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Blistering Eruption in a Latino Migrant Farmworker

Steven R. Feldman^a; Quirina M. Vallejos^b; Lara E. Whalley^b; Sara A. Quandt^c; Thanh Brooks^d; Gonzalo Cabral^d; Patricia Earp^d; Werner Bischoff^e; Thomas A. Arcury^c

^a Center for Dermatology Research, Department of Dermatology, Department of Pathology, and Division of Public Health Sciences, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA ^b Department of Family and Community Medicine, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA ^c Division of Public Health Sciences and Department of Family and Community Medicine, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA ^d Harvest Family Clinic, Carolina Family Health Centers, Inc, Wilson, North Carolina, USA ^e Department of Internal Medicine (Section on Infectious Diseases), Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA

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Blistering Eruption in a Latino Migrant Farmworker

Steven R. Feldman, MD, PhD

Quirina M. Vallejos, MPH

Lara E. Whalley, BA

Sara A. Quandt, PhD

Thanh Brooks, FNP

Gonzalo Cabral, MD

Patricia Earp, RN

Werner Bischoff, MD, PhD

Thomas A. Arcury, PhD

ABSTRACT. Skin rashes are among the most common problems seen by those providing health care to agricultural workers. We present a case report of a migrant farmworker patient with a painful, blistering eruption of the axilla and adjacent skin developing after an insect bite. The possibility of infection was not initially considered, and teledermatology was helpful in making the diagnosis of bullous impetigo. This was important because initial culture confirmation was not obtained and antibiotic treatment had not been initiated. After the consultation, the impetigo was treated by empiric antibiotic coverage. The environmental conditions of migrant farmworkers raise special issues for infectious skin diseases like bullous impetigo. Crowded living conditions, lack of proper sanitary

Steven R. Feldman is affiliated with the Center for Dermatology Research, Department of Dermatology, Department of Pathology, and Division of Public Health Sciences, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA.

Quirina M. Vallejos is affiliated with the Department of Family and Community Medicine, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA.

Lara E. Whalley is affiliated with the Department of Family and Community Medicine, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA.

Sara A. Quandt is affiliated with the Division of Public Health Sciences and Department of Family and Community Medicine, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA.

Werner Bischoff is affiliated with the Department of Internal Medicine (Section on Infectious Diseases), Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA.

Thomas A. Arcury is affiliated with the Division of Public Health Sciences and Department of Family and Community Medicine, Wake Forest University School of Medicine, Winston-Salem, North Carolina, USA.

Thanh Brooks is affiliated with the Harvest Family Clinic, Carolina Family Health Centers, Inc, Wilson, North Carolina, USA.

Gonzalo Cabral is affiliated with the Harvest Family Clinic, Carolina Family Health Centers, Inc, Wilson, North Carolina, USA.

Patricia Earp is affiliated with the Harvest Family Clinic, Carolina Family Health Centers, Inc, Wilson, North Carolina, USA.

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Address correspondence to: Steven R. Feldman, MD, PhD, Department of Dermatology, Wake Forest University School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157-1071, USA (E-mail: sfeldman@wfubmc.edu).

facilities, and poor accessibility to health care increase the risk of occurrence and spread of this disease. With the recent emergence of multi-drug-resistant organisms such as methicillin-resistant *Staphylococcus aureus* in community settings, this case report should serve to reinforce the need to recognize the possibility of infection and to obtain culture specimens at the initial visit to better treat and control this infectious skin condition.

KEYWORDS. Health service research, epidemiology, impetigo, underserved, infection, CA-MRSA

INTRODUCTION

Skin conditions are among the most common problems seen by those providing health care to agricultural workers.^{1,2} In a recent study of Latino farmworkers in North Carolina, 42 out of the 54 men (78%) and 5 out of the 5 women examined had a diagnosed skin disease.³ We present a patient with a common skin condition that has a characteristic pattern of blistering eruption. This report describes the precarious living condition of migrant farmworkers, the risk for infection, and the importance of obtaining a culture when infection is in the differential. We also describe the potential use of teledermatology to assist in the identification of infectious skin conditions in this population.

Case Report

A 21-year-old male Latino farmworker from Mexico presented with the chief complaint of insect bite that was followed by a rash. He reported working in a tobacco warehouse the previous day when he felt something bite him. He was not able to identify the specific insect. He woke up the next morning with the rash as presented and applied Pond's cream to the affected area. The rash was associated with a strong sensation of burning but not itching or tenderness. It did not cause loss of work, though it did bother him a little during work.

The patient was in otherwise good general health. He lived in a farm camp with 22 other workers. He shared a single bedroom with 3 other workers. All 23 workers shared the same bathroom. The living quarters were not air-conditioned. He was able to shower after working, usually after a 2-hour wait.

The worker was seen in a clinic that focuses on care for migrant workers. On physical

examination, there were two affected areas (Figures 1 and 2). The site of the reported insect bite was within an eroded area of his axilla; there was a similar affected area on the extensor arm. The lesions were eroded centrally, surrounded by a spreading bullous process (Figures 1 and 2). Some of the affected area was covered with purulent drainage.

The diagnosis was unsure, and a store-and-forward teledermatology consultation was obtained. Images were obtained using a Nikon Coolpix 5400 camera and were uploaded to a server for the dermatologist to review, along with a consultation form providing the symptoms of the skin problem, duration of symptoms, self-treatments, and the provider's diagnoses and treatments. A diagnosis of bullous impetigo was made by the consultant dermatologist and was reported back to the clinic. The patient was treated with cephalexin 500 mg 4 times a day for 10 days. No further follow-up was done.

DISCUSSION

Impetigo is a common superficial bacterial infection caused by streptococci or staphylococci.^{4,5} The resulting inflammatory reaction results in redness and crusting. The bullous form of the disease results from blistering of the superficial layer of the epidermis, the stratum corneum, caused by toxins released by the infecting organism, usually *Staphylococcus aureus*.⁶ Once recognized, treatment is easily effected by appropriate antibiotic coverage. Penicillinase-resistant penicillins and first-generation cephalosporins are usually effective, though resistant organisms may require treatment with other agents.^{4,5,7} The condition may not be recognized immediately, as the presentation of

FIGURE 1. Blistering eruption of trunk and arm. The patient presented with a blistering eruption. The central areas were eroded. Flaccid broken blisters were present at the periphery of the erosions, and more tense blisters were present in the surrounding skin. The blisters on the extensor arm were in position to be in contact with the trunk involvement. Acute contact dermatitis (to plant allergens or chemical exposure) and bug bite reaction were also in the differential, but the distribution of lesions; the presence of large, tense blisters; the absence of linear lesions; and the symptoms of pain without itch favored the diagnosis of bullous impetigo.



blisters and crusts could be mistaken for contact dermatitis (to plants or chemicals) or bug bite reactions, both common occurrences in the migrant farmworker population. Teledermatology was particularly helpful in this instance, because infection was not considered in the differential diagnosis and culture and antibiotic coverage were not initiated at the time of first contact.

The environmental conditions of migrant farmworkers raise special issues for infectious diseases like bullous impetigo. Patients are exposed to insect bites and other minor trauma that may provide the nidus for initial infection. Moreover, the crowded living conditions and the limitations on proper hygiene manifested in migrant farmworkers' lifestyle may also play a role in the disease progression and its spread.

Diagnosis and treatment of this condition present further challenges in this population. Migrant farmworkers are limited in their ability

to access even local migrant clinics.^{8,9} Barriers include communication, cost, transportation, lost work time, and cultural beliefs.⁸ In addition, specialized dermatology services are rarely available in this setting, making the diagnosis of even common skin ailments at least difficult. Here, the access to teledermatologic consultations, as was available to this patient, may improve the detection of infectious skin conditions. Diagnosis is further complicated by self-treatment as often practiced by migrant farmworkers.¹⁰ Over-the-counter medications, nonmedicated creams, or irritants such as alcohol may be used.¹⁰ These remedies can alter the appearance of the rash and may even worsen the process.

In a clinic setting, treatment with an empiric antibiotic regimen is usually accompanied by culture and resistance testing of the potential causative organism. In this case, a first-generation cephalosporin was administered, but no

FIGURE 2. Close-up view of affected area. In the close-up view, the flaccid blisters at the periphery of the eroded area are evident, as are the more tense blisters spreading from the eroded area. Purulent drainage is present over much of the affected area.



culture was obtained. Of concern is the recent epidemic of community-acquired methicillin-resistant *Staphylococcus aureus* (CA-MRSA) leading now to the majority of emergency room visits due to infections in the United States.¹¹ CA-MRSA affects mostly young and healthy individuals in contrast to hospital-acquired MRSA found in the immunocompromised or patients with other predisposing risk factors.¹¹ The vast majority of infections with this highly virulent pathogen are located on the skin and soft tissue, which can result in necrotizing fasciitis or even death in some cases.^{12,13} In addition, close contact to persons with similar infection has been identified as a major risk factor for the spread of CA-MRSA.¹¹ The combination of young migrant farmworkers, close living quarters, and lack of sanitary facilities raises the potential of skin infections with CA-MRSA in a patient such as ours. Presented with a skin condition such as impetigo in a migrant farmworker, cultures and antibiotic testing should be considered at the initial visit to identify and treat the causative agent effectively. Recently developed rapid MRSA identification

methods may be helpful in recognizing CA-MRSA since follow-up of patients may be the greatest challenge in this migrant population.¹⁴ In addition, a thorough history should be obtained, specifically regarding contact with individuals with similar symptoms.¹¹ Follow-up is essential for patients with infection with resistant organisms and for individuals in whom an initial culture was not obtained. An effective method for farmworker patient follow-up is to send an outreach worker who speaks Spanish and is familiar to the patient. However, not all migrant clinics are able to employ outreach workers.

Diagnosis and treatment of dermatological conditions in migrant farmworkers pose a variety of challenges. Environmental and behavior factors combined with limited access to health care predispose these individuals to infectious skin conditions caused by pathogens such as the highly virulent CA-MRSA. Timely diagnosis and adequate treatment are paramount to cure and prevent further spread. This case report illustrates that teledermatology may be useful for providing valuable consulting advice from

specialists to outlying health care facilities. Other recommendations include improving personal hygiene, such as cleaner bathrooms and access to soap, water, and clean towels, which may help to control the spread of impetigo in farmworkers' living quarters; and education of the workers on how to keep injuries, bites, and areas of broken skin clean and covered to avoid contamination.

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