CASE REPORT

It was a Fungal Culprit all Along - A Case Report

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ABSTRACT

Sporotrichosis is a relatively uncommon fungal infection in human as compared to other fungal infectiction such as tinea corporis or cruris. The fungus can be found in the environment and on plant matter. Sporotrichosis usually results from trauma to the skin followed by exposure to the fungus. It can also be spread by cat scratch or bite. Sporotrichosis usually presents as multiple skin nodules arranged in a linear fashion over the limbs, often with associated lymphadenopathy. This calls for importance of full physical examination and a high index of suspicion in order to diagnose this infection that can either involve the skin or the lymphatic channel or both. If misdiagnosed, treatment can be delayed and lead to prolonged suffering of the patient. This is an interesting case report about a 43-year-old woman who presented with left axillary swelling and decreased range of movement of the corresponding shoulder which was feared initially to be linked to breast cancer. However, good clinal acumen lead to the actual diagnosis of sporotrichosis.

Keywords: Sporotrichosis, Lymphocutaneous, Itraconazole, Cats

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INTRODUCTION

Sporotrichosis is caused by infection with the fungus, *Sporothrix schenckii* (1). The usual vectors are cats, with the mycosis spreading through scratches or bites. Its incubation period varies from a few days up to a few months (2).

It spreads along the lymphatic channels thereby causing development of nodules or ulcers in a linear fashion. The incubation period is anything from one to twelve weeks. Although mainly confined to the skin and lymphatic system, the infection can notoriously spread to other systems, including the skeletal, pulmonary and central nervous system (1).

CASE REPORT

A 43-year-old woman, Madam S with no known medical illness presented with history of left axillary pain and swelling for one week which was worsening day by day. The pain was radiating to the left shoulder and arm causing reduction in the range of motion of the left shoulder.

There was an associated low-grade fever over the last two days. There was no history of trauma. There was no reported neck and breast swellings. There were no similar symptoms in the past. The patient has recently underwent a full medical examination including blood and urine examinations which were all normal.

Her temperature was 37.9^{o}C. Physical examination revealed a deep 2 x 2 cm single, firm and tender lymph node swelling with no skin changes over the left axilla. The neck and breast examinations were normal. The range of movement over the left shoulder was reduced secondary to pain caused by the swelling.

A day earlier, Madam S went to a medical centre where mammogram was performed. It was reported as BIRADS 1 i.e. normal mammogram. However, the persistent of the troubling symptoms forced her to seek treatment at an another clinic.

A possible diagnosis of left lymphadenitis was made initially. However, at the end of the consultation, the patient disclosed the presence of three papular lesions

over her left forearm. (Figure 1). On examination, the lesions were erythematous and arranged in a linear fashion with minimal clear discharge. The lesions were non tender. Further history revealed that her pet cat had accidentally scratched her hand three weeks ago before all the lesions came up.

Figure 1 : Three papular lesions over the left forearm

Using a constellation of the available clinical symptoms and signs of linear fashion popular lesion on a limb associated with lymphadenopathy, a probable diagnosis of lymphocutaneous sporotrichosis was made. Madam S was started on Oral Itraconazole 200mg daily for 2 weeks and given an appointment in two weeks for review. She had reported that her recent blood check-up which included liver function test was normal. Biopsy would need to be considered at the next follow-up if the symptoms doesn't show any improvement.

The patient came back after two weeks for review where she reported a positive treatment outcome. Her skin lesions as well as lymph node inflammation over her left axilla resolved.

DISCUSSION

There are three types of sporotrichosis, namely cutaneous (and lymphocutaneous), pulmonary and disseminated sporotrichosis. Usually sporotrichosis is a localized disease limited to the skin and subcutaneous tissue (cutaneous and lymphocutaneous fixed forms), in up to 95% of the cases. In rare instances, dissemination to various organs and systems can occur in rare cases, mainly in individual with a weakened immune system (3).Other than a weakened immune system, other risk factors for being affected with sporotrichosis includes traumatic subcutaneous inoculation of the skin with fungus contaminated plants, soil, and organic matter with rare instances of direct transmission from infected animals(3).

After a variable incubation period following inoculation, the papulo-nodular lesion at the infected site will progressively increase in size and may ulcerate or spread proximally to form multiple nodules along the lymphatic channel (fixed cutaneous or lymphocutaneous sporotrichosis, respectively) (1).

Diagnosis is mainly through skin biopsy which is sent for a fungal culture if resources are available (3). Besides skin lesion biopsy, the skin lesion material for culture may also be collected from pus or fluid aspirates to identify the causative agent (1,2). Otherwise, good clinical acumen and chronological sequence of the history is needed to reach to the elusive diagnosis.

Differential diagnosis includes blastomycosis, keratoacanthoma, pyoderma gangrenosum and atypical mycobacterial infection (4). The presence or absence of certain features can help to rule out these other diagnoses. For example, patients affected with blastomycosis will have flu-like illness with presence of fever, cough, night swears and skin lesions which are more likely to be verrucous (wart-like) or ulcerated with some pus discharge (3,4). Pyoderma gangrenosum meanwhile causes painful ulcers, usually over the legs and is associated with immunosuppression (3,4). Keratoacanthoma is usually a single skin lesion characterized by dome-shaped, symmetrical lesion which is surrounded by a smooth wall of inflamed skin, and capped with keratin scales and debris, and is usually found on sun-exposed upper and lower limbs. There are many atypical mycobacterial infection that can affect the skin. This includes *Mycobacterium fortuitum* that may cause chronic non-healing ulcers and subcutaneous nodules; *Mycobacterium abscessus* that usually causes abbesses after traumatic or self-induced injury such as tattoos or surgery; *Mycobacterium chelonae* that can cause chronic non-healing wound, subcutaneous nodule or even cellulitis or abscesses and *Mycobacterium marinum* that usually causes a single pustule that will usually progress to a crusty ulcer or even abscesses (3,4). Patients with atypical mycobacterial infection

usually will have prolonged exposure with another patient affected by this condition and are foremost immunocompromised most of the time eg AIDS (3). Atypical mycobacterial infections usually require isolation of the causative organism through culture for diagnosis confirmation. Another possible differential diagnosis would be TB lymphadenitis which usually presents with lymph node swelling over the cervical region. Looking back at the symptoms that Madam S had, it is most likely due to sporotrichosis induced by the cat scratch.

If the diagnosis of sporotrichosis has been made, then treatment can be started. Usual treatment will be oral itraconazole 200mg od for about three to six months for cutaneous and lymphocutaneous sporotrichosis and initial treatment with intravenous amphotericin B and later tapered down to oral itraconazole once favourable response is achieved for a total therapy duration of one year for the more sinister types such as meningeal, pulmonary and disseminated spirotrichosis (1).

Complication of this infection includes formation of Sweet's syndrome, unhealed scars and also progression to sepsis. Sepsis if not identified early can lead to shock, multi-organ failure and even death, and remains a common mimicker of many acute infections such as dengue fever (5).

The main limitation in managing this case is that general practitioner clinics often have difficulty in ordering a biopsy of a suspicious lesion like sporotrichosis and also often a high index of suspicion is needed to diagnose this relatively uncommon infection.

Nevertheless, full physical examination is of utmost important along with a high index of suspicion in diagnosing sporotrichosis.

CONCLUSION

In conclusion, this was an interesting case of sporotrichosis that was nearly missed. However, through good clinical acumen and ability to link the chronology of events over the past three week, the diagnosis was finally clinched.

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REFERENCES

1. Mahajan VK. Sporotrichosis: an overview and therapeutic options. Dermatol Res Pract. 2014;2014:272376.
2. Mercurio MG, Elewski BE. Therapy of sporotrichosis. In Seminars in dermatology 1993; 12(4):285-9
3. Freitas DF, Valle AC, da Silva MB, Campos DP, Lyra MR, de Souza RV, et al. Sporotrichosis: an emerging neglected opportunistic infection in HIV-infected patients in Rio de Janeiro, Brazil. PLoS Negl Trop Dis. 2014;8:e3110
4. Orofino-Costa R, Macedo PM, Rodrigues AM, Bernardes-Engemann AR. Sporotrichosis: an update on epidemiology, etiopathogenesis, laboratory and clinical therapeutics. An Bras Dermatol. 2017;92(5):606–620
5. Navin KD, Mokshashri NR, Er SY, Ching SM. Septic Shock as a Differential Diagnosis of Severe Dengue Fever in a Child in Malaysia - a Case Report. Mal J Health Sci 2019; 15(2):154-6