



Case Report

A Unique Treatment for Recurrent Lower Limb Cellulitis Rash and Ulcer: Traditional Chinese Medicine (TCM) for Allergic Vasculitis

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Summary

A man in his 40s presented with 1-month exacerbation of recurrent lower limb cellulitis rash and ulceration for 7 years. The presentation was similar to the previous episode which was precipitated by the lower extremity mosquito bites featured with expanding lower limb erythematous rash and ulceration. The hospital presentation triggered relevant blood tests suggestive of infection and ulcer wound swab culture showing *Klebsiella pneumoniae* infection. Treatment with conventional western medicine approach included ulcer wound debridement, intravenous antibiotics and micro-circulation-enhancing drug. However, conventional treatment was of limited efficacy and Traditional Chinese Medicine (TCM) physicians were consulted for Chinese herbal decoction being administered as out-patient regimen. After 30 doses, ulcer wound completely healed with the follow-up reporting no recurrence. This is the first case to demonstrate the unique advantage of combining Chinese and Western medicine for allergic vasculitis with Chinese herbal decoction in promoting wound healing, controlling inflammation and improving the prognosis.

Background

Allergic Vasculitis is an immune-related disease characterized by inflammation of small blood vessels in the skin, often manifesting as purpura, nodules, ulcers, and necrosis in the lower extremities [1,2]. There may be complex etiology including infection, drugs and autoimmune reactions [1,2]. Conventional western medicine treatment approach mainly uses the pharmacological agents including corticosteroids, immunosuppressants, and antibiotics, however significant side effects incur with long term use of these agents which leads to limited treatment response and poor prognostic outcomes [1,2]. Thus, alternative treatment approach

has been extensively studied by international researchers, especially TCM clinician researchers.

TCM is centralised by the balance between 'Yin' and 'Yang', which is demonstrating complementary, interconnected and interdependent in terms of disease diagnosis and treatment [3]. TCM may allow more effective management and treatment of the most challenging of human diseases [3].

Traditional Chinese Medicine defines allergic vasculitis with the terminology "Gua Teng Chan" and "Mei He Dan", highlighting its pathogenesis from TCM point of view as "the accumulation of

damp-heat and toxic evil, coupled with blood stasis obstructing the meridians” [4]. Simiao Yong'an Decoction, a commonly used TCM prescription for treating vasculitis, serves “to clear heat and detoxify, as well as promote blood circulation and alleviate pain” [4]. Modern pharmacological studies have revealed that the active ingredients within this decoction exhibit anti-inflammatory, antioxidant, immune-regulating, and angiogenic properties [4].

Case Presentation

A man in his 40s was admitted to the Department of Traditional Chinese and Western Medicine of our hospital on December 2024 due to “recurrent rash and painful swelling of lower limb skin lesion with ulceration for one month”.

History of present illness

Seven years ago, the patient developed rash and painful swelling of lower limb skin lesion with ulceration after being bitten by mosquitoes. The clinical course of the affected lower limb areas gradually expanded, accompanied by swelling, pain, and ulceration, which were successfully treated with topical medications. Subsequent repeated traumatic injuries precipitated the recurrent episodes of progressive lesion enlargement along with redness, swelling, and ulceration. The patient received multiple courses of inpatient treatments at our hospital and the Dermatology Hospital, where allergic vasculitis was diagnosed. Through wound debridement, dressing changes, and comprehensive therapy, the wounds were eventually healed on each episode until approximately 5 weeks ago. The patient again experienced similar skin lesions and was thought to be caused by mosquito bites with expanding skin rash, swollen and ulcerated skin lesion in the lower leg. After applying topical drugs, some wounds were scabbed, but the remaining wounds were still gradually expanding. In order to seek further systematic diagnosis and treatment, the patient was admitted to our department with “left lower limb skin infection”.

Physical examination

In the left lower limb, medial calf showed two wounds measuring 6×7cm and 5×4cm respectively, presenting with redness, ulceration, and exudate. Deep tissue examination revealed granulation tissue formation. The left lower limb exhibited five irregularly sized circular scars, while the right calf contained four similarly shaped scars and blisters of varying sizes, with the largest measuring approximately 10×7 cm. (Figure 1) The patient's temperature was 36.5°C, heart rate 78 beats per minute, and blood pressure 130/80 mmHg. Cardiovascular, respiratory, and abdominal system evaluations showed no significant abnormalities.



Figure 1: Lower leg skin rash, swelling and ulceration on presentation.

Differential Diagnosis

The history and physical examination have given the most likely diagnosis: 1) Severe skin infection of left lower limb similar to localized Steven Johnson Syndrome; 2) Allergic Vasculitis an immune-related disease characterized by inflammation of small blood vessels in the skin.

Investigations

Laboratory Examinations

Admission blood examinations including FBC, U+E, LFT were unremarkable except elevated total white blood cells $15.28 \times 10^9/L$ with the proportion of neutrophils being 47.5%. One week after completing the last course of antibiotics, lower leg wound purulent discharge culture showed *Klebsiella pneumoniae* with the drug sensitivity results being sensitive to only amikacin.

Imaging Studies

Bilateral lower limb peripheral arterial doppler ultrasound showed no peripheral arterial stenosis in both lower limbs.

Bilateral lower limb venous doppler ultrasound showed no deep vein thrombosis in both lower limbs.

Histopathology Examination

Left lower leg wound tissue scraping biopsy was performed on the ulcerated wound located at the medial side of the left lower limb. Histopathology report from the scraping biopsy concluded the presence of inflammatory necrotic tissue.

Treatment

Routine Western Medicine Approach

Immediate debridement of left lower leg ulcerated skin lesion was followed up with daily dressing change in view of copious discharge. The wet burn cream was also externally applied to the wound. Cefoperazone sulbactam sodium has been used empirically as intravenous (IV) antibiotics as well as Pentoxifylline for improving microcirculation. According to wound swab culture and drug sensitivity, IV Amikacin was used for two courses over four weeks. Two weeks after IV Amikacin and histopathology diagnosis highly suggestive of allergic vasculitis, oral prednisone 20mg daily was added to the above treatment regimen with minimal improvement after further two weeks' treatment (Figure 2). Traditional Chinese Medicine (TCM) physicians were consulted for diagnostic and treatment advice from TCM points of view.



Figure 2: Lower leg skin rash, swelling and ulceration after treatment with only Western Medicine.

Traditional Chinese Medicine Diagnostic Approach and Treatment Guide

TCM diagnostic approach regarding allergic vasculitis is based on excessive accumulation of toxins, compromised blood circulation with cold coagulation leading to blood stasis and obstruction of the meridians.

TCM Treatment Guide aims to clear cold coagulation and detoxify with promoting blood circulation to reopen the meridians and supporting the expulsion of toxins to promote tissue regeneration, ultimately balancing 'Yin' and 'Yang' to achieve complete healing.

TCM Decoction Application

Decoction per dose regimen:

Radix scrophulariae (60g) Clearing heat and detoxifying, nourishing 'Yin' to enable the balancing effects of 'Yin' and 'Yang'

Angelica sinensis (30g) Revitalising blood circulation, improving blood flow, removing blood stasis to facilitate reopening of the meridians.

Liquiritia glycyrrhiza (30g) Clearing heat and detoxifying, minimising the adverse drug interaction.

Honeysuckle flower (60g) Clearing heat and detoxifying, discharging toxins to promote tissue healing.

Preparata Aconiti (10g) Nourishing 'Yang' and improving microcirculation to promote tissue healing.

Coix seed (30g) Clearing heat and detoxifying, expelling toxins out to enable the balancing effects of 'Yin' and 'Yang'

Patrinia villosa (30g) Clearing heat and detoxifying, helping to facilitate the elimination of skin lesions and purulent discharge.

Decoction will be administered one dose per day with the dose being boiled twice in water for 30 consecutive doses.

Outcome And Follow-Up

After the patient took 30 doses of the above decoctions by the treating physicians, left lower leg swelling and ulcerative skin lesions have completely healed without recurrence (Figure 3). The 6-months and 12-months follow-ups over the phone with self-report from the patient showed no recurrence. The patient is advised to follow up with the Department of General Practice and TCM if clinically indicated.



Figure 3: Lower leg skin rash, swelling and ulceration after treatment with both Western Medicine and Traditional Chinese Medicine.

Discussion

This case demonstrates the significant therapeutic effect of traditional Chinese medicine decoction in the treatment of refractory allergic vasculitis. The formula used is based on the modified version of Simiao Yong'an Tang (honeysuckle flower, radix scrophulariae, angelica sinensis, liquiritia glycyrrhiza), with the addition of Preparata Aconiti, Coix seed, and Patrinia villosa, forming a compound with the effects of clearing heat and detoxifying, promoting blood circulation and removing blood stasis, warming 'Yang' and supporting toxins clearance [5,6]. TCM has been well studied in recent years for allergic disorders especially with the mechanism of action [4].

Analysis of the mechanism of action of TCMs used in this case

Honeysuckle and Scrophularia: The combination of the two can enhance the heat clearing and detoxifying effects. Modern pharmacological studies have shown that chlorogenic acid in honeysuckle and harpagoside in black ginseng have significant anti-inflammatory, antibacterial, and immunomodulatory effects [7].

Angelica sinensis: contains ferulic acid and ligustilide, which can improve microcirculation, inhibit platelet aggregation, promote angiogenesis, and accelerate ulcer healing [8].

Preparata Aconiti: It is a "Yang" medicine, when combined with heat clearing and detoxifying drugs, it can improve local blood circulation, promote granulation tissue regeneration, and ulcer healing [9].

Coix seed and Patrinia villosa: The combination of the two enhances the effect of removing dampness and pus, helping to clear wound exudate and necrotic tissue [10].

In this case, initial western medicine treatment regimen only effectively controlled the acute infection by preventing systemic infection. The highlight of this case is the introduction of traditional Chinese medicine treatment to solve the fundamental problems of allergic vasculitis and associated treatment-resistant chronic inflammation, which is a rare and difficult disease to treat with limited internationally-recognised consensus guidelines [1,2].

Immunosuppressants and hormones have been traditionally used in its management, but the treatment outcome is suboptimal with accompanying side effects [1,2]. Most treatment regimens are designed based on case-based literature by the treatment goals of suppressing chronic inflammation and treating associated infection as well as preventing systemic infection or septic shock. As we searched alternative regimen for this treatment-resistant case of allergic vasculitis, a published case report [11] in a 19 years old female suggests that Danggui Sini decoction may be considered an effective therapy for allergic cutaneous vasculitis with complete treatment response and no recurrence at 12 months follow-up. The take-home message in this case [11] suggested the Danggui Sini decoction is particularly effective in individuals who are unwilling to receive western medicine treatment. While Danggui Sini decoction shares a lot of common TCM ingredients with the revised Simiao Yong'an Decoction used in our case, our case report has highlighted the success of both regimens in tackling allergic vasculitis except our case being the first reporting case of successful treatment with TCM regimen in a man in his 40s.

The main limitation of our case report is that the treatment regimen is only tested on one patient in which the conclusion is not representative and we are not able to formulate guideline. Our department of general practice are collaborating with other tertiary hospitals for trialling the Simiao Yong'an Decoction in cases of allergic vasculitis, which are less responsive to western medicine approach.

Learning Points/Take Home Messages

TCM decoctions (modified Simiao Yong'an decoction) have unique advantages in treating allergic vasculitis and skin ulcers, which can significantly promote wound healing and reduce recurrence.

- The combination of TCM and Western medicine can play a synergistic role in the treatment of allergic vasculitis highlighting Western medicine for acute inflammation/infection and TCM for chronic inflammation/infection through up-regulating overall immunity and microcirculation.
- For patients with allergic vasculitis who have poor conventional treatment outcomes, the combination of TCM and Western medicine with a multidisciplinary approach should be considered.

Patient's Perspective

At first, I didn't think much of the left lower leg rash and skin infection, and thought it was due to mosquito bites causing the infection. But when my skin infection persisted and started to cause pain and discharge affecting my work even the best western medicine regimen has been used but not completely effective that I started to realize something serious may be happening. Then I had blood vessel screening for both my arteries and veins in my lower leg and not until the biopsy showed the rare condition of allergic vasculitis. The TCM physicians has made an individual TCM regimen for me and it works. The treatment team explained the regimen clearly, and I appreciated that there was a group of multidisciplinary specialists led by the TCM physicians working together to decide what would be the best and treatment with follow-up plan for me.

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