

Case 1

“Why is my arm so itchy and sore?”

A 44-year-old man presents with a progressively worsening itchy lesion on his arm (Figure 1). During the past 12 days, the lesion has become a painful, draining plaque. In the emergency department a week ago, he received an injection consisting of methylprednisolone acetate, oral ampicillin, and oral diphenhydramine hydrochloride. The medication failed to resolve the lesion. The patient is otherwise healthy, and exercises by doing yardwork.

Can you identify the lesion?

- Poison ivy rash with secondary bacterial infection
- Brown recluse spider bite
- Black widow spider bite
- Gram-positive bacterial cellulitis
- Factitial dermatitis

What does your treatment plan include?

- A second injection of methylprednisolone acetate
- An injection of triamcinolone acetonide
- A different antibiotic, such as cephalexin
- A systemic antifungal agent
- A protective wrap placed over the arm to prevent exacerbation of the suspected self-inflicted lesion

Answers

The patient had a contact dermatitis, most likely poison ivy, contracted while gardening, with a secondary bacterial infection (**answer from question 1: A**). Spider bites and cellulitis are not initially pruritic.



Figure 1. An itchy lesion on a patient's left arm.

The patient's history did not support a factitial dermatitis.

The corticosteroid he received is more appropriate for chronic conditions, such as arthritis. Methylprednisolone acetate is not adequate therapy for acute skin problems. The prescribed antibiotic, oral ampicillin, did not cover the secondary staphylococcal infection which was provoked by intense scratching of the pruritic poison ivy. Diphenhydramine hydrochloride can ameliorate pruritus, but it plays no role in the treatment of poison ivy. Intramuscular triamcinolone acetonide, and a cephalosporin, produced dramatic improvement within two days (**answer from question 2: B and C**).

Case 2

“What’s causing this rash?”

For several weeks, a 34-year-old woman has had a pruritic rash under her breasts (Figure 1). She also complains of itching, slight redness, and scaling around the groin, eyebrows, and nasolabial folds. The patient has Type 2 diabetes mellitus, which is well-controlled with glipizide.

What action do you take?

- Perform patch tests
- Perform a potassium hydroxide evaluation
- Examine the hands for nail pitting
- Obtain a serum glucose level
- Prescribe an over-the-counter antifungal powder

Which disorder in the differential is the likely diagnosis?

- Seborrheic dermatitis
- Psoriasis
- Contact dermatitis
- Diabetic dermopathy
- Candidiasis

Answers

A potassium hydroxide examination ruled out a fungal infection (**answer from question 1: B**), and supported the diagnosis of seborrheic dermatitis (**answer from question 2: A**). This erythematous, scaling rash arises in a seborrheic distribution, which involves the eyebrows, eyelids, nasolabial folds, ears, scalp, mid chest, and less commonly the



Figure 1. A pruritic rash under a patient’s breast.

axillae, umbilicus, and groin. Psoriasis can occur secondary to the inflammation caused by seborrhea (the Koebner phenomenon), but was unlikely here due to the absence of nail pitting, or other characteristic changes. The distribution was not typical of a contact dermatitis, which is usually seen on exposed areas (and is much more pruritic), or a Candida infection (which is more crusty and features satellite lesions).

Diabetic dermopathy is characterized by brown macules that overlie the shins, and is often seen in persons with diabetes. This patient’s history of diabetes was not relevant to her cutaneous disorder.

Case 3

“What is this mark on my face?”

A 53-year-old woman presents with a three-day history of a painful, crusted lesion on the left side of her face, where the chin meets the cheek (Figure 1). The left side of her neck is sore as well. The patient is otherwise healthy. She takes no medications.

What does this look like to you?

- Impetigo
- Cutaneous candidiasis
- Herpes simplex
- Herpes zoster
- Contact dermatitis

What does the initial workup include?

- A bacterial culture
- A fungal culture
- A culture for herpes virus

Pending the results of the cultures, what do you prescribe?

- A 1-week course of cephalexin
- A 1-week course of mupirocin
- A 1-week course of an antifungal cream, such as ketoconazole
- A one-week course of an oral antiviral agent to cover both herpes simplex and herpes zoster
- Topical acyclovir
- A corticosteroid cream

Answers

The suspected diagnosis, herpes zoster (**answer from question 1: D**), was confirmed due to results



Figure 1. Painful, crusted lesion on the left side of the patient's face.

of a herpes virus culture (**answer from question 2: C**). Impetigo, candidal infection, and herpes simplex were also in the differential. It is difficult to distinguish these lesions. Bacterial and fungal cultures may be performed if the clinical picture is unclear. A contact dermatitis is pruritic, not painful.

Viral culture findings can predict the course of the disease, however, the results are returned too late to influence the choice of therapy. The treatment approach, therefore, is a challenge. Prescribe a systemic antiviral to cover both herpes infections (**answer from question 3: D**), but in a dosage high enough to treat herpes zoster. If impetigo is strongly suspected and bacterial culture results are not yet available, give mupirocin as well.

Case 4

“What’s happening to my lip?”

For several weeks, a 46-year-old woman has had asymptomatic white patches on her lips (Figure 1).

Which of the following is true of these lesions?

- They are caused by tobacco products
- They are caused by sun exposure
- They pose the risk of transformation to squamous cell carcinoma
- They are associated with hepatitis C
- They may ulcerate

Which of the following are treatment options?

- Topical 5-fluorouracil
- Topical corticosteroids
- Topical tacrolimus
- Oral cyclosporine
- Oral hydroxychloroquine

Answers

This is lichen planus, which is associated with hepatitis C. It can develop into squamous cell carcinoma, and may ulcerate (**answer from question 1: C, D, and E**).

Treatment options

Treatment options include topical corticosteroids, cyclosporine, and hydroxychloroquine (**answer from question 2: B, D, and E**).



Figure 1. Asymptomatic white patches on a patient's lower lip.

Topical tacrolimus reportedly has been effective. However, this agent is not approved by the Food and Drug Administration for this indication.

Actinic cheilitis, which is usually considered in the differential, does not have as lacy an appearance, and does not affect areas of the mouth that haven't been exposed to the sun. Lichen planus, however, can extend onto the buccal mucosa.

Case 5

“How can I find relief?”

For three weeks, a 67-year-old man has had a pruritic, scaly, red rash on his lower abdomen (Figure 1). Over-the-counter hydrocortisone preparations afforded no relief. A tapering course of prednisone prescribed by another clinician was not helpful. A urinary tract infection was diagnosed after the rash appeared, and a one-week course of trimethoprim-sulfamethoxazole was prescribed. The patient has been taking glyburide for diabetes, and a combination hydrochlorothiazide and triamterene agent for hypertension, for more than one year.

What is the likely diagnosis?

- Candidiasis
- Intertrigo
- A contact dermatitis to detergent or fabric softener
- Tinea corporis
- Erythrasma

What is your initial approach?

- Perform a potassium hydroxide evaluation
- Perform a fungal culture
- Perform a bacterial culture
- Perform a skin biopsy
- Recommend that the patient change his detergent and fabric softener

Answers

Tinea corporis (**answer from question 1: D**) was confirmed by a potassium hydroxide (KOH) evaluation (**answer from question 2: A**). The extensive lesions suggested an underlying predisposing factor which, in this patient, was diabetes mellitus. The KOH examina-



Figure 1. A pruritic, scaly, red rash on the patient's lower abdomen.

tion ruled out a contact dermatitis, which can resemble tinea corporis.

In this setting, fungal culture for a dermatophyte would be positive. However, the results would not be available for several weeks and, thus, could not be helpful in guiding treatment. This patient was given a one-week course of oral itraconazole. Oral terbinafine is another option in this setting.

Under routine circumstances, the organism that causes erythrasma—*Corynebacterium minutissimum*—cannot be cultured because it requires special growth media that are not widely available. A skin biopsy can detect a fungal infection but usually cannot identify the specific dermatophyte. Intertrigo, Candida infection, and erythrasma typically involve skin folds, which remained unaffected in this patient.

Case 6

“What is this bump behind my ear?”

A 41-year-old woman has had a persistent bump behind one of her ears for a few months (Figure 1). She seeks medical evaluation of the asymptomatic lesion.

Can you identify this condition?

- Pilar cyst
- Epidermoid cyst
- Sebaceous cyst
- Milium
- Comedo

What action do you take?

- Incise and drain the lesion
- Excise the lesion
- Offer reassurance only
- Prescribe tretinoin cream

Answers

This was a milium (**answer from question 1: D**), or epidermal inclusion cyst, which is histologically distinct from the other conditions in the differential. The four cysts arise from different points of the pilar structure. Milia are typically small (1 mm to 2 mm) and more superficial than the other cysts considered. To avoid recurrence, the cyst wall must be removed during excision.

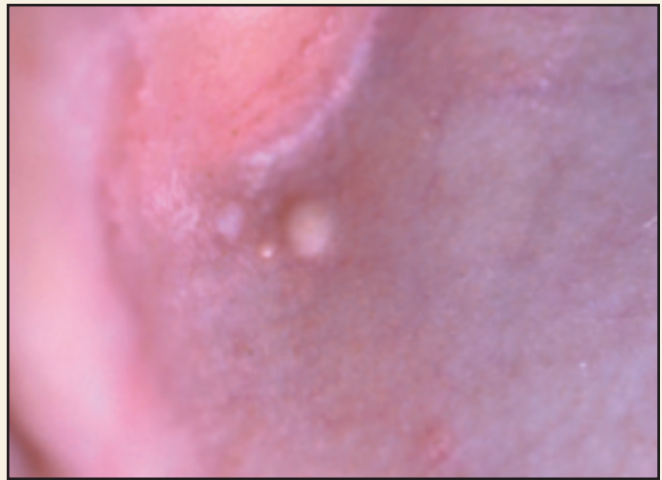


Figure 1. A persistent bump behind the patient's ear.

A milium is more deep-seated than a comedo, which has a recognizable patent opening from which the contents can be expressed. Patients with milia require reassurance only (**answer from question 2: C**). However, if the patient opts for removal, consider incision and drainage, or tretinoin cream. [CME](#)