

Which of the following is the most appropriate management strategy for this patient's acne?

- (A) Avoidance of fast foods and chocolate
- (B) Oral corticosteroids
- (C) Oral tetracycline
- (D) Topical retinoid medications

Item 46

A 21-year-old man is evaluated in the office for painful sores in his mouth. Episodes of these sores have occurred two to three times yearly since he was 16 years old, and he believes they are associated with stress. They usually appear on the inside of his mouth as a single, round, painful lesion, lasting for 5 to 10 days and resolving without scarring.

He has had no fever, chills, arthralgias, genital ulcers, rashes, eye problems, diarrhea, abdominal pain, or weight loss. He is sexually active, has had only a few sexual partners, and has been in a monogamous relationship for the last 12 months. All of his sexual interactions have been heterosexual. He does not use illicit drugs. Results of HIV testing for his sexual partner and him from 3 months ago were negative. The remainder of the history is noncontributory.

On physical examination, the vital signs are normal. The oral examination is significant for the lesion shown (*see Figure 4 in Color Plates*). The remainder of the physical examination is unremarkable.

Which of the following is the most likely diagnosis?

- (A) Aphthous ulcer
- (B) Behçet's disease
- (C) *Candida* infection
- (D) Herpes simplex virus infection
- (E) HIV infection

Item 47

A 20-year-old male college student is having trouble sleeping because of an itchy rash on the inner aspect of his arms, elbow creases, and behind the knees. This rash and itching have been recurring for several years, becoming more severe in the winter despite his use of a daily moisturizer. His history is remarkable for seasonal allergies, and the only medication he uses is a nasal corticosteroid in the fall.

The physical examination, including vital signs, is normal, with the exception of the skin findings, as shown (*see Figure 5 in Color Plates*).

Which of the following is the most likely diagnosis?

- (A) Atopic dermatitis
- (B) Cellulitis
- (C) Contact dermatitis
- (D) Seborrheic dermatitis

Item 48

A 32-year-old man comes to the office because of a 1-week history of worsening erythema and pruritus of both axillae. He is otherwise asymptomatic, his appetite is unchanged, and his weight is stable.

On physical examination, temperature is 37.1 °C (98.8 °F), heart rate is 72/min, respiration rate is 16/min, and blood pressure is 128/62 mm Hg. Both axillae show marked erythema, minimal tenderness, several small nonpustular vesicles, and a small amount of serous exudate coming from ruptured vesicles. There is no erythema adjacent to the axillae and no palpable lymphadenopathy.

Leukocyte count is 5300/μL with 72% neutrophils, 18% lymphocytes, 2% monocytes, and 8% eosinophils.

Which of the following is the most likely diagnosis?

- (A) Contact dermatitis
- (B) *Pasteurella multocida* cellulitis
- (C) Staphylococcal cellulitis
- (D) Streptococcal cellulitis

Item 49

A 35-year-old farmer is evaluated in the office for an extremely itchy rash on his face, arms, and legs that keeps him awake at night. He noticed the rash several days after raking and burning brush along his driveway. The rash on the forearm is shown (*see Figure 6 in Color Plates*). Some involved parts have extensive edema and bullae formation. The remainder of the physical examination, including vital signs, is normal.

Which of the following is the first-line treatment for this condition?

- (A) Oral corticosteroids
- (B) Topical corticosteroids
- (C) Topical mupirocin
- (D) Topical pimecrolimus

Item 50

A 22-year-old woman living in Massachusetts is evaluated in the office for a 4-day history of multiple "bug bites" and left ankle pain. She initially developed painful, nonpruritic nodules on her legs and severe left ankle pain 4 days after mowing her lawn. She has been walking with a limp.

On physical examination, temperature is 38.2 °C (100.8 °F). The left ankle is slightly swollen. On musculoskeletal examination, passive motion of the left ankle elicits pain. The skin lesions are shown (*see Figure 7 in Color Plates*) and are tender to palpation.

On laboratory studies, complete blood count, serum chemistry studies, and urinalysis are normal. Arthrocentesis of the left ankle yields 1.5 mL of fluid (leukocyte count, 4000/μL; 45% neutrophils). Examination using polarized light microscopy shows no crystals. Culture results are pending.

Which of the following is the most likely diagnosis for the skin lesions?

- (A) Disseminated gonorrhea
- (B) Erythema nodosum
- (C) Psoriasis
- (D) Systemic lupus erythematosus

Item 51

A 75-year-old man is evaluated in the office because of increasingly severe pain and a rash on the left side of his chest. The pain began 3 days ago, and the rash developed 2 days ago. The patient has never had similar symptoms. His only medication is a nonsteroidal anti-inflammatory drug for the pain.

On physical examination, vital signs are normal. The rash is shown (*see Figure 8 in Color Plates*).

Which of the following antiviral agents is most appropriate at this time?

- (A) Famciclovir
- (B) Ganciclovir
- (C) Penciclovir
- (D) Valganciclovir

Item 52

A 55-year-old woman is evaluated in the office for what she believes is toenail fungus. She is interested in treatment. She is otherwise healthy and takes no medications.

On physical examination, thickened and dystrophic nails are noted on each of her largest toes. The remainder of the examination is normal.

Which of the following is the most appropriate next step in management?

- (A) Aggressive nail débridement
- (B) Culture of debris under the nail
- (C) Oral terbinafine
- (D) Topical ciclopirox

Item 53

A 40-year-old emergency medicine physician is evaluated in the office for a rash on the back of her elbows and anterior knees. Similar rashes have occurred in the past; the first episode occurred when she was a young adult. Typically the rash develops in the winter and improves with exposure to sunlight in the summer. She has used over-the-counter hydrocortisone cream without relief. She is otherwise healthy.

The skin findings on the back of the patient's elbows are shown (*see Figure 9 in Color Plates*). Laboratory studies, including complete blood count and differential, serum chemistry studies, and urinalysis, are normal.

Which of the following is the most likely diagnosis?

- (A) Dermatophyte infection
- (B) Eczema
- (C) Pityriasis rosea
- (D) Psoriasis
- (E) Subacute cutaneous lupus erythematosus

Item 54

A 45-year-old woman is evaluated in the office for a facial rash of 6 months' duration that involves the cheeks and nose. She is unsure whether sun exposure worsens the rash. She does not have rash elsewhere, fatigue, ulcers, or joint pain. She has a history of autoimmune hypothyroidism with positive antimicrobial and antinuclear antibody assays.

Physical examination reveals a rash limited to the cheeks, nasolabial folds, and nose (*see Figure 10 in Color Plates*). The remainder of the examination is unremarkable. Current laboratory studies, including complete blood count, serum chemistry studies, and thyroid-stimulating hormone, are normal.

Which of the following is the most likely diagnosis?

- (A) Dermatomyositis
- (B) Psoriasis
- (C) Rosacea
- (D) Seborrheic dermatitis
- (E) Systemic lupus erythematosus

Item 55

A 30-year-old woman is evaluated in the office for pruritus that interferes with her sleep and has persisted for at least 1 week. She had recently visited her grandfather who resides in a nursing home and who also complained of itching. The patient is otherwise healthy, takes no medications, and has not had any new exposures to household chemicals.

Physical examination reveals multiple small papules, some excoriated, distributed predominantly on her hands (*see Figure 11 in Color Plates*), feet, and areolae.

Which of the following is the most appropriate treatment for this patient?

- (A) Bacitracin, topically
- (B) Ivermectin, orally
- (C) Permethrin 5%, topically
- (D) Triamcinolone 0.1%, topically

Item 56

A 42-year-old man is evaluated in the office for a nonpruritic, nonpainful spreading rash on his thorax that he has noticed over the past several weeks. The patient has been outdoors more often over the past few weeks, and his skin is beginning to tan. He has used an over-the-counter corticosteroid cream without success.

The findings of the skin examination are shown (*see Figure 12 in Color Plates*). Direct microscopic examination of scale with 10% potassium hydroxide shows large, blunt hyphae and

onset in a child younger than 2 years of age; and 5) visible dermatitis of skin flexures.

Contact dermatitis is precipitated by local absorption of an allergen or irritant through the stratum corneum. The location of the eruptions may help to identify the causative agents (e.g., neck rash due to necklace). Acute eruptions are characterized by erythema, edema, and vesiculation. The configuration of the rash is often geometric (e.g., linear, localized polygons) and is rarely diffuse unless there is a corresponding id reaction (generalization of the rash caused by an immunologic mechanism). Seborrheic dermatitis is characterized by erythematous plaques with a dry or oily scale occurring in hair-bearing parts of the body, including the scalp, eyelashes, eyebrows, beard, chest, external ear canal, and behind the ear. Cellulitis is an acute eruption that is characterized by a well-demarcated area of warmth, swelling, tenderness, and erythema. It is not associated with vesicles or pruritus.

KEY POINT

- Atopic dermatitis is an allergic disorder with genetic and immunologic components characterized by intense itching, leading to excoriation, lichenification (epidermal thickening), hyperpigmentation, and papulosquamous eruptions.

Bibliography

1. Boguniewicz M, Schmid-Grendelmeier P, Leung DY. Atopic dermatitis. *J Allergy Clin Immunol.* 2006;118:40-3. Epub 2006 Jun 6. [PMID: 16815136]

Item 48 Answer: A

The patient most likely has contact dermatitis, as he has no systemic signs of infection such as fever, leukocytosis, or malaise. The pruritic rash with erythema and vesicles with minimal tenderness are typical of contact dermatitis, although impetigo and some dermatophyte infections are also possible. Eosinophilia may be present but is not a necessary component of contact dermatitis. The patient's rash was presumably due to hypersensitivity to his deodorant.

Staphylococcal, streptococcal, and *Pasteurella multocida* cellulitis are highly unlikely because there are no signs or symptoms of acute bacterial infection, no signs of spreading, and no lymphadenopathy. In addition, the rash is symmetrical bilaterally (which is an unusual distribution for cellulitis) and is accompanied by pruritus (which is not commonly associated with cellulitis).

KEY POINT

- Noninfectious skin lesions are not associated with fever and other systemic signs and symptoms or abnormal laboratory studies.

Bibliography

1. Falagas ME, Vergidis PI. Narrative review: diseases that masquerade as infectious cellulitis. *Ann Intern Med.* 2005;142:47-55. [PMID: 15630108]

Item 49 Answer: A

This patient has poison ivy contact dermatitis. Severe poison ivy dermatitis, including cases with extensive involvement and edema, can be treated with oral prednisone, tapering the dosage slowly over 2 to 3 weeks. No studies support length of treatment with oral corticosteroids. However, clinical experience has shown that rapid tapering often results in rebound dermatitis.

Although high-potency topical corticosteroids may reduce the erythema that sometimes surrounds vesicles, this treatment is not recommended on the face, neck, or intertriginous areas, where corticosteroid-induced atrophy is more likely to occur. When these areas are involved with blisters, topical treatment is ineffective and oral treatment is more appropriate. Furthermore, the practical concern of applying topical medication to a large body surface area must be considered; this is often difficult for the patient to manage and consumes large quantities of the topical product. Pimecrolimus is a biologic response modifier that is used as a second-line topical treatment for atopic dermatitis and certain other forms of eczema; treatment of poison ivy dermatitis with pimecrolimus is not helpful. Topical mupirocin is an antibacterial agent and is an appropriate treatment for superficial bacterial infections such as impetigo. There is no evidence that this patient's skin is infected (absence of crusting); therefore, topical antibiotics are not indicated.

KEY POINT

- Severe cases of contact dermatitis, including those with extensive involvement and associated edema, can be treated with oral prednisone.

Bibliography

1. Mark BJ, Slavin RG. Allergic contact dermatitis. *Med Clin North Am.* 2006;90:169-85. [PMID: 16310529]

Item 50 Answer: B

This patient's skin lesions are characteristic of erythema nodosum, consisting of painful, erythematous nodules on the anterior surfaces of both legs that evolve into bruise-like lesions that resolve in several weeks. The nodules are more easily palpated than visualized. An acute presentation of erythema nodosum accompanied by arthritis or peri-arthritis of the ankle raises high clinical suspicion for acute sarcoidosis. These features, accompanied by fever and hilar lymphadenopathy, strongly suggest the diagnosis of Löfgren's syndrome, which is a variant of sarcoidosis. Lymphomas, fungal or streptococcal infections, inflammatory bowel disease, and some medications, including estrogen, may cause erythema nodosum. Lymphoma rarely causes acute erythema nodosum and concomitant arthritis. Histoplasmosis may mimic this acute sarcoidosis presentation in endemic areas.

Psoriasis consists of well-demarcated, symmetrically distributed, erythematous plaques affecting extensor surfaces with

an overlying silvery scale. Psoriatic arthritis has multiple presentations, including monoarthritis, oligoarthritis (asymmetric), polyarthritis (symmetric), arthritis mutilans, and axial disease. The key to the diagnosis is often the presence of skin and nail changes consistent with psoriasis, which are absent in this patient.

The rash of systemic lupus erythematosus is a photosensitivity rash most commonly involving the face in a central malar pattern that spares the nasolabial folds and the areas beneath the nose and lower lip. Discoid lupus is characterized by sharply demarcated violaceous atrophic plaques with adherent scale with telangiectasias and follicular plugging. Chronic lesions produce scarring and alopecia. The arthritis associated with systemic lupus erythematosus symmetrically affects small joints of the hands, wrists and knees and is not found in this patient.

The finding of acute, nontraumatic, monoarticular arthritis, particularly in a sexually active young woman, should always prompt consideration of disseminated gonorrhea infection. However, the rash of disseminated gonorrhea classically consists of tender necrotic pustules on an erythematous base (usually <30 lesions), especially on the distal extremities, rather than the deep nodules seen in this patient. The arthritis typically involves the wrists, metacarpophalangeal joints, ankles, and knees most commonly, but any joint may be affected.

KEY POINT

- The skin lesions of erythema nodosum consist of painful, erythematous nodules on the anterior surfaces of both legs.

Bibliography

1. Schwartz RA, Nervi SJ. Erythema nodosum: a sign of systemic disease. *Am Fam Physician*. 2007;75:695-700. [PMID: 17375516]

Item 51 Answer: A

This patient has herpes zoster (shingles), which occurs with increasing frequency as people age, and should be treated with famciclovir. The most common distribution is a unilateral rash in a dermatomal distribution in the thoracic region. Famciclovir has replaced acyclovir as the treatment of choice for patients with herpes zoster because of its superior pharmacokinetics, simplified dosing schedule, and improved efficacy. Although not listed, valacyclovir would be an acceptable alternative agent. Based on reports from controlled clinical trials, both drugs are effective when initiated within 72 hours of disease onset. Antiviral therapy can be considered optional for younger patients with mild pain and limited cutaneous involvement because these patients are at relatively low risk for developing severe or protracted pain. Consider prescribing a course of antiviral therapy in elderly patients with severe pain and large areas of cutaneous involvement, even when these patients present more than 72 hours after lesion onset. Despite lack of evidence, many experts prescribe antiviral therapy for patients presenting more than 72 hours after rash onset with continued new vesicle formation or when there are cutaneous,

motor, neurologic, or ocular complications. The effectiveness of therapy begun after 72 hours is not known.

Topical antiviral therapy with penciclovir is not recommended for patients with herpes zoster because of lack of efficacy. Ganciclovir and valganciclovir are most frequently used to treat cytomegalovirus infections in immunocompromised patients. These drugs have not been evaluated for the treatment of herpes zoster and their side-effect profiles make them much less desirable than famciclovir, valacyclovir, or acyclovir.

KEY POINTS

- The most common distribution of herpes zoster (shingles) is a unilateral rash in the thoracic region.
- Famciclovir and valacyclovir are the treatments of choice for patients with herpes zoster.

Bibliography

1. Wareham DW, Breuer J. Herpes zoster. *BMJ*. 2007;334:1211-5. [PMID: 17556477]

Item 52 Answer: B

This patient may have onychomycosis. Obtaining cultures to confirm an infection is recommended before treatment because thickened and dystrophic nails can be caused by other conditions, such as psoriasis, peripheral vascular disease, lichen planus, or atopic dermatitis. It is best to culture the nail bed debris from the most proximal part of the infection. Treatment of onychomycosis is recommended for patients with peripheral vascular disease, diabetes mellitus, or other conditions that increase the risk of morbidity. Onychomycosis may also require treatment when it is a risk factor for recurrent cellulitis. A case-control study indicated that patients evaluated for cellulitis of the leg were more likely to have onychomycosis and tinea infections of the feet than the control population.

Besides terbinafine, additional approved oral treatments for onychomycosis include griseofulvin and itraconazole. Ciclopirox is a topical lacquer that is also approved for treatment of onychomycosis. The cure rate is low, and recurrence after discontinuation of treatment is common. However, topical treatment is recommended as initial therapy when superficial invasion of the nailbed is noted without nail thickening. Although nail débridement helps relieve pressure that footwear exerts on toes, this intervention does not provide a diagnosis or cure onychomycosis.

KEY POINT

- It is best to confirm the presence of an infection with a culture of debris under the nail in patients with suspected onychomycosis to rule out other conditions.

Bibliography

1. Roberts DT, Taylor WD, Boyle J. Guidelines for treatment of onychomycosis. *Br J Dermatol*. 2003;148:402-10. [PMID: 12653730]