

Terra Firma-Forme Dermatitis Of The Inguinal Fold: Duncan's Dirty Dermatitis Mimicking Groin Dermatoses

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Abstract

Terra firma-forme dermatosis is a benign acquired condition. It is also known as Duncan's dirty dermatosis. It occurs in men and women of all ages. The condition appears to have a male predilection and to occur at concave site, flexor surfaces and skin folds in older individuals. A 70-year-old man with terra firma-forme dermatosis affecting his inguinal folds is described. Woods lamp examination was negative for coral orange to pink coloration. Potassium hydroxide preparation was negative for hyphae and pseudohyphae. The diagnosis of terra firma-forme dermatosis was established by removal of the skin lesions after vigorously rubbing them with 70% isopropyl alcohol. When terra firma-forme dermatosis occurs in the inguinal folds, it can mimic other groin conditions such as erythrasma (Wood's lamp positive for coral orange or pink), intertrigo (potassium hydroxide preparation positive for pseudohyphae) and tinea cruris (potassium hydroxide preparation positive for hyphae). When the diagnosis of terra firma-forme dermatosis is suspected, rubbing the affected area with 70% isopropyl alcohol and witnessing the resolution of the lesions can readily confirm it.

Keywords

Candidiasis, Duncan's dirty dermatosis, Erythrasma, Groin, Inguinal fold, Intertrigo, Isopropyl alcohol, Terra firma-forme dermatosis, Tinea cruris

Introduction

Terra firma-forme dermatosis presents as dirty appearing plaques in men and women of all ages [1-4]. In older individuals, the lesions tend to occur at concave site, flexor surfaces and skin folds [5,6]. A 70-year-old man with terra firma-forme dermatosis affecting his inguinal folds is described and the differential diagnosis of groin conditions that can mimic this dermatosis are reviewed.

Case Presentation

A 70-year-old man without a history of non-melanoma skin cancer presented for evaluation of a new lesion on his right cheek; a biopsy revealed a basal cell carcinoma that was subsequently excised. Incidentally, brown plaques were noted bilaterally in the inguinal folds when a complete cutaneous

examination was performed (Figure 1); these were asymptomatic and the patient had not been aware of their presence.

A Wood's lamp examination of the groin was negative for orange-pink color of the plaques. A potassium hydroxide preparation of scale from the plaques was negative for hyphae and pseudohyphae.

The inguinal plaques were firmly rubbed with 70% isopropyl alcohol and were completely removed (Figure 2). Brown material that was wiped away could be noted on the alcohol pad (Figure 3). Correlation of the clinical presentation and therapeutic response after rubbing with 70% isopropyl alcohol established the diagnosis of terra firma-forme dermatosis.

Discussion

Terra firma-forme dermatosis is an acquired benign condition. The modern Latin translation of term “terra firma” literally is “firm land” or “solid land” [5]; it has also been interpreted as either “dry land (or dirt)” in contrast to the sea or “solid earth” [3]. In honor of W. Christopher Duncan--the Houston, Texas dermatologist who initially described the disorder in 1987--and perhaps because of the favorable reception to nomenclature for new disorders that incorporates alliteration--the condition is also known as Duncan's dirty dermatosis [1,2]. Interestingly, the affected patients usually have excellent hygiene and shower regularly; however, the lesions are resistant to scrubbing with soap and water [2,5].

The dermatosis can occur at any age—ranging from children to adults [2,3]. It is observed in women and men; however there may be a slight predilection for the latter in older patients [5]. Also, it may occur more often in heavier individuals [6]. Several investigators have suggested that the condition is more prevalent than the number of individuals cited in the literature [2,3].

Morphologically, brown dirt-like plaques characterize the skin lesions [4]. They can occur on any area of the body, but usually appear on the neck, face, trunk and ankles. The condition has also been noted to have a predilection for concave sites, flexor areas and skin folds [5,6].

A recent report of 10 patients with terra firma-forme dermatosis included 9 men and 1 woman [5]. Similar to the patient in this report, 33% of the men had lesions in their inguinal folds [5]. The presence of this condition in the groin area raises the possibility of other disorders that may occur in this location: erythrasma, intertrigo, and tinea cruris (Table 1) [2,5,7-12]. The clinical differential diagnosis of terra firma-forme dermatosis when the lesions are located at other sites is listed in Table 2 [1-5].

The diagnosis of terra firma-forme dermatosis can readily be confirmed by elimination of the lesions after rubbing with 70% isopropyl alcohol [1-5]. Biopsy is usually not necessary. However, if a skin biopsy were performed, the specimen would reveal prominent lamellar hyperkeratosis (and no parakeratosis) with focal areas of compact orthokeratosis in whorls [1,2].

Conclusion

Terra firma-forme dermatosis, also referred to as Duncan's dirty dermatosis, is a benign acquired condition that occurs in men and women of all ages. In older individuals there may be a male predilection and lesions tend to be found at concave sites, flexor surfaces and skin folds. When the dermatosis occurs in the inguinal folds, it can mimic other groin conditions such as erythrasma (Wood's lamp positive

for coral orange or pink), intertrigo (potassium hydroxide preparation positive for pseudohyphae) and tinea cruris (potassium hydroxide preparation positive for hyphae). Skin biopsy (which shows lamellar hyperkeratosis with focal areas of compact orthokeratosis in whorls) is usually not necessary to establish the diagnosis. Vigorously rubbing the lesions with 70% isopropyl alcohol will result in resolution of the lesions and provide confirmation of the suspected diagnosis.

Tables

Table 1: Differential diagnosis of groin dermatoses [a]

Condition	Organism	Diagnosis	Treatment
Terra firma-forme dermatosis	None	Resolution after rubbing with 70% isopropyl alcohol	70% isopropyl alcohol
Erythrasma [b]	<i>Corynebacterium minutissimum</i>	Woods lamp positive for coral orange to pink	Antibiotic agent—either topical or oral
Intertrigo [c]	<i>Candida albicans</i>	KOH preparation positive for pseudohyphae	Topical or systemic antifungal agent
Tinea cruris [d]	Dermatophyte	KOH preparation positive for hyphae	Topical or systemic antifungal agent

[a] Abbreviation: KOH, potassium hydroxide

[b] Erythrasma can be treated with topical agents such as clindamycin (gel or solution), erythromycin (gel or solution) and mupirocin (cream or ointment). It can also be treated with oral medications including clarithromycin, erythromycin, and tetracyclines (doxycycline or minocycline).

[c] Intertrigo is an inflammatory condition of skin folds. It can be worsened or colonized by infectious pathogens--most commonly associated with the yeast *Candida albicans*. However, other infectious organism—such bacteria, fungi, or viruses—can contribute to its multifactorial etiology. In addition to moisture in the affected area, intertrigo is induced or aggravated by friction, heat, lack of air circulation and maceration. Treatment includes elimination of friction, heat and maceration. Dilute vinegar compresses (1:40) can promote drying of weeping sites; absorbent powders (such as miconazole or nystatin) and topical pastes (containing zinc oxide) can also be helpful. Other topical agents to keep the area cool and dry include antiperspirants and drying agents (such as aluminum chloride); in addition, a hair dryer can be used to eliminate residual moisture after showers. Impetigo—when secondary to *Candida albicans*--can also be treated with topical agents such as azoles (clotrimazole, ketoconazole, luliconazole, miconazole, oxiconazole and sulconazole) and allylamines (butenafine, naftifine and terbinafine) and other agents, including ciclopirox, haloprogin and tolnaftate; in addition, systemic drugs --if necessary--include fluconazole, itraconazole and terbinafine.

[d] Tinea cruris can be treated with topical agents such as azoles (clotrimazole, ketoconazole, luliconazole, miconazole, oxiconazole and sulconazole) and allylamines (butenafine, naftifine and terbinafine) and other agents, including ciclopirox, haloprogin and tolnaftate. Systemic drugs to treat tinea cruris include griseofulvin, itraconazole and terbinafine.

Table 2. Differential diagnosis of terra firma-forme dermatosis

Acanthosis nigricans
Confluent and reticulated papillomatosis
Dermatosis neglecta
Dirty neck syndrome of atopic dermatitis
Epidermal nevus
Epidermolytic hyperkeratosis
Erythema ab igne
Erythrasma
Granular parakeratosis
Hyperkeratosis of the nipple and areola
Iatrogenic eruptions
Ichthyosis
Idiopathic deciduous skin
Intertrigo
Omphalolith
Post-inflammatory hyperpigmentation
Prurigo pigmentosa
Pseudoacanthosis nigricans
Seborrheic keratosis
Tinea cruris
Tinea versicolor

Figures



Figure 1(a & b): Terra firm-forme dermatosis presenting as brown plaques in the right (a) and left (b) inguinal folds of a 70-year-old man.



Figure 2 (a&b): The right (a) and left (b) inguinal folds following the areas being wiped firmly with 70% isopropyl alcohol. There is complete resolution of Duncan's dirty dermatosis; some of the material removed is noted on the paper below the patient.

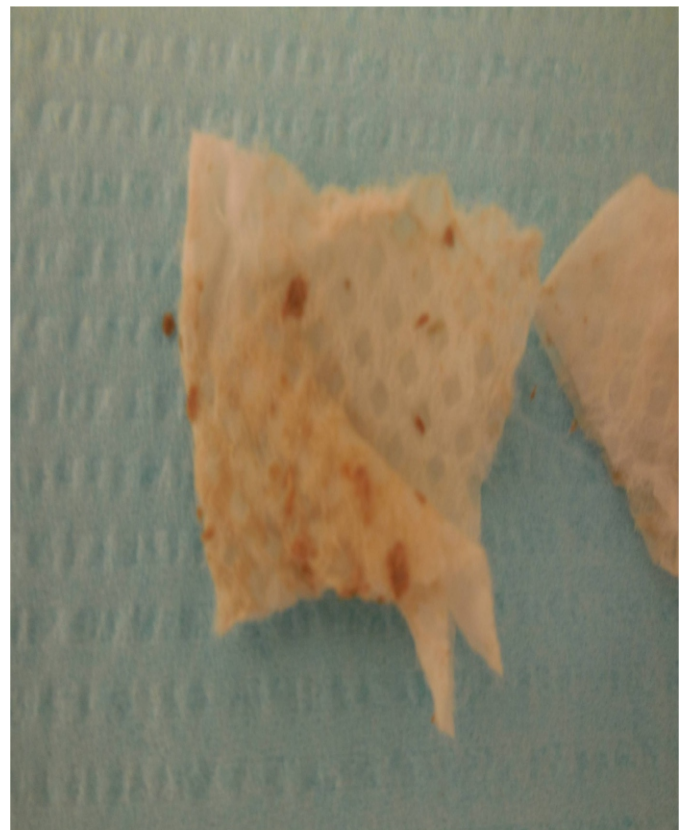


Figure 3 (a&b): A gauze pad with 70% isopropyl alcohol (a) was used to remove the terra firma-forme dermatosis. Material removed after firmly rubbing the inguinal folds can be observed on the pad (b).

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