

Painless, Spreading, Annular Lesions in  
an Adult

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## Introduction

A 28-year-old female presented with one-week history of progressively worsening cutaneous lesions. Patient is a helicopter pilot that moved to Texas from Hawaii three weeks prior to initial encounter, with a stop in Florida for a week of water survival training. While in Florida she noted a small red welt on the dorsal aspect of her left wrist. Over a one week period she noted new lesions developing over her arms and legs, with two new lesions on her chest over the last two days just below her clavicles. The patient believed they were spider bites due to finding a spider in her rental car while in Florida.

Significant recent history includes frequent extended isolated camping trips in Hawaii and the adoption of two kittens that had been treated at a shelter before adoption. She denies any new sexual contacts and no known contacts with similar lesions.

On examination, she was found to have multiple annular well demarcated lesions present on ventral and dorsal aspects of bilateral forearms and legs. Lesions ranged from 0.5- 1.5cm in diameter. Lesions have slightly elevated erythematous borders. Larger lesions have central gray-black necrotic appearing eschar that is generally scaly in appearance. The initial lesion on the dorsum of the left wrist ruptured, leaving a craterous depression that oozes exudative material. The palms and plantar surfaces of the feet are spared (Figure 1).



Figure 1: Annular lesions with elevated erythematous borders and central gray-black necrotic appearance.

## Question

Based on the patient's history and physical examination, which of the following is the most likely diagnosis?

- A. Erythema migrans
- B. Mycobacterium marinum
- C. Granuloma Annulare
- D. Tinea Corporis

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## Discussion

The correct answer is B: *Mycobacterium marinum*. *M. marinum* lesions classically appear as papules and progress to shallow ulcerations. There are a variety of soft tissue infections that follow water exposure, especially if there is associated trauma. Infections can be transmitted from living creatures or inanimate objects, such as fish spines, fishhooks, or lacerations from boat propeller blades. Fresh water, salt water, swimming pools and aquariums have all been linked with *M. marinum* infections [1].

Both a thorough history and diagnostic testing will be crucial to identify the causative microorganism [2]. Seemingly insignificant environmental exposures and recent travel history should be considered when establishing a differential diagnosis.

Erythema Migrans (EM), as seen in early cutaneous Lyme disease, typically occurs within one month of a tick bite. While central clearing is considered a classic presentation for EM, these lesions rarely have a necrotic center and with expansion they may have a more complex bull's eye or target appearance [3].

There are a variety of factors that may lead to the appearance of Granuloma Annulare (GA) to include trauma, sun exposure, and viral infections. The absence of scaling in GA may help distinguish between the more commonly seen tinea corporis infections. Many

patients experience spontaneous resolution of symptoms, but since some lesions may persist for two or more years, patients may desire intervention with first line therapy typically consisting of topical or intralesional corticosteroids [4].

The presence, or absence, of scaling is a key diagnostic feature in annular skin lesions. Although expanding lesions can be seen in tinea corporis, erythema migrans and granuloma annulare the classic presentation of tinea corporis features a leading edge scale. Potassium Hydroxide Preparation (KOH) is helpful in diagnosing tinea corporis.

## References

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