoms such as coldness of the body (身寒), fullness after eating (食後痞滿), and frequent diarrhea, she was diagnosed with a pattern of spleen deficiency with dampness encumbrance (脾虛濕困) and cold pattern (寒證) [7]. Therefore, for clinical treatment, 100 mL of TJT was administered twice daily for 60 days, with prescriptions issued at 30-day intervals. Before concluding the TJT treatment course, the patient visited the clinic for a follow-up to assess the warts. One month post-treatment, the warts were absent from all but two fingers, and by the end of

the second month, the warts disappeared from all fingers (Fig. 1, Supplement 1).

2. Case 2

A 7-year-old girl, without underlying diseases, attended a Korean medicine clinic with warts on her finger warts on May 29, 2023. She had been diagnosed with warts by a dermatologist around January 2023. From January 2023 to April 2023, she underwent cryotherapy twice, but the size of the warts increased. In addition, due to her young age, the patient experienced difficulty enduring the pain caused by cryotherapy. Because she has symptoms including fullness of the stomach (腹脹滿), frequent diarrhea, dry skin, and absence of sweating (無汗), she was diagnosed with dual deficiency of the lung-spleen (脾肺氣虛) and exterior pattern (表證) [7]. Therefore, for the clinical treatment, 100 mL of TJT was administered once daily for 60 days, and prescribed for 30 days at a time. Before the TJT regimen ended, the patient visited the clinic for a follow-up on the warts. When she revisited the clinic approximately one-month post-treatment, it was confirmed that the size of the warts on her 1st and 2nd fingers had decreased. After two months, the warts on both fingers disappeared (Fig. 2, Supplement 2).

DISCUSSION

Warts are a symptom of HPV infection, which is a DNA virus. Common warts, predominantly caused by HPV types 1 and 2, are the most frequently observed, mainly occurring on the back of children’s hands and around their nails [8].

Moreover, both cellular and humoral immunity are involved in HPV infection; cellular immunity influences the disappearance of wart lesions, whereas humoral immunity affects the recurrence of warts [9]. Consequently, instead of resorting to conventional treatments such as cryotherapy, surgical resection, electrocution, and CO₂ laser therapy, immunotherapy options have been explored. For example, high doses of cimetidine have recently been administered, and bleomycin and interferon have been injected into wart lesions [10, 11]. Although the treatment efficacy of bleomycin or interferon injection has been proven, the injections may be painful [12, 13]. In a study of 55 patients administered cimetidine orally, 19 patients (34.5%) exhibited dramatic clinical improvement or complete remission of their warts. Conversely, the remaining 36 patients showed either no effect or only a partial response [14].

Table 1. Prescription of Taeumjowi-tang

Herbal medicine	Composition of herb medicine	Weight (g)
Taeumjowi-tang	Coicis semen	6
	Castanaee semen	6
	Raphani semen	4
	Scizanrae fructus	2
	Ophiopogois radix	2
	Acori rhizoma	2
	Platycoid radix	2
	Ephedrae herba	2
	Total amount	26



Figure 1. Progression of warts in Case 1 throughout the treatment period.

In Eastern medicine, warts are attributed to an external pathogen invading the skin and forming “water dampness (濕痰)” due to compromised circulation of “body fluid (津液) [15].” TJT, as defined in “Longevity and Life Preservation in Eastern Medicine (東醫壽世保元)”, is a compound for treating the “greater yin person (太陰人)”. The application of TJT aims to

address water dampness and improve circulation due to a lack of “exhale-dispersing qi (呼散之氣) of Lung (肺) [16].”

TJT consists of *Coicis semen*, *Castanae semen*, *Raphani semen*, *Schizandrae fructus*, *Ophiopogonis radix*, *Acori rhizoma*, *Platycoide radix*, and *Ephedrae herba*. *Coicis semen* induces diuresis and reduces dampness. *Castanae semen* serves to tone

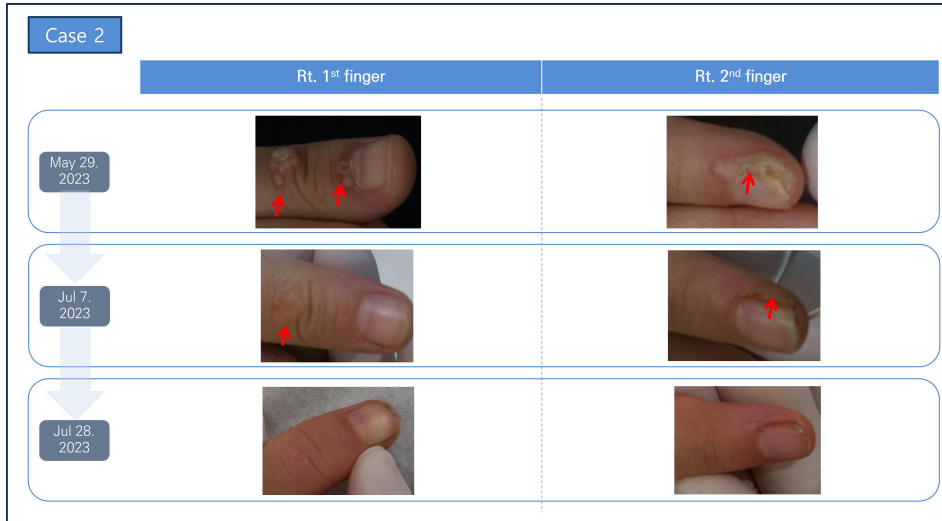


Figure 2. Progression of warts in Case 2 throughout the treatment period.

up and replenish the lung qi, while Raphani semen promotes digestion and dispels phlegm. *Schizandrae fructus* and *Ophiopogonis radix* aid in regulating lung fluid production, and *Ophiopogonis radix* moisturizes the lungs and promotes fluid generation. *Acori rhizoma* alleviates dampness and tranquilizes the mental state. *Platyoid radix* diffuses into the lungs to resolve phlegm, and *Ephedrae herba* promotes sweating, releases fluids into the external environment, and induces diuresis [17]. In particular, *Coicis semen*, the principal herb in TJJ, has demonstrated efficacy in promoting the spontaneous regression of viral skin infections in previous studies [18] and exhibits antiviral effects [19], which are believed to be effective in treating warts. In addition, a study involving the treatment of warts with *Coicis semen*, in conjunction with acupuncture and moxibustion, supports the effectiveness of *Coicis semen* in treating warts [20].

This study is the first to treat warts in children using TJJ administration and demonstrates value as an alternative necessary approach for treating warts in pediatric patients who are vulnerable to pain. Additionally, our preliminary results indicate the potential for treating warts in children through painless oral medication. However, because there was no additional follow-up after the treatment was completed, the effectiveness of TJJ on pediatric warts cannot be conclusively confirmed. Also, experimental and large-scale clinical studies are necessary to elucidate the mechanisms underlying the TJJ treatment of warts.

PATIENT OBSERVATIONS

1. Case 1

“I was worried about warts around my nails, but it was good to be treated without pain by taking herbal medicine.”

2. Case 2

“I was scared because cryotherapy was so painful, but I’m glad warts disappeared through oral taking of herbal medicine. Remarkably, warts disappeared after taking herbal medicine.”

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ETHICAL APPROVAL

This study was reviewed and approved on Dec 28, 2023 by the Institutional Review Board of Korea national institute for bioethics policy (Reference No. P01-202312-01-030). The requirement for written consent was waived for the two patients with seborrheic dermatitis included in this case report.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest in this work.

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SUPPLEMENTARY MATERIALS

Supplementary data is available at <https://doi.org/10.3831/KPI.2024.27.2.172>.

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