

Case Report

Treatment of Recalcitrant Plantar Wart Unresponsive to Cryotherapy with Acupuncture and Moxibustion: A Case Report

Soo Bo Shim¹, Hyun Kyung Sung^{2*}, Hye Lim Lee^{1*}

¹Department of Pediatrics, College of Korean Medicine, Daejeon University

²Department of Pediatrics, College of Korean Medicine, Semyung University

Objectives: Plantar wart is a common viral skin disease caused by human papillomavirus infection and poses a therapeutic challenge in the paediatric patient population. Acupuncture and moxibustion are effective treatments for a wide range of skin conditions.

Case report: This study presents the case of a 9-year-old girl for whom complete resolution of recalcitrant warts was achieved with acupuncture and moxibustion treatment.

Results: After 20-week treatment, the wart lesions and pain were completely resolved. At the 6-month follow-up, the lesions remained fully resolved.

Conclusion: This result suggests that acupuncture and moxibustion could be effective therapeutic strategies for plantar warts.

Key Words : Warts, Plantar warts, Acupuncture, Moxibustion

Introduction

Warts are a common viral skin disease, caused by human papillomavirus infection, having high prevalence rates ranging between 5% and 30% in children¹⁾. There are numerous treatments for warts, such as liquid nitrogen, cryotherapy, and excision. Liquid nitrogen is the most frequently used treatment for warts; however, the treatment procedure is generally very painful. Topical salicylic

acid, and cryotherapy are often used for plantar warts. Excision is not recommended, as it leads to frequent recurrences or scarring²⁾. Furthermore, in the case of therapy-resistant lesions, laser and photodynamic therapy approaches could be used³⁾ but these methods are time-consuming and costly.

Therefore, in the case of plantar warts, both first- and second-line treatments are generally still unsatisfactory due to their low efficacy, low local tolerability, and high recurrence rate⁴⁾.

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• Correspondence to : Hye Lim Lee

Department of Korean Pediatrics, Daejeon Korean Medicine Hospital of Daejeon
75, Daedeok-daero 176beon-gil, Seo-gu, Daejeon, Republic of Korea
Tel : +82-42-470-9138, Fax : +82-42-477-9007, E-mail : hanilim03@gmail.com

• Correspondence to : Hyun Kyung Sung

Department of Korean Pediatrics, Semyung University, St. Semyung 65, Jecheon, Republic of Korea
Tel : +82-43-841-1739, Fax : +82-43-856-1731, E-mail : shksolar@gmail.com

Acupuncture is the insertion of fine needles into specific body sites. It has been used successfully to treat acute skin eruptions, acne, atopic dermatitis, psoriasis, warts, and leg ulcers⁵⁾. Meanwhile, moxibustion is a procedure that uses the heat generated by the burning of herbal preparations to stimulate specific points for treating disease⁶⁾. It is used as a treatment for a wide range of conditions, including osteoarthritis, supportive cancer care, and cutaneous warts⁷⁾. Recent research has shown that moxibustion is effective in the treatment of cutaneous warts, and that acupuncture is an effective treatment for HPV-related warts through the modulation of the immune system. However, the use of acupuncture and moxibustion in the treatment of recalcitrant plantar warts has not been reported until now. We report a case of recalcitrant plantar wart successfully resolved after acupuncture and moxibustion treatment.

Case Report

A 9-year-old healthy Korean girl presented to our department with three recalcitrant plantar warts on her soles. The wart lesions had been present for over 6 months and had failed to respond to cryotherapy. At first, there was one lesion on the left sole, and it did not disappear even after cryotherapy, but spread to the another sole, resulting in two more lesions on the right sole. She complained of pain while walking, standing, and even wearing shoes. Physical examination revealed that the lesions were hyperkeratinized and filled with punctuate black dots. The largest lesion measured 10 × 15 mm



Fig. 1. Lesions at first visit

(Shown in Fig. 1). She had no significant past medical or medication history.

She received acupuncture treatment using disposable hand acupuncture needles (0.18 mm × 8.0 mm stainless steel needle, Dongbang Inc., Chungnam, Korea) and moxibustion treatment using mini moxa cones made of *Artemisia argyi* (Dongbang Inc., Chungnam, Korea) once a week for 20 weeks.

Acupuncture treatment was performed by board-certified paediatrician of Korean medicine who are members of the association of paediatrics of Korean medicine. Acupuncture treatment was performed directly on all the wart lesions, without using specific meridian points. Depending on the size of the wart lesion, the number of needles varied from 10 to 30 per lesion. As the size of the wart became smaller, the number of needles also decreased. The needles were inserted at oblique angle to a depth of 2~3mm at each acupuncture point. There were no specific needle stimulation and no specific response was obtained such as qi arrival and obtaining qi. Acupuncture treatment was performed once weekly, and needle retention time was 15 minutes per session.



Fig. 2. Lesions at 20 weeks after treatment



Fig. 3. Lesions at 6 months follow-up

Moxibustion was placed directly on the lesions using indirect moxibustion. When 80% of moxa cone had burnt off and the patient could feel the burning, the moxa cone was removed with forceps, and another cone was placed. We repeated this sequence two times on all lesions within a single session.

Initially, acupuncture and moxibustion sessions were difficult to conduct, as the patient expected that she would feel pain, but we could proceed with the treatment after explaining the need for treatment and obtaining consent from the patient. At the 8th week of treatment, a burn occurred on other left toe without wart during moxibustion treatment; it was treated with a dressing and followed up at every visit.

After 12 weeks of treatment, the hyperkeratotic lesion and black dots disappeared. Eight weeks later, the lesions and pain were completely resolved (Shown in Fig. 2). At the 6-month follow-up, the lesions remained fully resolved (Shown in Fig. 3, 4). The patient stated that the discomfort felt while wearing shoes had disappeared after the treatment, and she was

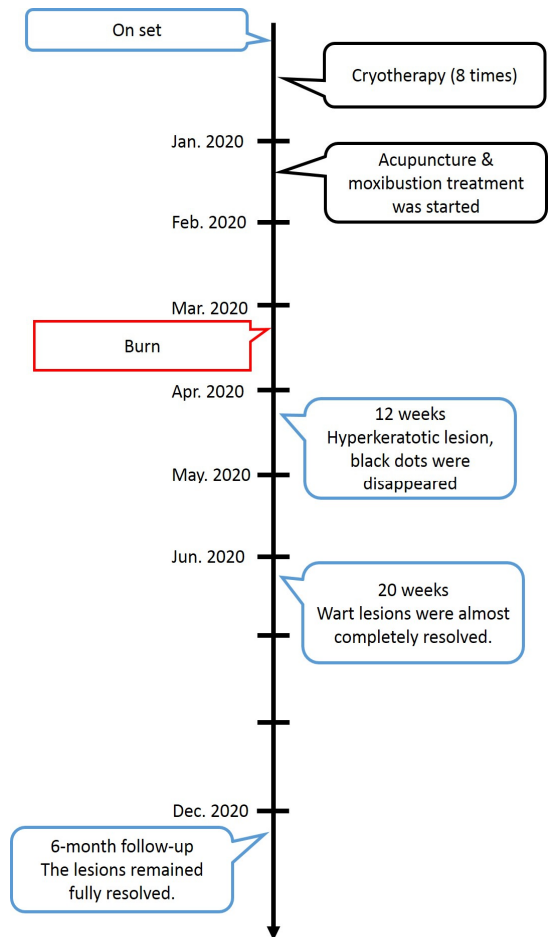


Fig. 4. Wart treatment timeline

satisfied with the treatment.

Consideration

In this case report, we demonstrated the use of acupuncture and moxibustion in the treatment of therapy-resistant plantar warts, with a high clinical efficacy. It is remarkable that complete clearance of the wart lesion was achieved with a 20-week treatment without any pre-treatment curettage or additional treatments.

Warts have high prevalence rates ranging between 5% and 30% in children¹⁾. Among them, plantar warts account for 30% of all cutaneous warts. Spontaneous resolution of warts within 2 years is common in children. However, recalcitrant cases can cause considerable morbidity⁸⁾.

There are numerous treatments for warts, including destructive therapy, virucidal therapy, antimetabolic therapy, and immunotherapy. Epidermal damage can be produced by chemical means, such as salicylic acid, or by physical means, including cryotherapy, lasers, photodynamic therapy, or hyperthermia. However, some treatment could be very painful with a long downtime posttreatment period, and the treatment of plantar wart remains a challenge⁹⁾. Cryotherapy, which is currently commonly used as a conventional treatment, has severe pain during treatment and pain that lasts 1~2 days after treatment. In addition, there are potential adverse events such as blistering, scarring and skin irritation, and in most cases, blister management is essential¹⁰⁾. In the case of the plantar warts, the lesion area is easily irritated, making it difficult to manage after treatment. Therefore, Korean medicine treatment

methods are being studied as complementary and alternative treatments.

According to previous studies on the Korean medicine treatment for wart, most of them reported combinations of herbal medicine, acupuncture, moxibustion, and pharmaco-puncture. In addition, herbal medicine was the main treatment option in the studies involved, and acupuncture and moxibustion were often used as a supplementary treatment option¹¹⁾. Recently, several studies have reported that acupuncture monotherapy and moxibustion monotherapy are effective in treating warts, respectively. In 2016, Yun et al. reported that 19~22 weeks of moxibustion monotherapy directly on wart lesions can effectively eliminate warts⁷⁾. According to Brustin et al., the therapeutic effect of acupuncture on persistent warts is related to the immune response and anti-inflammatory effects¹²⁾. However, there have been no reports of acupuncture treatment on warts using ash points. In Korea, in clinical practice, acupuncture is often used directly on the skin disease lesions. And related studies have reported that the treatment is effective in skin regeneration, reduction of inflammatory reaction, immune improvement¹³⁻¹⁵⁾. Therefore, in this study, we conducted a combination of acupuncture and moxibustion therapy directly on the wart lesions, and observed its effectiveness.

In this case, there may be controversy over the possibility of spontaneous resolution of wart, due to the patient in this case has shown complete resolution after a total of 11 months of treatment, including six months of cryotherapy prior to acupuncture and moxibustion treatment. However,

considering the fact that the warts of patient did not resolve and just spread despite she treated using cryotherapy, it may have been difficult to expect spontaneous resolution. Further case studies are required to confirm the spontaneous resolution of the plantar warts.

The first limitation of this case report is that it only dealt with a single case. Therefore, further case series and clinical research on large-scale patients are required to provide evidence of the effectiveness and safety of acupuncture and moxibustion treatment for recalcitrant warts. Second limitation is that burns occurred during moxibustion. Despite their effectiveness, performing acupuncture and moxibustion therapy for children is difficult because they are afraid of the treatment, and there is a risk of burns. Therefore, further research should consider exploring better measures to ensure treatment compliance in children and the safety of treatment.

In conclusion, this case report suggests that acupuncture and moxibustion could be effective therapeutic strategies in subjects with “difficult-to-treat” plantar wart lesions.

Summary

This report represents a single case study of a recalcitrant plantar wart treated successfully using acupuncture and moxibustion directly on the lesions for 20 weeks.

Statements

1. Acknowledgements:

The patient consent was obtained by patient’s

caregiver during the treatment period and this study was confirmed by the Daejeon Korean Medicine Hospital of Daejeon University Institutional Review Board (IRB)(DJDSKH-20-E-23).

2. Authors’ contributions:

SBS and HLL wrote the original draft. HKS provided the financial support. HLL and HKS critically review and revised the paper. All authors approved the final version.

Conflicts of interest

The authors declare that they have no competing interests.

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ORCID

Soo Bo Shim <https://orcid.org/0000-0002-6684-0841>

Hyun Kyung Sung <https://orcid.org/0000-0002-0366-1707>

Hye Lim Lee <https://orcid.org/0000-0001-7477-9991>