

Erythematous Plaque on the Groin and Buttocks

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A 68-year-old man presented with an extensive erythematous plaque of 3 weeks' duration that started in the groin and spread to the buttocks. It was associated with pruritus and a burning sensation. He was admitted to the palliative care unit 1 year prior for the management of terminal lung cancer. Despite the use of topical corticosteroids and antifungals, the lesions gradually worsened with dissemination to the back. Physical examination revealed an erythematous macerated plaque that extended from the buttocks and groin region to the scapular area (top). Its borders had an eroded appearance with projections compatible with radial spread (bottom). A greenish exudate soaked the diaper and sheets. No other cutaneous lesions were noted.



WHAT'S YOUR DIAGNOSIS?

- Candida* infection
- erythrasma
- inverse psoriasis
- Pseudomonas* pyoderma
- tinea cruris

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doi:10.12788/cutis.0521

THE DIAGNOSIS: *Pseudomonas* Pyoderma

A skin swab confirmed the presence of a ciprofloxacin-susceptible *Pseudomonas aeruginosa* strain. Our patient received oral ciprofloxacin 500 mg twice daily for 10 days with remarkable clinical improvement. The remaining skin lesion was successfully treated with more frequent diaper changes and the use of topical corticosteroids and emollients.

The topographical location, cutaneous morphology, clinical context, and sometimes the type of exudate are fundamental for the diagnosis of eruptions in intertriginous areas. Cutaneous *Candida* infections are common in these locations. They classically present as markedly erythematous plaques that occasionally are erosive, accompanied by satellite papules and pustules.¹ Tinea cruris is a dermatophyte infection of the groin, proximal medial thighs, perineum, and buttocks. It usually presents as an erythematous patch that spreads centrifugally with partial central clearing and a slightly elevated, scaly border. Although candidiasis was higher on the differential, it was less likely, as our patient had a concomitant exudate inconsistent with *Candida* infections. Also, the lack of response to antifungal agents made hypotheses of fungal infections improbable.¹

Inverse psoriasis is a variant of psoriasis identified by the development of well-demarcated, nonscaly, shiny plaques on body folds.² Psoriasis is a chronic disease with several other cutaneous manifestations, such as nail and scalp involvement, as well as erythematous scaly plaques on the extensor surfaces of the limbs. The absence of a history of psoriasis, lack of other cutaneous manifestations, and no response to topical corticosteroids made the diagnosis of inverse psoriasis unlikely in our patient.

Erythrasma is a common superficial cutaneous infection caused by *Corynebacterium minutissimum*, a gram-positive bacillus. It typically presents as an intertriginous eruption characterized by small erythematous to brown patches or thin plaques with fine scaling and sharp borders.³ Erythrasma displays a coral red fluorescence on Wood lamp examination that can be useful in the distinction from other causes of intertrigo.¹ Although this examination had not been performed in our patient, the striking exudate made erythrasma less likely, and the culture performed on skin swab material would help to rule out this diagnosis.

Pseudomonas aeruginosa is a gram-negative strict aerobic bacillus of ubiquitous distribution with a preference for humid environments.^{4,5} *Pseudomonas aeruginosa* infections were first reported in the 19th century by physicians who noticed a peculiar odorous condition that caused a blue-green discoloration on bandages. This coloration explains the species name *aeruginosa* which is derived from the Latin word for copper rust.⁴ It comes from

several water-soluble pigments produced by this microorganism, the most prevalent of which are pyocyanin and pyoverdine. Pyocyanin has a greenish-blue color and is nonfluorescent, while pyoverdine is green-yellowish and fluoresces under Wood light.⁵ Other pigments, such as pyorubin and pyomelanin, can be produced by some *Pseudomonas* strains.⁴

Pseudomonas aeruginosa has become one of the main pathogens involved in hospital-acquired infections,⁶ especially in immunocompromised patients.^{6,7} It is a frequent cause of respiratory infections in patients with cystic fibrosis, as it is present in the airways of up to 70% of these patients in adulthood.⁷ Also, due to a variety of adaptive mechanisms with the development of resistance to a range of antibiotics, *P aeruginosa* has become a worldwide public health problem and is involved in several life-threatening nosocomial infections.^{7,8}

Cutaneous *P aeruginosa* infections range from superficial to deep tissue involvement and can affect both immunocompromised and immunocompetent individuals.⁹ They are classified as primary when they originate directly from the skin or secondary when they occur in the context of bacteremia. Primary infections mostly are mild and often are seen in healthy individuals; they usually occur by inoculation and predominate in moist areas where skin breakdown is frequent. Secondary infections typically affect immunocompromised individuals and portend a poor prognosis.^{5,9}

Denominated as *Pseudomonas* pyoderma, the superficial skin infection by *P aeruginosa* is described as a condition where the epidermis has a moth-eaten appearance with macerated or eroded borders.¹⁰ A blue-greenish exudate and a grape juice odor often are present. This infection usually occurs as a complication of several skin conditions such as tinea pedis, eczema, burns, wounds, and ulcers.^{5,10}

We believe that our patient developed *Pseudomonas* pyoderma as a complication of diaper dermatitis. His extended hospital stay with the use of different antibiotic regimens for the treatment of several infectious complications may have contributed to the development of infection by *P aeruginosa*.¹¹ Despite its great clinical relevance, there are few studies in the literature on primary skin infections caused by *P aeruginosa*, and clinical descriptions with images are rare. Our patient had a nonspecific noneczematous dermatitis, and the projections on the periphery of the lesion resembled the moth-eaten appearance of the classic description of *Pseudomonas* pyoderma.^{5,10} The presence of a greenish exudate should promptly raise suspicion for this entity. We believe that the presentation of this case can illustrate this finding and help physicians to recognize this infection.

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