Clinical Medicine for Physician Assistants 1st edition Van Rhee Test Bank

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Test Bank to Accompany

Clinical Medicine for Physician Assistants

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CHAPTER 1: DERMATOLOGY

1. A patient presents with an ulcerated skin lesion on his face. Which of the following is the most likely diagnosis?

A. Melanoma @ No. Melanoma does not appear as ulcerated nodules.

B. Dysplastic nevi @ No. Dysplastic nevi do not appear as ulcerated nodules.

C. Paget disease @ No. Paget disease typically involves the breast but can present as a red, scaly lesion on the genitals, anus, groin, and armpits.

D. Basal cell carcinoma @ No. Basal cell carcinoma does not appear as ulcerated nodules.

*E. Squamous cell carcinoma @ Yes. Squamous cell carcinoma may appear as a hyperkeratotic papule, erosion, or nodule that presents as an ulcerated lesion with hard, raised edges (which may be ulcerated).

2. A 30-year-old male presents with a 1-year history of multiple widely disseminated papules and plaques. Lesions are also noted on the mucosa membranes in the mouth. The lesions vary in color from purple to pink and are slightly raised. Some of the lesions are irritated and appear to have been bleeding. Which of the following condition is most likely related to these skin lesions?

*A. AIDS @ Yes. Kaposi sarcoma is due to infection with herpesvirus type 8. Common in patients with AIDS, the lesions present as nodules or blotches that vary in color from red to purple, brown, and black. The lesions are usually papular. Lesions can be located on the skin, mucous membranes, respiratory system, and GI tract.

B. Melanoma @ No. Melanoma produces lesions that may vary in color and may metastasize to the skin but is not associated with bleeding.

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C. Contact dermatitis @ No. Contact dermatitis causes erythema or blistering lesions but does not usually bleed.

D. Staphylococcal infection @ No. Staphylococcal infection can cause a skin rash but would not persist for a year and would not cause bleeding.

E. Clotting factor deficiency @ No. Clotting factor deficiencies can cause bleeding but would not cause persistent skin lesions other than purpura.

3. Which of the following disorders is mediated by a type III hypersensitivity reaction?

A. Acne vulgaris @ No. The pathogenesis of acne vulgaris is related to endocrine, familial, and environmental factors.

B. Dermatomyositis @ No. Dermatomyositis is a humoral-mediated autoimmune disease in which antigen-specific antibodies are deposited in the microvasculature.

C. Contact dermatitis @ No. Contact dermatitis is a form of eczematous dermatitis. This is a form of type IV hypersensitivity reaction.

D. Bullous pemphigoid @ No. Bullous pemphigoid is mediated by different types of autoantibodies that react with components of desmosomes or hemidesmosomes. This is a form of type II hypersensitivity reaction.

*E. Discoid lupus erythematosus @ Yes. Discoid lupus erythematosus is the localized cutaneous form of systemic lupus erythematosus. Skin lesions are associated with immune complex deposition along the dermal–epidermal junction. This is a form of type III hypersensitivity reaction.

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4. A 4-week-old male presents with a rash in the diaper area. Physical examination reveals erythematous, slightly scaly patches covering the buttocks and the lower abdomen. Skin creases appear spared. The baby is otherwise healthy. Which of the following is the most likely diagnosis?

A. Tinea corporis @ No. Tinea corporis is ringworm and due to dermatophyte. It presents with a rash with raised borders and central clearing.

*B. Irritant contact dermatitis @ Yes. Irritant contact dermatitis, or diaper dermatitis, presents with erythematous areas in the diaper area due to skin contact with fecal and urinary material, entrapped moisture, and excessive heat.

C. Langerhans cell histiocytosis @ No. Langerhans cell histiocytosis is due to the neoplastic proliferation of Langerhans cells. The infant is critically ill with fever and a diffuse scaly rash.

D. Seborrheic dermatitis @ No. Seborrheic dermatitis presents with salmon-colored, scaly, oily plaques, it most commonly involves the scalp and face.

E. Psoriasis @ No. Psoriasis is characterized by well-demarcated silvery plaques that often involve skin folds in infants.

5. A 38-year-old female presents with many pigmented lesions on her body. Physical examination reveals numerous lesions, most prominent on the sun-exposed areas of the skin and scalp. The lesions are round, slightly asymmetrical, and vary in size from 5 to 10 mm. The patient states that the lesions have not changed in the past 6 to 8 months. Which of the following is the most likely diagnosis?

A. Malignant melanomas @ No. Malignant melanoma is asymmetrical in shape and the color varies more widely than in dysplastic nevi.

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B. Compound nevi @ No. Compound nevi are usually dark, typically elevated, 3 to 6 mm lesions with a very regular shape; most patients have about a dozen of these lesions.

*C. Dysplastic nevi @ Yes. Dysplastic nevi are pigmented, mole-like lesions that are very common. They often grow larger than ordinary moles, they are often flat, but parts may be raised and may have irregular and indistinct borders. Their color may not be uniform and may range from light pink to very dark brown. While not cancerous themselves, they may progress to melanoma.

D. Halo nevi @ No. Halo nevi are flesh-colored or dark nodules, usually 3 to 5 mm, surrounded by a ring of depigmented skin.

E. Lentigos @ No. Lentigos are flat, with sharp margins, uniformly pigmented, 2 to 4 mm diameter skin lesions.

6. What type of skin cancer is Bowen disease?

A. Basal cell @ No. Bowen disease is not considered to be basal cell cancer.

B. Melanoma @ No. Bowen disease is not melanoma.

*C. Squamous cell @ Yes. Bowen disease is a superficial erythematous patch or plaque, often with a scale, involvement is limited to the epidermis and is considered to be squamous cell carcinoma in situ.

D. Actinic keratosis @ No. Bowen disease is not actinic keratosis.

E. Seborrheic keratosis @ No. Bowen disease is not seborrheic keratosis.

7. A 55-year-old male presents with a 1-month history of sores in the mouth and on the skin. The sores started as blisters and then ruptured. The patient states the affected areas are painful, but no

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pruritis is noted. Physical examination demonstrates multiple painful erosions on the oral mucosa and tongue. On the trunk there are raw. Three are a few flaccid bullae noted. Rubbing of the skin near an affected area easily detaches the superficial part of the epidermis from the underlying skin. No target-like lesions are seen. Which of the following is the most likely diagnosis?

A. Bullous pemphigoid @ No. Bullous pemphigoid presents with tense bullae that do not rupture easily. Mucosal involvement is rare.

*B. Pemphigus vulgaris @ Yes. Pemphigus vulgaris is an autoimmune skin disorder that presents with blistering and painful erosions involving the mucous membranes and skin. Nikolsky sign is a helpful diagnostic clue. Pemphigus tends to begin in the mouth.

C. Dermatitis herpetiformis @ No. Dermatitis herpetiformis presents with pruritic vesicles, papules, and urticarial lesions on the extensor surfaces.

D. Stevens–Johnson syndrome @ No. Stevens–Johnson syndrome presents with severe, blistering and a history of drug ingestion or infection.

E. Toxic epidermal necrolysis @ No. Toxic epidermal necrolysis is an extension of Stevens–Johnson syndrome and presents with widespread flaccid blisters and involves >20% to 30% of the skin.

8. A 3-year-old girl presents with some new skin lesions. The patient has been itching the lesion and some are red and swollen. On the patient's abdomen, there are about 15 to 20 flesh-colored, pearly papules with a central umbilication. Which of the following is the most likely diagnosis?

A. Varicella @ No. Varicella is due to the varicella-zoster virus. It commonly affects children between the ages of 5 and 9. It presents with maculopapular lesions, vesicles, and scabs in various stages, low-grade fever, and malaise.

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B. Verruca plana @ No. Verruca plana is the plane wart, caused by human papillomavirus type 3 that affects children and young adults. Lesions are flesh-colored, tan or pink flat papules that are most often seen on the face and dorsal of the hands.

C. Herpes simplex @ No. Herpes simplex presents as a well-demarcated group of translucent, thin-roofed vesicles that tends to recur in the same location. It is caused by herpes simplex virus types I or II.

D. Verruca vulgaris @ No. Verruca vulgaris is the common wart caused by human papillomavirus types 1, 2, and 4. It presents as a gray or pink papule with a verrucous surface. The most common location is the hands but can appear anywhere.

*E. Molluscum contagiosum @ Yes. Molluscum contagiosum is due to a poxvirus and is more commonly noted in young children and teenagers. It is spread by direct contact. The lesions are flesh-colored or gray pearly papules 1 to 5 mm in diameter with a central umbilication.

9. A 35-year-old male, with a history of diabetes, presents with edema of the right leg with fever and chills. The swelling started 24 hours ago and is now erythematous, hot, and painful to the touch. There is a history of minor trauma to his right lower leg 3 days ago. Physical examination reveals a patient in mild distress secondary to pain, temperature 38.7 °C (101.6 °F), blood pressure 125/75 mm Hg, pulse 100/minute, and respirations 22/minute. The right leg has pitting edema of the lower leg and there is a diffuse, ill-demarcated, erythematous, warm area on the right lower leg. The right inguinal lymph nodes are palpable. Which of the following is the most likely diagnosis?

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A. Diabetic dermopathy @ No. Diabetic dermopathy presents as well-circumscribed, hyperpigmented, atrophic macules and patches on the anterior shins of patients with poorly controlled diabetes. There is no fever.

B. Necrotizing fasciitis @ No. Necrotizing fasciitis is an acute necrotizing infection involving the fascia. Within 24 to 48 hours pain, erythema and edema progress to patches of dusky blue discoloration and possible blistering.

C. Erysipelas @ No. Erysipelas is a skin infection that has a distinct border and is typically caused by group A strep.

*D. Cellulitis @ Yes. Cellulitis is an infection of the dermis and subcutaneous tissue caused by *Staphylococcus aureus* or *Streptococcus pyogenes*. Typically follows some trauma to the skin. Cellulitis presents with increased warmth and redness of the skin. Fever is common.

E. Impetigo @ No. Impetigo is typically noted on the face and presents with honey-crusted lesions.

10. A 25-year-old patient presents with hypopigmentation on the chest and back. The patient states that he has been working out more at the gym trying to lose a few pounds. On physical examination, there are many round and oval, discrete and confluent, hypopigmented patches on the patient's neck, chest, shoulders, and upper back. The rest of the examination is unremarkable. Which of the following is the most likely mechanism of hypopigmentation?

A. Sexually spread infection @ No. Viruses, such as the poxvirus that causes molluscum contagiosum, can cause a rash and can be spread by sexual contact. It presents with small, domed, umbilicated lesions.

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*B. Yeast infection of the skin @ Yes. Tinea versicolor is a skin infection in young adults with an increased incidence in warm, humid environments and is commonly noted in people who take part in strenuous exercise. It is caused by a fungus called *Malassezia furfur*. The typical lesions are oval, scaly, hypopigmented lesions on the chest, shoulders, and back.

C. Bacterial infection of the skin @ No. Bacterial infection can cause erysipelas and cellulitis. These infections cause redness to the skin with either a distinct border (erysipelas) or an indistinct border (cellulitis).

D. Contact with new soap product @ No. Contact with a new soap can lead to contact dermatitis and would cause papules and urticarial with pruritus.

E. Pressure and stroking of the skin @ No. Dermographism is an urticarial type rash that develops with firm stroking of the skin.

11. A 35-year-old man comes to the emergency department complaining of a painful infection on his left buttock that is interfering with his daily activities. It has been draining pus for the past 24 hours and seems to be getting worse. On physical examination, there is an erythematous and edematous 4 × 4-cm indurated plaque on the left buttock, within it, there are multiple necrotic, suppurating openings. Which of the following is the most likely diagnosis?

*A. Carbuncle @ Yes. A carbuncle is a collection of furuncles or boils. A carbuncle is a painful, erythematous, and edematous plaque with multiple heads. The lesions can develop central necrosis and rupture through the skin, with the discharge of purulent material. They are commonly located on the neck, axillae, and buttocks.

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B. Epidermal cyst @ No. An epidermal cyst is a fluctuant, tense swelling varying in size. The surface is smooth and shiny. The nodules are freely movable and are attached to the overlying skin. A central punctum is present on the surface in the form of a comedone.

C. Herpes zoster @ No. Herpes zoster is caused by the varicella-zoster virus. Presents with pain followed by grouped vesicles on an erythematous base that extends from the posterior midline anteriorly, outlining a dermatome.

D. Pilonidal cyst @ No. Pilonidal cysts are itchy, painful lesions found most commonly near the coccyx.

E. Folliculitis @ No. Folliculitis is a superficial staphylococcal infection of hair follicles that presents as small, thin-walled pustules at the follicular openings. Most commonly, they appear on the scalp or extremities.

12. A 6-year-old male presents with a 2-day history of multiple yellow, crusty lesions in the nasolabial folds and around the mouth. Which of the following is the treatment of choice?

A. Oral acyclovir @ No. Acyclovir is not indicated.

B. Oral amoxicillin @ No. Amoxicillin is not indicated.

*C. Oral cephalexin @ Yes. Impetigo is a common superficial skin infection. The bullous form is caused by *Staphylococcus aureus* and the nonbullous is caused by *Streptococcus pyogenes*. It presents with pustules and honey-crusted lesions. Treatment includes cephalexin, dicloxacillin, and azithromycin.

D. Topical ketoconazole @ No. Ketoconazole is not indicated.

E. Topical 5% hydrocortisone @ No. Hydrocortisone is not indicated.

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13. A 52-year-old male presents with a nonpainful lump on his thigh. Examination reveals a 3-cm soft subcutaneous lesion protruding above the surface of his left outer thigh. It is covered with normal skin and is soft and freely movable. The lesion has been slowly growing over the past few years. Which of the following is the most likely diagnosis?

A. Capillary hemangioma @ No. Capillary hemangioma is a bright red, vascular lesion that usually develops shortly after birth and then often disappears later in childhood.

B. Seborrheic keratosis @ No. Seborrheic keratosis causes a pigmented, superficial, usually warty, epithelial lesion.

C. Intradermal nevus @ No. Intradermal nevus is a flesh-colored to a black, elevated, lesion that is usually 3 to 6 mm in size.

D. Dermatofibroma @ No. Dermatofibroma are firm, red-to-brown, small papules or nodules that are found on the legs.

*E. Lipoma @ Yes. A lipoma is a benign mass lesion composed of adipose tissue bound by a limiting membrane. Lipomas are very common and can be found on the legs, trunk, back of the neck, and forearms. The lesions are only rarely malignant, a rapidly growing lesion should be biopsied to rule out liposarcoma.

14. A 68-year-old man presents with a lesion on the right side of the forehead. The lesion has been present for many years. On physical examination, the lesion is a 15-mm brown plaque with an adherent greasy scale that appears to be placed onto his face. Which of the following is the most likely diagnosis?

A. Actinic keratosis @ No. Actinic keratosis presents with flesh-colored or red-to-brown macules or papules with a rough scale. Most common on sun-exposed skin.

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*B. Seborrheic keratosis @ Yes. Seborrheic keratosis presents with light brown to black papules or plaques with an adherent waxy, greasy scale with a “stuck-on” appearance and most often found on the face and trunk.

C. Basal cell carcinoma @ No. Basal cell carcinoma presents as a papule with central ulceration and a pearly, raised border.

D. Bowen disease @ No. Bowen disease, or intraepidermal squamous cell carcinoma, presents irregular scaly plaques. Orange-red to brown in color, and several centimeters in diameter.

E. Melanoma @ No. Melanoma presents with asymmetric pigmented lesions with an irregular border.

15. A 14-year-old boy presents with a very itching rash on the back of his hands. He states that he was working in the yard mowing lawns and picking weeds with his parents 2 days ago and noted the rash later that day. On physical examination, there is erythema and swelling with papules, vesicle, and blistering in a linear pattern. Excoriations are also noted on the hands. Which of the following is the most likely diagnosis?

A. Scabies @ No. Scabies presents with typical linear, burrows, covered by a fine scale and with a tiny vesicle at the end. They can most commonly be found in the finger webs, on the flexor wrists, areolas, axillae, or around the umbilicus.

B. Impetigo @ No. Impetigo presents with discrete, thin-walled vesicles that rapidly become pustular and then rupture.

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*C. Poison ivy @ Yes. Poison ivy is an allergic contact dermatitis due to the oil urushiol. Itching is severe. The rash presents with redness and swelling with papules, vesicles, and blisters in a pattern related to the exposure. In most cases a linear pattern.

D. Tinea corporis @ No. Tinea corporis typically present as annular erythematous patches that have a scaly and sometimes vesiculated edge. The center usually clears as the lesion spreads centrifugally.

E. Toxic epidermal necrolysis @ No. Toxic epidermal necrolysis is a severe drug reaction where the entire or almost entire epidermis is sloughed off. Widespread erythema is present in a severely ill patient and large sheets of skin slough off, leaving moist erosions. Mucosal involvement is prominent.

16. A 15-year-old male presents with acne. He states that he washes his face daily with mild soap. On physical examination, the patient has mild-to-moderate acne, consisting of open comedones, some closed comedones, and a few pustules on the forehead and cheeks. The remainder of the examination is unremarkable. Which of the following is the best step in the treatment of this patient?

A. Avoid chocolate and spicy foods @ No. Avoiding chocolate and spicy foods is of no benefit.

B. Wash face with strong soap @ No. Frequent face washing with strong soaps may cause exacerbation of acne.

C. Oral isotretinoin @ No. Oral isotretinoin is used for severe cases of acne not responding to topical comedolytics and antibiotics. Isotretinoin is *teratogenic*.

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*D. Topical tretinoin @ Yes. Acne vulgaris affects adolescents and is more prevalent in males. Hormonal influences, abnormal keratinization of pilosebaceous units, and colonization by *Propionibacterium acnes* are important pathologic factors. Treatment depends on severity. Topical retinoids (tretinoin) are topical comedolytic agents that are effective in mild-to-moderate forms of noninflammatory acne, which presents with open comedones. Daily use will lead to improvement in several weeks.

E. Oral antibiotic @ No. Treatment with oral antibiotics is aimed at decreasing bacterial colonization. It is used for patients who fail to respond to topical treatments or have severe forms of inflammatory acne. The antibiotics of choice include doxycycline and minocycline.

17. Which of the following is the most likely location for the occurrence of basal cell skin carcinoma?

A. Lower legs @ No. Basal cell skin carcinoma is not commonly noted on the lower legs.

B. Forearms @ No. Basal cell skin carcinoma is not commonly noted on the forearms.

*C. Face @ Yes. Basal cell carcinoma is most commonly noted on the face as this part of the body has the most sun exposure.

D. Back @ No. Basal cell skin carcinoma is not commonly noted on the back.

E. Neck @ No. Basal cell skin carcinoma is not commonly noted on the neck.

18. A 35-year-old female presents with silvery, scaling plaques on her elbows and knees. Her mother had the same condition in the past. Which of the following is the most likely diagnosis?

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A. Rosacea @ No. Rosacea involves the central face. Erythema, telangiectasias, acne-like lesions, and rhinophyma are noted.

B. Acne vulgaris @ No. Acne vulgaris presents with comedones, papules, and cysts.

*C. Psoriasis vulgaris @ Yes. Psoriasis vulgaris presents as a scaly, silver rash on the knees, elbows, and scalp. Nail pitting may be noted. There is a genetic component to this condition.

D. Pemphigus vulgaris @ No. Pemphigus vulgaris starts with small vesicles, on the oral or nasal mucosa, then spreads to other parts of the body. Bullae are delicate and flaccid. Nikolsky sign is positive.

E. Pityriasis rosea. Pityriasis rosea presents first with a red, scaling herald patch and develops small, pink, oval patches in a Christmas tree configuration on the flexural lines.

19. Which of the following neoplasms may arise from actinic keratosis?

A. Melanoma @ No. Melanoma is not linked to actinic keratosis.

B. Mycosis fungoides @ No. Mycosis fungoides are not linked to actinic keratosis.

C. Basal cell carcinoma @ No. Basal cell carcinoma is not linked to actinic keratosis.

D. Merkel cell carcinoma @ No. Merkel cell carcinoma is not linked to actinic keratosis.

*E. Squamous cell carcinoma @ Yes. Actinic keratosis is premalignant and may progress to squamous cell carcinoma.

20. Which of the following is the etiology of psoriasis?

*A. Autoimmune disease @ Yes. Psoriasis is characterized by the excessive and rapid growth of the epidermal skin layer. It is multifactorial and is classified as an autoim-

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mune-mediated inflammatory disease. It can occur in patients with other autoimmune diseases.

B. Bacterial disease @ No. Bacterial disease may trigger psoriasis but it is not the etiology.

C. Fungal disease @ No. Fungal disease may trigger psoriasis but it is not the etiology.

D. Granulomatous disease @ No. Granuloma formation is not noted in psoriasis.

E. Large vessel vasculitis @ No. Large vessel vasculitis does not play a role in psoriasis.

21. A 12-year-old male presents with intensely pruritic skin lesions on his axillary folds, waistband, wrists, and interdigital spaces of the hand. Linear burrows are noted in the interdigital web spaces. Which of the following is the most likely diagnosis?

A. Lichen simplex chronicus @ No. Lichen simplex chronicus presents with chronic itching that leads to thick, leathery, darkened, skin. Most common between 35 and 50 years of age.

B. Dermatitis herpetiformis @ No. Dermatitis herpetiformis typically affects the scalp, shoulders, anterior surface of the knees, elbows, and the small of the back.

C. Seborrheic dermatitis @ No. Seborrheic dermatitis affects the scalp, posterior surface of the head, neck, and shoulders, the perianal region, chin, groin, umbilicus, and sternum. Lesions are scaly and have a greasy appearance.

D. Lichen planus @ No. Lichen planus affects the mouth, anterior forearms, genitalia, the small of the back, and the posterior aspect of the leg below the knee. Lesions are papules and polygonal plaques that are shiny, flat topped, and firm.

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*E. Scabies @ Yes. Scabies is a contagious skin disease that presents with severe itching. Scabies is due to the mite *Sarcoptes scabiei*. It is most commonly noted on the wrists, elbows, buttocks, genitals, waistband, and interdigital webspace of the hands.

22. A 65-kg patient presents with extensive burns on both lower extremities. According to the Parkland formula, this patient requires 9,360 mL of fluid. How much of this fluid should be given during the first 8 hours of treatment?

A. 2,340 mL @ No. The Parkland formula states that the patient should receive 4 mL of fluid per kilogram of body weight, times the percentage of the body surface area that has been burned.

*B. 4,680 mL @ Yes. The Parkland formula states that the patient should receive 4 mL of fluid per kilogram of body weight, times the percentage of the body surface that has been burned. Using the rule of nines this patient has 36% of their body burned. [Total Fluid = (4 mL/kg) (% TBSA Burned); 9,360 mL = (4 mL) (65 kg) (36%)]. According to the Parkland formula, half of the fluid should be given the first 8 hours and that volume is 4,680 mL.

C. 7,020 mL @ No. The Parkland formula states the patient should receive 4 mL of fluid per kilogram of body weight, times the percentage of the body surface area that has been burned.

D. 9,360 mL @ No. The Parkland formula states that the patient should receive 4 mL of fluid per kilogram of body weight, times the percentage of the body surface area that has been burned.

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23. A 50-year-old patient with a history of chronic dry skin develops widespread 1 to 3 cm, inflamed, coin-shaped lesions. The lesions began as itchy patches of vesicles and papules. They later oozed straw-colored fluid and crusted over. The lesions are on the extensor surfaces of the extremities and the buttocks. Which of the following is the most likely diagnosis?

A. Seborrheic dermatitis @ No. Seborrheic dermatitis produces hyperkeratosis on the scalp and face.

*B. Nummular dermatitis @ Yes. Nummular dermatitis or discoid eczema is a chronic inflammation of the skin, the etiology of which is unknown. There are two forms of discoid eczema, exudative with oozy papules, blisters, and plaques; and dry with erythematous, dry plaques. The lesions are classically called coin lesions and are typically 1 to 3 cm in diameter.

C. Stasis dermatitis @ No. Stasis dermatitis can produce discoloration and ulceration of the lower legs.

D. Pompholyx @ No. Pompholyx, or vesicular hand/foot dermatitis, presents with crops of pruritic, deep-seated vesicles on the palms and soles.

E. Psoriasis @ No. Psoriasis can produce coin-shaped lesions but is covered with a silvery scale.

24. A 40-year-old female presents with an itchy patch of skin on her right arm. Three months ago, the patient had a few insect bites at the site, the bites have resolved but the itching continues. On physical examination, there is a well-defined 4-cm oval patch of skin that is dry, scaly, hyperpigmented, and thickened. A ring of brownish papules can be seen on the periphery of the lesion. Which of the following is the most likely diagnosis?

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*A. Lichen simplex chronicus @ Yes. Lichen simplex chronicus, also called neurodermatitis, presents with chronic itching and scratching. The constant scratching causes the skin to become thick, leathery, and darkened as a solitary plaque. It is most common between 35 and 50 years of age.

B. Seborrheic dermatitis @ No. Seborrheic dermatitis causes dandruff and cradle cap.

C. Stasis dermatitis @ No. Stasis dermatitis is seen at the ankles and is related to peripheral vascular disease.

D. Pompholyx @ No. Pompholyx, or vesicular hand/foot dermatitis, presents with crops of pruritic, deep-seated vesicles on the palms and soles.

E. Psoriasis @ No. Psoriasis causes salmon-colored plaques with a silvery scale.

25. An adult patient presents with burns after a house fire. There is diffuse erythema and edema of the face and most of the scalp hair is scorched, with some blistering of the underlying skin. Both upper extremities circumferentially show diffuse erythema and areas of extensive blistering. The rest of their body shows no significant burns. Which of the following is the estimated body surface area of the burn?

A. 9% @ No. Based on the rule of 9s, this patient's estimated body surface area of burn is not 9%.

B. 18% @ No. Based on the rule of 9s, this patient's estimated body surface area of burn is not 18%.

*C. 27% @ Yes. Based on the rule of 9s, this patient has significant burns of the face, scalp, and both arms, for a total of 27% estimated body surface area. These rules allow a quick estimate for the calculations of the required volume of resuscitation fluid.

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D. 36% @ No. Based on the rule of 9s, this patient's estimated body surface area of burn is not 36%.

E. 45% @ No. Based on the rule of 9s, this patient's estimated body surface area of burn is not 45%.

26. A 69-year-old farmer presents with a nonhealing, indolent, 1.5-cm ulcer on the helix of the right ear. The ulcer has been present and growing for the past 8 months. Physical examination shows sun-damaged facial skin, but no other ulcers. There is no lymphadenopathy. Which of the following is the most likely diagnosis?

A. Adenocarcinoma @ No. Adenocarcinoma would be very rare.

B. Basal cell carcinoma @ No. Basal cell carcinoma favors the upper part of the face, above a horizontal line drawn across the mouth.

C. Verruca plana @ No. Verruca plana are secondary to human papillomavirus. They are small, smooth flat, flesh-colored warts and can occur in large numbers; most common on the face, neck, hands, wrists, and knees

D. Malignant melanoma @ No. Melanoma is again very rare in this location. A history of a pigmented lesion that underwent changes in color, appearance, or diameter would have been suggestive of melanoma as the cause.

*E. Squamous cell carcinoma @ Yes. Squamous cell carcinoma presents as a nonhealing ulceration classically on the lip, face, ears, hands, and forearms. The lesions are often painful and tender.

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27. A 50-year-old male presents with a 2-week history of an itchy rash in the groin. On examination, the rash is made up of pink and red, scaly patches with raised borders. The rash is in the right inguinal region extending down the inner thigh and involving the scrotum. Woods light examination is negative. Which of the following is the most likely diagnosis?

A. Seborrheic dermatitis @ No. Seborrheic dermatitis may appear in intertriginous areas. Dark red, moist plaques covered with yellowish, greasy scale, with or without fissuring, can be seen in the groin and intergluteal crease.

B. Inverse psoriasis @ No. Inverse psoriasis is noted in the intertriginous areas as bright red, shiny, moist, glistening plaques with no scale. Woods light examination will not show fluorescence in inverse psoriasis.

*C. Tinea cruris @ Yes. Tinea cruris is a common infection that may be caused by the dermatophytes that infect the skin, *Epidermophyton*, *Microsporum*, and *Trichophyton*. Presents as itchy, pink-to-red, scaly, annular, and raised patches in the groin and spreads out. Woods light examination of tinea cruris does not show fluorescence.

D. Erythrasma @ No. Erythrasma presents with sharply delineated, dry, brown, slightly scaling patches occurring in the intertriginous areas, genitocrural creases, and the webs between toes. It is typically asymptomatic. Due to *Corynebacterium minutissimum*, Woods light examination reveals a coral-red fluorescence.

E. Intertrigo @ No. Intertrigo is an irritant contact dermatitis that appears in intertriginous areas due to heat, moisture, and friction. Shiny, moist pink patches are seen that at the base of the crease often have deep, hemorrhagic, and painful fissures.

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28. A 3-year-old female presents with small, gray blisters on her hands and feet and painful ulcers on her lips, palate, and buccal mucosa. Systemic features and lymphadenopathy are absent. Which of the following viruses is most likely to have caused this disorder?

A. Coronavirus @ No. Coronavirus is a cause of the common cold.

*B. Coxsackievirus type A16 @ Yes. Hand-foot-and-mouth disease presents with pink patches or small, elongated gray blisters, that peel off leaving no scars. Small vesicles and ulcers are noted in the mouth. It is most frequently caused by coxsackievirus type A16.

C. Herpes simplex virus type 1 @ No. Herpes simplex virus type 1 causes gingivostomatitis and pharyngotonsillitis, presents with painful ulcers of the oral region.

D. Parainfluenza type 3 @ No. Parainfluenza virus is responsible for croup.

E. Rhinovirus @ No. Rhinovirus causes the common cold.

29. A 55-year-old male with a history of severe sunburns presents with several erythematous, slightly raised, 1-cm patches of skin on his cheek below the right eye. The lesions are rough, very adherent, yellow-brown scale. Which of the following is the treatment of choice?

*A. Topical 5-fluorouracil @ Yes. Actinic keratosis presents as red, raised, scaly patches. They occur on sun-exposed skin areas, with favorite target sites including face, back of hands and arms, and neck. Treatment options include 5-fluorouracil, for large or multiple lesions, cryotherapy, photodynamic therapy, and surgery.

B. 2% Hydrocortisone @ No. Actinic keratosis presents as red, raised, scaly patches. Hydrocortisone is not indicated for actinic keratosis.

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C. Topical isotretinoin @ No. Actinic keratosis presents as red, raised, scaly patches. Topical isotretinoin is not indicated for actinic keratosis.

D. Oral tetracycline @ No. Actinic keratosis presents as red, raised, scaly patches. Oral tetracycline is not indicated for actinic keratosis.

E. Mohs surgery @ No. Actinic keratosis presents as red, raised, scaly patches. Mohs surgery is not indicated for actinic keratosis.

30. A 21-year-old female presents with a 1-month history of skin rash. The rash started with a large, pink patch on the right lower back, and then, several days later, noted several smaller reddish, scaly spots on her back. Physical examination reveals an oval pink patch on her right lower back and multiple pink macules on her back, aligned with the cutaneous cleavage lines. Which of the following is the most likely diagnosis?

*A. Pityriasis rosea @ Yes. Pityriasis rosea is an inflammatory exanthem of unknown etiology. It begins with a single herald patch larger than succeeding lesions and may persist for a week or two before the other lesions appear. Individual patches are oval and covered with finely wrinkled, dry skin. This is followed by the development of salmon-colored macular and papular discrete and coalescing lesions. The fully developed eruption has a “Christmas tree” pattern.

B. Psoriasis @ No. Psoriasis vulgaris is a chronic papulosquamous inflammatory skin disease that clinically presents with well-demarcated, erythematous plaques covered with a silvery-white, nonadherent scale. Typically, the elbows, knees, umbilicus, lower back, and scalp are affected.

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C. Seborrheic dermatitis @ No. Seborrheic dermatitis is an inflammatory skin disease that most commonly appears in teenagers or young adults as pruritic erythematous patches with greasy yellow or brown scales in the scalp, supraorbital area, glabella, nasolabial folds, external ear canals, and anterior chest.

D. Tinea versicolor @ No. Tinea versicolor is a common skin infection due to yeast. Lesions consist of oval scaly macules, papules, and patches on the chest, shoulders, and back. The infection is promoted by heat and humidity.

E. Varicella @ No. Varicella is an infectious disease most commonly seen in children. It is characterized by maculopapules, vesicles, and crusts in various stages of evolution.

31. Which of the following is linked to the development of Stevens–Johnson syndrome?

A. Streptomycin @ No. The development of Stevens–Johnson syndrome is not linked to streptomycin.

B. Herpes infection @ No. The development of Stevens–Johnson syndrome is not linked to herpes infection.

C. Staphylococcal infection @ No. The development of Stevens–Johnson syndrome is not linked to staphylococcal infection.

*D. Lamotrigine (Lamictal) @ Yes. Stevens–Johnson syndrome is a severe skin reaction triggered by certain medications and infections. Presents with fever and flu-like symptoms and then the skin blisters and peels, including the mucous membranes. Etiologies include the medications carbamazepine, lamotrigine, phenytoin, allopurinol, sulfonamides, nevirapine, and the NSAIDS from the oxicam group. Infections due to Mycoplasma and cytomegalovirus

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E. Diltiazem (Cardizem) @ No. The development of Stevens–Johnson syndrome is not linked to diltiazem (Cardizem).

32. A 35-year-old male presents with a 4-cm area of hair loss to the posterior scalp. The area is circular with short exclamation point hairs at the margins. No other skin changes are noted. Which of the following is the most likely diagnosis?

A. Male pattern alopecia @ No. Male-pattern hair loss begins above the temples and vertex of the scalp. It progresses to a rim of hair at the sides and rear of the head remains. This is a form of nonscarring hair loss.

B. Chemical alopecia @ No. Chemical alopecia is due to chemical agents such as sodium hydroxide or ammonium thioglycollate based.

*C. Alopecia areata @ Yes. Alopecia areata, one or more round bald patches appear suddenly, most often on the scalp. The bald areas may have a smooth surface, completely devoid of hair or with scattered “exclamation mark” hairs. Exclamation mark hairs are 2 to 3 mm in length, broken or tapered, with a club-shaped root. It may take months and sometimes years to regrow all the hair.

D. Pseudofolliculitis barbae @ No. Pseudofolliculitis barbae is due to ingrown hairs and not hair loss.

E. Alopecia mucinosa @ No. Alopecia mucinosa is the presence of mucin around the hair follicles and is characterized by bald patches of skin in which hair follicles are prominent.

33. A 24-year-old male presents with scaly hypopigmented discrete and confluent macules to the upper torso and arms. History reveals this to be a recurrent problem, which has responded in the

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past to “some kind of shampoo,” according to the patient. Which of the following could be used to confirm the diagnosis?

A. Immunofluorescence studies @ No. Immunofluorescence studies are not used to confirm the diagnosis of tinea versicolor.

B. Excisional biopsy @ No. Excisional biopsy is not used to confirm the diagnosis of tinea versicolor.

C. Bacterial cultures @ No. Bacterial cultures are not used to confirm the diagnosis of tinea versicolor.

D. RPR serology @ No. RPR serology is not used to confirm the diagnosis of tinea versicolor.

*E. KOH prep @ Yes. Tinea versicolor is a skin infection in young adults that presents with oval, scaly, hypopigmented lesions on the chest, shoulders, and back. It is caused by a fungus called *Malassezia furfur*. The test of choice is the KOH prep to identify fungal elements.

34. Which of the following best defines a macule?

A. Raised, solid lesion <5 mm @ No. Papules are elevated lesions usually <10 mm in diameter that can be felt or palpated.

*B. Flat, circumscribed area <10 mm @ Yes. A macule is a flat, nonpalpable lesion usually <10 mm in diameter.

C. Solid, round circumscribed elevation >10 mm in diameter @ No. Plaques are palpable lesions >10 mm in diameter that are elevated or depressed compared to the skin surface.

D. Large, circumscribed fluid-containing elevation >10 mm in diameter @ No. Vesicles are

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small, clear, fluid-filled blisters <10 mm in diameter. Bullae are clear fluid-filled blisters >10 mm in diameter.

35. Which of the following is the biopsy of choice in suspected melanoma of the lower extremity?

A. Shave @ No. Biopsy should be excision for most suspected melanoma lesions except those on anatomically sensitive or cosmetically important areas; then a broad shave biopsy can be done.

B. Punch @ No. Punch is not the biopsy of choice in suspected melanoma.

C. Curette @ No. Curette is not the biopsy of choice in suspected melanoma.

*D. Excisional @ Yes. Melanoma is a form of skin cancer. Biopsy should be excisional for most lesions except those on anatomically sensitive or cosmetically important areas; then a broad shave biopsy can be done.

36. Which of the following conditions is linked to melasma?

A. Menses @ No. Melasma is a chronic skin condition that presents with symmetrical, blotchy, brown facial pigmentation. Menses is not linked to melasma.

*B. Pregnancy @ Yes. Melasma is a chronic skin condition that presents with symmetrical, blotchy, brown facial pigmentation. Triggers include sun exposure, pregnancy, hormone treatments, hypothyroidism, and certain medications

C. Hyperthyroidism @ No. Melasma is a chronic skin condition that presents with symmetrical, blotchy, brown facial pigmentation. Hyperthyroidism is not linked to melasma.

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D. Tyrosine inhibitors @ No. Tyrosine inhibitors and corticosteroids are used in the treatment of melasma.

E. Moderate-strength corticosteroids @ No. Melasma is a chronic skin condition that presents with symmetrical, blotchy, brown facial pigmentation. Moderate-strength corticosteroids are not linked to melasma.

37. A patient presents with an arthropod bite. On the physical examination, there is a central blue color of impending necrosis with a surrounding white area of vasospasm and a peripheral red halo of inflammation. Which of the following is the most likely agent?

A. Lice @ No. Lice are wingless, blood-sucking insects that are transmitted from person to person. Lice nits are ovoid, grayish-white eggs attached to hair shafts.

B. Scabies @ No. Characteristic findings of scabies on physical examination include nonspecific erythematous papules, excoriations, and burrows. Burrows, tunnels in the epidermis, are pathognomonic for scabies.

C. Deer ticks @ No. Tick bites often cause a red papule at the bite site and may induce hypersensitivity or granulomatous foreign body reactions.

D. Black widow spiders @ No. Black widow spiders' bite site is red, and two fang marks may be visible. Scabies is a contagious skin disease that presents with severe itching. It is most commonly noted on the wrists, elbows, buttocks, genitals, waistband, and interdigital webspace of the hands.

*E. Brown recluse spiders @ Yes. Brown recluse spider bites often a painless bite. Symptoms develop 2 to 8 hours after a bite. Initially, the bite site is mildly red and may reveal fang marks. This initial redness changes to pallor with a red ring surrounding the area.

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The center area will then often blister, which over 12 to 48 hours can sink, turning bluish then black as this area of tissue dies.

38. Which of the following disorders is characterized by epidermal hyperplasia and an increase in epidermal turnover?

A. Atopic dermatitis @ No. Inflammation in atopic dermatitis is the result of elevated T-lymphocyte activation, defective cell-mediated immunity, and IgE overproduction. Epidermal hyperplasia is not involved in atopic dermatitis.

B. Tinea corporis @ No. Tinea corporis is a fungal infection and it does not have epidermal hyperplasia.

C. Melasma @ No. Melasma is due to the overproduction of melanin by melanocytes.

*D. Psoriasis @ Yes. Psoriasis is characterized by an increased epidermal cell turnover, increased numbers of epidermal stem cells, and an abnormal differentiation of keratin. This leads to the classic scale associated with psoriasis.

E. Ecthyma @ No. Ecthyma is the result of an infection from group A beta-hemolytic streptococcus and contaminated with staphylococci. Ecthyma has no epidermal hyperplasia.

39. Which of the following scabicides is associated with neurotoxicity in infants and young children?

*A. Lindane @ Yes. Lindane is concentrated in the CNS and toxicity from systemic absorption in infants has been reported.

B. Crotamiton @ No. Crotamiton is not associated with CNS toxicity, and its primary side effects include dermatitis and conjunctivitis.

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C. 10% sulfur ointment @ No. Sulfur ointment is no longer used because newer agents have been developed and are not neurotoxic.

D. Benzyl benzoate @ No. Benzyl benzoate may cause some local skin irritation.

E. Permethrin @ No. Permethrin is the drug of choice for the treatment of scabies and is not associated with neurotoxicity.

40. A 3-month-old infant presents with her mother. She states that she noticed a rash on the infant's scalp. Physical examination reveals erythematous and scaling crusty lesions involving the vertex of the scalp. Which of the following is the most appropriate initial intervention?

A. Warm compresses @ No. Warm compresses are not indicated.

B. Selenium sulfide shampoo @ No. Selenium sulfide shampoos can be used in the treatment of scalp seborrheic dermatitis in adults, it is not recommended for use in infants and young children.

C. Permethrin 1% cream rinse @ No. Permethrin 1% cream rinse is utilized in the treatment of pediculosis, not seborrheic dermatitis.

D. Scrubbing with hexachlorophene @ No. Hexachlorophene is a bacteriostatic skin cleanser that is not indicated in the treatment of seborrheic dermatitis. It is also not recommended for use in infants and young children.

*E. Baby shampoo and gentle brushing @ Yes. This infant has scalp seborrheic dermatitis ("cradle cap"). Initial treatment consists of baby shampoo followed by gentle brushing to remove scales.

41. A 36-year-old female comes to the office because a mole on her left calf has changed. On physical examination of the left posterior lower leg, there is a 12-mm, asymmetrical, variegated

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blue-black macule with a raised pink plaque in the upper half of the lesion. Which of the following is the most appropriate clinical management of this lesion?

A. Cryosurgery @ No. Physical destruction, with cryosurgery, of suspected melanoma should never be used because histologic verification of the diagnosis cannot be performed.

B. Topical retinoids @ No. Chronic use of topical retinoids may be effective for superficial solar keratoses.

*C. Excisional surgery @ Yes. Surgical excision of suspected melanoma is necessary for histologic diagnosis and treatment of the lesion.

D. Calcineurin inhibitors @ No. Calcineurin inhibitors are used in the treatment of atopic dermatitis.

E. Topical chemotherapy @ No. Topical chemotherapy, such as 5-Fluorouracil, is an effective treatment for squamous cell carcinoma.

42. A 26-year-old female comes to the office for evaluation of a painful lump on her right buttock for the past week. Initially, it was a firm, tender nodule that has increased in size and tenderness in the past two days. On physical examination, there is a 3-cm fluctuant tender red nodule on the right buttock. Which of the following is the most appropriate initial intervention?

*A. Incision and drainage @ Yes. Abscesses present as fluctuant tender masses and are best treated with incision and drainage.

B. Mupirocin ointment @ No. Mupirocin ointment is effective in eliminating nasal carriage of *S. aureus*.

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C. Moist compresses @ No. Application of moist heat can localize or consolidate the abscess when the furuncle is firm and nonfluctuant aiding in the development and drainage of the abscess.

D. Topical antibiotics @ No. Systemic antibiotics may speed the healing of the tissue and may be started after incision and drainage, but topical antibiotics are not indicated.

E. Topical steroids @ No. Topical steroids are not indicated.

43. A 45-year-old female presents with a new rash. On physical examination, in the left axillary area, there is a hyperpigmented, velvety, macular rash. Which one of the following conditions is associated with this skin lesion?

A. Hypertension @ No. Acanthosis nigricans is a darkening and thickening of the skin occurring mainly in skin folds of the armpit, groin, and back of the neck. These skin changes are not noted in hypertension.

*B. Diabetes mellitus @ Yes. Acanthosis nigricans is a darkening and thickening of the skin occurring mainly in skin folds of the armpit, groin, and back of the neck. It is associated with insulin resistance and diabetes mellitus and can be associated with certain cancers.

C. Benign prostatic hyperplasia @ No. Acanthosis nigricans is a darkening and thickening of the skin occurring mainly in skin folds of the armpit, groin, and back of the neck. These changes are not noted in benign prostatic hypertrophy.

D. Nephrolithiasis @ No. Acanthosis nigricans is a darkening and thickening of the skin occurring mainly in skin folds of the armpit, groin, and back of the neck. These changes are not noted in nephrolithiasis.

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E. Hepatitis B @ No. Acanthosis nigricans is a darkening and thickening of the skin occurring mainly in skin folds of the armpit, groin, and back of the neck. The changes are not noted in hepatitis B.

44. Which of the following antibiotics is considered first-line treatment in the patient with moderate acne vulgaris?

A. Penicillin @ No. Treatment with oral antibiotics is aimed at decreasing bacterial colonization. It is used for patients who fail to respond to topical treatments or have severe forms of inflammatory acne. Penicillin is not a first-line antibiotic for acne vulgaris.

*B. Minocycline @ Yes. Treatment with oral antibiotics is aimed at decreasing bacterial colonization. It is used for patients who fail to respond to topical treatments or have severe forms of inflammatory acne. The antibiotics of the first choice include doxycycline and minocycline.

C. Nitrofurantoin @ No. Treatment with oral antibiotics is aimed at decreasing bacterial colonization. It is used for patients who fail to respond to topical treatments or have severe forms of inflammatory acne. Nitrofurantoin is not a first-line antibiotic for acne vulgaris.

D. Metronidazole @ No. Treatment with oral antibiotics is aimed at decreasing bacterial colonization. It is used for patients who fail to respond to topical treatments or have severe forms of inflammatory acne. Metronidazole is not a first-line antibiotic for acne vulgaris.

E. Trimethoprim-sulfamethoxazole @ No. Treatment with oral antibiotics is aimed at decreasing bacterial colonization. It is used for patients who fail to respond to topical treat-

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ments or have severe forms of inflammatory acne. Trimethoprim-sulfamethoxazole is not a first-line antibiotic for acne vulgaris.

45. Which of the following is the most common infectious agent causing erysipelas?

A. *Candidia albicans* @ No. *Candidia albicans* is not a cause of erysipelas.

B. *Bartonella henselae* @ No. *Bartonella henselae* is the cause of bacillary angiomatosis.

*C. *Streptococcus pyogenes* @ Yes. Erysipelas is most often caused by *Streptococcus pyogenes*, group A beta-hemolytic streptococci, and occurs most frequently on the legs and face. Other causes have been reported, including *Staphylococcus aureus*, *Klebsiella pneumoniae*, *Haemophilus influenzae*, *Escherichia coli*, *S. warneri*, *Streptococcus pneumoniae*, *S. pyogenes*, and *Moraxella* species.

D. *Pseudomonas aeruginosa* @ No. *Pseudomonas aeruginosa* is not a cause of erysipelas.

E. *Staphylococcus epidermidis* @ No. *Staphylococcus epidermidis* is not a cause of erysipelas.

46. Which of the following pathogens is associated with erythema infectiosum?

A. Paramyxovirus @ No. Paramyxoviruses include mumps, measles, and respiratory syncytial viruses.

*B. Parvovirus B19 @ Yes. Erythema infectiosum, often referred to as the fifth disease, is caused by human parvovirus B19.

C. Human herpesvirus 6 @ No. Human herpesvirus 6 causes exanthema subitum or roseola.

D. Coxsackievirus A2 @ No. Coxsackie A2 causes hand, foot, and mouth disease.

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E. Orthomyxovirus @ No. Orthomyxovirus is the cause of influenzae.

47. Which of the following disorders results from autoimmune destruction of melanocytes?

*A. Vitiligo @ Yes. Vitiligo is due to the autoimmune destruction of the melanocytes.

B. Albinism @ No. Albinism is a genetic disorder in which the patient has little or no melanin pigment.

C. Melasma @ No. Melasma is a chronic skin condition that presents with symmetrical, blotchy, brown facial pigmentation due to overproduction of melanin.

D. Chloasma @ No. Chloasma is a green pigmentation of the skin.

E. Pityriasis alba @ No. Pityriasis alba is due to infection with Malassezia yeasts that inhibits tyrosinase causing hypopigmentation.

48. Which of the following pathologic features is most important in the initial staging of malignant melanoma?

A. Lesion diameter @ No. Lesion diameter is not the most important feature in the initial staging of malignant melanoma.

*B. Breslow depth @ Yes. The Breslow thickness is reported for invasive melanomas. It is measured vertically in millimeters from the top of the granular layer (or base of superficial ulceration) to the deepest point of tumor involvement. It is a strong predictor of outcome; the thicker the melanoma, the more likely it is to metastasize.

C. Mitotic rate @ No. Mitotic rate is not the most important feature in the initial staging of malignant melanoma.

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D. Ulceration @ No. Ulceration is not the most important feature in the initial staging of malignant melanoma.

E. LDH level @ No. LDH level is not the most important feature in the initial staging of malignant melanoma.

49. A 3-year-old female is diagnosed with atopic dermatitis. Which of the following disorders is this child at risk for in the future?

*A. Asthma @ Yes. Up to 50% of patients with atopic dermatitis develop asthma and/or allergic rhinitis in the future.

B. Psoriasis @ No. There is no link between atopic dermatitis and psoriasis.

C. Ulcerative colitis @ No. There is no link between atopic dermatitis and ulcerative colitis.

D. Lupus erythematosus @ No. There is no link between atopic dermatitis and lupus erythematosus.

E. Basal cell carcinoma @ No. There is no link between atopic dermatitis and basal cell carcinoma.

50. A 38-year-old woman presents with a 6-month history of red cheeks and acne. On physical examination, she has prominent telangiectasias, scattered papules, and pustules. Which of the following is the most appropriate treatment?

A. Topical diphenhydramine @ No. Rosacea is a chronic inflammatory disorder characterized by facial flushing, telangiectasias, erythema, papules, pustules, and rhinophyma. Topical diphenhydramine is not indicated.

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B. Triamcinolone ointment @ No. Rosacea is a chronic inflammatory disorder characterized by facial flushing, telangiectasias, erythema, papules, pustules, and rhinophyma. Triamcinolone ointment is not indicated.

*C. Topical metronidazole @ Yes. Rosacea is a chronic inflammatory disorder characterized by facial flushing, telangiectasias, erythema, papules, pustules, and rhinophyma. Treatment depends on the severity and includes topical metronidazole, topical and oral antibiotics, topical ivermectin, isotretinoin, and surgery.

D. Clotrimazole cream @ No. Rosacea is a chronic inflammatory disorder characterized by facial flushing, telangiectasias, erythema, papules, pustules, and rhinophyma. Clotrimazole cream is not indicated.

E. Permethrin cream @ No. Rosacea is a chronic inflammatory disorder characterized by facial flushing, telangiectasias, erythema, papules, pustules, and rhinophyma. Permethrin cream is not indicated.

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CHAPTER 2: OCULAR SYSTEM

1. Which of the following conditions is treated with a trabeculectomy?

A. Cataracts @ No. Cataracts are treated with phacoemulsification of the lens with the possible placement of a prosthetic intraocular lens.

*B. Open-angle glaucoma @ Yes. Open-angle glaucoma is treated with medications or trabeculectomy. Angle-closure glaucoma is treated with iridotomy.

C. Lacrimal gland obstruction @ No. Lacrimal gland obstruction is treated with balloon catheter dilation or stenting.

D. Central retinal artery occlusion @ No. Central retinal artery occlusion is treated by addressing the underlying cardiovascular risk factors.

E. Age-related macular degeneration @ No. Age-related macular degeneration is treated with intravitreal vascular endothelial growth factor inhibitors and thermal laser photo-coagulation.

2. A 50-year-old male presents with sudden vision loss of the left eye. Fundoscopic examination reveals retinal edema, a cherry-red spot, and “box-car” appearance of the retinal arterioles. Erythrocyte sedimentation rate is normal. Which of the following is the most likely cause of this condition?

*A. Embolism @ Yes. Occlusion of the central retinal artery rapidly causes blindness with loss of the inner retinal layers. Examination of the fundus will reveal retinal edema, a cherry-red spot, and box-car appearance of the retinal arterioles. An embolism is the most common cause of central retinal artery occlusion.

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B. Temporal arteritis @ No. Temporal arteritis is a rare cause of central retinal artery occlusions and would have an elevated sedimentation rate

C. Polycythemia vera @ No. Polycythemia vera may cause retinal artery thrombosis but are very rare.

D. Hypertension @ No. Hypertension is more likely to cause bleeding.

E. Tumor @ No. Tumors may cause retinal artery thrombosis but are very rare.

3. A 70-year-old female presents to the emergency department because of sudden onset of right eye pain. The pain was accompanied by blurred vision, nausea, and vomiting. Physical examination reveals a tender eye with a hazy cornea and a partially dilated and fixed pupil. Which of the following is the most likely diagnosis?

A. Acute bacterial conjunctivitis @ No. Acute bacterial conjunctivitis causes a mucopurulent discharge. The conjunctiva is red. Visual acuity is typically not affected.

B. Acute Retinal detachment @ No. Retinal detachment presents with painless vision loss. It is described as a curtain coming down over one eye. Funduscopic examination reveals a retina floating within the vitreous humor.

C. Pseudotumor cerebri @ No. Pseudotumor cerebri is characterized by papilledema caused by idiopathic intracranial hypertension. Most patients present with severe headaches and vomiting.

*D. Acute glaucoma @ Yes. Acute angle-closure glaucoma is an emergency and due to an increase in intraocular pressure. It presents with rapid onset of severe pain and blurry vision. Nausea and vomiting may be present. A hazy cornea and a dilated and nonreactive pupil are noted.

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E. Optic neuritis @ No. Optic neuritis is an inflammatory disease of the optic nerve. It presents with rapid onset of painful vision loss. There is either periorbital or retro-ocular pain along with loss of visual acuity. Papilledema is present.

4. A 75-year-old woman presents a gradual decrease in her vision. She also notes a glare that she sees with the oncoming car's headlights. Her history is significant for recurrent iritis treated with topical cycloplegics and topical steroids. Which of the following is the most likely diagnosis?

A. Keratoconjunctivitis sicca @ No. Keratoconjunctivitis sicca or "dry eyes" are typically caused by failure to produce the appropriate quality or quantity of tears. The most common causes are hormonal changes with menopause or systemic conditions such as autoimmune diseases.

B. Macular edema @ No. Macular edema is most commonly a complication of diabetic retinopathy.

C. Retinopathy @ No. Retinopathy is most commonly the result of uncontrolled diabetes or uncontrolled hypertension.

D. Blepharitis @ No. In blepharitis, the eyelids become inflamed by oily particles or bacteria that surround the eyelid margin at the base of the eyelashes. It presents with redness and scaling.

*E. Cataracts @ Yes. Cataracts may be congenital, from trauma, a complication of surgery or diabetes, or as a long-term complication of topical or systemic glucocorticoid use.

5. A 25-year-old female presents with a sore right eye. She has a past medical history of recurrent sinus infections. Vitals signs reveal a temperature of 39.5 °C (103.1 °F). Physical examina-

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tion reveals erythema and edema of the eyelids and conjunctivae. The eyeball is protruding, and the patient is unable to move her eye in some of the cardinal fields. Which of the following is the most likely diagnosis?

A. Bacterial conjunctivitis @ No. Bacterial conjunctivitis does not cause eyeball protrusion, limit eye movement, visual disturbances, or extremely severe orbital pain.

*B. Orbital cellulitis @ Yes. Orbital cellulitis is an infection of the orbital tissues and is a complication of paranasal sinusitis, eyelid trauma, or dental/oral infection. It presents with erythema of the eyelids and conjunctivae. The loss of extraocular muscle function is noted with orbital cellulitis.

C. Dacryocystitis @ No. Dacryocystitis is inflammation of the tear duct. It does not cause eyeball protrusion or limit eye movement.

D. Hordeolum @ No. Hordeolum is a localized infection of an eyelash follicle or small gland in the eyelid. Presents as a pustule at the eyelid margin.

E. Blepharitis @ No. Blepharitis is an inflammation of the lid margins, but it does not cause eyeball protrusion or limit eye movement.

6. Which of the following medications can cause a dilated pupil and prevent accommodation?

A. Pilocarpine @ No. Pilocarpine is a nonspecific muscarinic agonist and produces miosis and contraction of the ciliary muscle to focus for near vision.

*B. Scopolamine @ Yes. Scopolamine blocks muscarinic acetylcholine receptors. This causes dilatation of the pupil (mydriasis) and prevents accommodation by paralyzing the ciliary muscle (cycloplegia).

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C. Phenylephrine @ No. Phenylephrine is an alpha-1-adrenergic agonist, it can produce mydriasis by acting on receptors on the radial dilator muscle. But, it has no effect on the ciliary muscles.

D. Physostigmine @ No. Physostigmine is a carbamylating inhibitor of acetylcholinesterase; this increases cholinergic tone to the pupillary constrictor muscle producing miosis and ciliary muscle contraction to focus for near vision.

E. Tetrahydrozoline @ No. Tetrahydrozoline is an alpha-1-adrenergic agonist and causes constriction of the vessels of the eye. It may cause some mydriasis but has no effect on the ciliary muscle.

7. Which of the following conditions may be prevented with the use of vitamins C and E, beta-carotene, and zinc?

*A. Macular degeneration @ Yes. The vision loss noted with macular degeneration can be prevented or slowed using vitamins C, vitamin E, beta-carotene, and zinc.

B. Glaucoma @ No. Glaucoma has not been shown to be affected using dietary supplements.

C. Cataracts @ No. Cataracts have not been shown to be affected using dietary supplements.

D. Keratitis @ No. Keratitis has not been shown to be affected using dietary supplements.

E. Uveitis @ No. Uveitis has not been shown to be affected using dietary supplements.

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8. A 20-year-old female who wears contact lenses develops ulceration of the eye. The ulcer is very painful and shows a ring-shaped infiltrate. Which of the following organisms is most likely involved?

*A. *Acanthamoeba* @ Yes. *Acanthamoeba* infection is associated with contact lens wearing and presents with a very painful ulcer and a ring-shaped infiltrate.

B. Cytomegalovirus @ No. Cytomegalovirus and herpes can cause infections are most often noted in immunocompromised patients.

C. Herpes simplex @ No. Cytomegalovirus and herpes can cause infections are most often noted in immunocompromised patients.

D. *Trichinella* @ No. Trichinella does not infect the eye but can infiltrate the surrounding tissues causing periorbital edema.

E. *Toxoplasma* @ No. Toxoplasmosis of the eye is most often congenital, it produces retinal scarring, not corneal ulceration.

9. A 30-year-old male presents with conjunctival hyperemia, watery discharge, and ocular irritation. The patient states the symptoms started in the right eye and then moved to include the left eye. Physical examination demonstrates hyperemic conjunctivae. No purulent discharge is noted. The preauricular lymph node on one side is enlarged. Which of the following pathogens is most likely the etiology of this patient's symptoms?

*A. Adenovirus @ Yes. This patient has viral conjunctivitis, which is most commonly secondary to adenovirus. Most patients have a recent viral upper respiratory infection and present with erythematous conjunctiva, ocular irritation, and watery discharge. Preauricular lymphadenopathy may be noted.

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B. *Herpes simplex I* @ No. Herpes virus can cause corneal ulceration, hyperkeratosis, or scarring. Fluorescein staining reveals a dendritic corneal lesion.

C. *Herpes simplex II* @ No. Herpes virus can cause corneal ulceration, hyperkeratosis, or scarring. Fluorescein staining reveals a dendritic corneal lesion.

D. *Neisseria gonorrhoeae* @ No. *Neisseria gonorrhoeae* and *Staphylococcus aureus* can cause conjunctivitis that is purulent.

E. *Staphylococcus aureus* @ No. *Neisseria gonorrhoeae* and *Staphylococcus aureus* can cause conjunctivitis that is purulent.

10. Which of the following skin conditions is associated with an increased risk of developing anterior blepharitis?

*A. Seborrheic dermatitis @ Yes. Blepharitis presents with greasy scales on the eyelids and base of the eyelashes. Blepharitis is associated with seborrheic dermatitis.

B. Actinic keratosis @ No. Actinic keratosis is a precursor for squamous cell carcinoma and is not commonly associated with blepharitis.

C. Chalazion @ No. Chalazion is a painless firm lump and can be a complication of blepharitis. D. Psoriasis @ No. Psoriasis affects the extensor surfaces and nails but not the eyes.

E. Eczema @ No. Eczema can cause dryness of the face and cheeks but is not a risk factor for blepharitis.

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11. On physical examination of the eye the following is noted. Generalized retinal arteriolar constriction, the light reflex on the arterioles is broad and dull, and flame-shaped hemorrhages and multiple cotton-wool spots are noted. Which of the following is the most likely etiology?

A. Nonproliferative diabetic retinopathy @ No. Nonproliferative diabetic retinopathy causes hemorrhage, exudates, and microaneurysms on the retina.

B. Proliferative diabetic retinopathy @ No. Proliferative diabetic retinopathy has the changes of nonproliferative diabetic retinopathy with the addition of neovascularization into the vitreous. C. Central retinal artery occlusion @ No. Central retinal artery occlusion presents with sudden, unilateral blindness and produces a pale opaque fundus with a red fovea.

D. Central retinal vein occlusion @ No. Central retinal vein occlusion presents with painless visual loss and produces a congested and edematous fundus with numerous hemorrhages.

*E. Hypertensive retinopathy @ Yes. Hypertensive retinopathy presents with yellow hard exudates, cotton-wool spots, and a congested and edematous optic disk. Arteriolar constriction and thickening of the arteriolar walls develop to protect the eye from high blood pressure.

12. An 8-year-old male presents with blurry vision after being struck in the left eye with a toy ball by his sibling. On physical examination the visual acuity is decreased, intraocular pressure is normal, and there appears to be a dark fluid level in the anterior chamber. Which of the following is the most likely diagnosis?

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A. Hordeolum @ No. Hordeolum is a localized infection of an eyelash follicle or small gland in the eyelid. Presents as a pustule at the eyelid margin.

B. Pterygium @ No. Pterygium is a triangular tissue growth that starts on the cornea near the nose and does not cover the pupil.

C. Chalazion @ No. Chalazion is a painless firm lump on the eyelid.

*D. Hyphema @ Yes. A hyphema is defined as blood in the anterior chamber of the eye. Secondary to intraocular surgery or trauma. Presentation includes a decrease in vision and blood is noted in the anterior chamber.

E. Sarcoidosis @ No. Sarcoidosis is a granulomatous inflammation that can involve the eye.

13. On physical examination, a triangular-shaped thickening of the conjunctiva is noted on the lateral aspect pointing toward the iris. Which of the following is the most likely diagnosis?

A. Dacryocystitis @ No. Dacryocystitis is inflammation of the tear duct.

B. Arcus senilis @ No. Arcus senilis is a deposit of cholesterol in the peripheral cornea.

C. Hordeolum @ No. Hordeolum is a localized infection of an eyelash follicle or small gland in the eyelid. Presents as a pustule at the eyelid margin.

D. Chalazion @ No. Chalazion is a painless firm lump on the eyelid.

*E. Pterygium @ Yes. Pterygium is a triangular tissue growth that starts on the cornea near the nose and does not cover the pupil.

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14. Which of the following would be the physical examination findings in a patient with a lesion at the right optic tract?

A. Blind right eye @ No. Ipsilateral blindness of the eye is noted in lesions of the optic nerve.

B. Central scotoma @ No. Central scotoma is a loss of central visual field possibly due to demyelinating disorders.

C. Bitemporal hemianopsia @ No. Bitemporal hemianopsia is noted in lesions of the optic chiasm.

*D. Left homonymous hemianopsia @ Yes. Lesions of the optic tract lead to contralateral homonymous hemianopsia.

E. Right superior homonymous quadrantanopia @ No. Lesions of the anterior or lateral bundles of the optic radiations lead to contralateral superior homonymous quadrantanopia.

15. Which of the following best describes a pinguecula?

A. Localized ocular inflammation of the episcleral vessels @ No. Episcleritis presents with localized ocular inflammation of the episcleral vessels.

*B. Yellow, triangular nodule in the bulbar conjunctiva @ Yes. Pinguecula is described as a yellow, triangular nodule in the bulbar conjunctiva.

C. Yellow, well-demarcated plaque on upper eyelids @ No. Xanthelasma presents well-demarcated, yellowish plaque on the medial aspects of the upper eyelids.

D. Painful, tender, red, swollen nasolacrimal duct @ No. Dacryocystitis presents as a painful, tender, red, swollen nasolacrimal duct.

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E. Painful, tender, red meibomian gland @ No. Blepharitis presents with a painful, tender, red meibomian gland.

16. Which of the following best describes small, irregular pupils that accommodate but do not react to light?

A. Leukocoria @ No. Leukocoria refers to a white pupil.

B. Adie's pupil @ No. Adie's pupil presents with a dilated pupil that reacts slowly to light by brisk to accommodation.

C. Horner syndrome @ No. Horner syndrome presents with a constricted pupil, ptosis, and enophthalmos.

*D. Argyll Robertson pupils @ Yes. Argyll Robertson pupils present with small, irregular pupils that accommodate but do not react to light.

E. Oculomotor nerve paralysis @ No. Oculomotor nerve paralysis leads to a unilateral large, nonreactive pupil.

17. A 55-year-old male presents with left eye pain, 1 day after gardening. He states that it feels like something is in his eye. Which of the following is consistent with the most likely diagnosis?

A. Increased intraocular pressure @ No. Intraocular pressure would be normal.

B. Conjunctival hemorrhage @ No. Symptoms and signs of corneal abrasion or foreign body include foreign body sensation, tearing, redness, and occasionally discharge.

*C. Fluorescein uptake @ Yes. This is most likely a corneal abrasion from a nonmetal object. Symptoms and signs of corneal abrasion or foreign body include foreign body sensation, tearing, redness, and occasionally discharge. Diagnosis is made by slip lamp

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examination and fluorescein staining. Fluorescein staining would reveal fluorescein uptake at the site of the abrasion.

D. Hazy cornea @ No. Symptoms and signs of corneal abrasion or foreign body include foreign body sensation, tearing, redness, and occasionally discharge.

E. Rust ring @ No. Steel or iron foreign bodies may leave a rust ring.

18. Which of the following presents with a white pupil and absence of the red reflex?

A. Retinopathy of prematurity @ No. Retinopathy of prematurity presents with a line of demarcation and a ridge in mild cases and proliferation of retinal vessels in more severe cases.

B. Macular degeneration @ No. Macular degeneration presents with painless central vision loss and the pupil is normal.

C. Endophthalmitis @ No. Endophthalmitis is an acute panuveitis and presents with loss of red reflex, intense conjunctival hyperemia, and a white or yellow discharge.

*D. Retinoblastoma @ Yes. Retinoblastoma is a cancer of the immature retina and presents with a white pupil, a cat's-eye pupil, strabismus, and absence of the red reflex.

E. Ectopia lentis @ No. Ectopia lentis is subluxation or upward dislocation of the lens and noted in patients with Marfan syndrome.

19. A 16-year-old presents with a 2-day history of increasing redness and swelling of the left eye. The patient states they had a recent upper respiratory tract infection prior to the onset of these symptoms. Physical examination reveals an ill-appearing patient, temperature 102 °F, and visual acuity is 20/50 in the left eye and 20/40 in the right eye. The left eye reveals mild proptosis and

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severe erythema, increased warmth, and swelling of the eye and surrounding tissues. Which of the following is the most appropriate next step in the evaluation of this patient?

A. Eye culture @ No. Eye culture would not be indicated.

*B. Orbital CT scan @ Yes. Orbital cellulitis is an infection of the orbital tissues and is a complication of paranasal sinusitis, eyelid trauma, or dental/oral infection. It presents with erythema of the eyelids and conjunctivae. The loss of extraocular muscle function is noted with orbital cellulitis. Diagnosis is made by an orbital CT scan.

C. Ocular tonometry @ No. Tonometry is used to evaluate intraocular pressure.

D. Electronystagmography @ No. Electronystagmography is used to evaluate nystagmus.

E. Sensory evoked potentials @ No. Sensory evoked potentials measure electrical activity in the brain.

20. A 13-year-old baseball player presents with blurry vision in the right eye after being struck by a baseball in that eye. Physical examination reveals proptosis of the right eye and limitation of movement in all directions. A CT scan is obtained. Which of the following is most likely CT scan finding?

A. Fracture of the medial orbital wall @ No. Orbital fracture would most likely involve the weak floor bone of the orbital, not the medial wall.

B. Prolapse of orbital soft tissue @ No. Prolapse of orbital soft tissue would present with movable mass beneath the conjunctiva.

*C. Hematoma of the orbit @ Yes. Orbital hematoma is due to blunt force trauma to the eye and presents with proptosis of the eye and limited movement of the eye in all directions. CT scan would reveal hematoma involving the orbit.

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D. Orbital emphysema @ No. Orbital emphysema results from the forceful entry of air into the orbital soft tissue.

E. Ethmoid fracture @ No. Ethmoid fracture causes damage to the cribriform plate and leakage of cerebrospinal fluid.

21. A 22-year-old male is struck in the right eye during a bar fight. He complains of severe pain behind the eye as well as double vision. On examination, he has exophthalmos and cannot move his right eye upward. Which of the following is the most appropriate next step in the care of this patient?

A. Apply ice packs and cold compresses @ No. Ice packs and cold compresses are not indicated.

*B. Immediately refer the patient to an ophthalmologist @ Yes. This patient most likely has an orbital blowout fracture. This occurs when blunt trauma forces the orbital contents through one of the orbital walls, typically the floor. Signs and symptoms include entrapment of the extraocular muscles and infraorbital nerve, edema, ecchymosis, diplopia, enophthalmos, hypesthesia of the cheek and upper lip, epistaxis, and subcutaneous emphysema. Patients with diplopia or unacceptable enophthalmos should be referred for surgery.

C. Administer a dose of broad-spectrum antibiotics @ No. Antibiotics are not indicated.

D. Attempt to keep the patient calm and order a skull x-ray @ No. CT scan is the test of choice, not skull x-rays.

E. Place a metal shield over the eye and administer opioids @ No. Neither a metal shield nor opioids are indicated.

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22. Which of the following initial diagnostic studies is indicated in the patient with amaurosis fugax?

A. Schiotz tonometry @ No. Schiotz tonometry is used to measure intraocular pressure in patients with possible glaucoma.

B. Fluorescein staining @ No. Fluorescein staining is used to identify a corneal abrasion.

C. Brain magnetic resonance angiography @ No. Brain MRA will not aid in evaluating the carotids for a possible source of emboli.

*D. Carotid ultrasound @ Yes. Amaurosis fugax is a painless temporary loss of vision. Possible etiology includes temporary reduction of blood flow in the retinal, ophthalmic, or ciliary arteries. Emboli from the carotid artery are the source of this reduced blood flow. A carotid ultrasound would be indicated.

E. Echocardiogram @ No. Echocardiogram will not aid in evaluating the carotids for a possible source of emboli.

23. A 20-year-old female presents with severely itchy, red eyes. On physical examination, the eyes are injected, a clear discharge is present, and edema is noted under the lower eyelid. Which of the following is the most likely diagnosis?

A. Blepharitis @ No. Blepharitis presents with scaly lesions on the eyelids and lashes.

B. Hordeolum @ No. Hordeolum is a localized infection of an eyelash follicle or small gland in the eyelid.

C. Viral conjunctivitis @ No. Viral conjunctivitis is typically without itching.

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*D. Allergic conjunctivitis @ Yes. Allergic conjunctivitis presents with bilateral red eyes, severe itching, edema, and a clear or mucoid discharge. Presents as a pustule at the eyelid margin.

E. Keratoconjunctivitis sicca @ No. Keratoconjunctivitis sicca presents with dry eyes.

24. A healthy 71-year-old male describes visual loss in his right eye. He states that flashes of light and a curtain-like loss of lateral vision began when he awoke 8 hours ago. The symptoms have persisted. Which of the following is the most likely diagnosis?

A. Ocular migraine @ No. An ocular migraine is associated with transient monocular visual loss in one eye lasting <1 hour. Visual loss may occur with no headache and at other times throbbing headache on the same side of the head as the visual loss.

B. Amaurosis fugax @ No. Amaurosis fugax is a painless temporary loss of vision. Due to emboli causing temporary reduction of blood flow in the retinal, ophthalmic, or ciliary arteries, patients typically have a history of carotid disease.

*C. Retinal detachment @ Yes. Retinal detachment presents with a sudden increase or change in floaters, curtain or veil across the visual field, sudden, unexplained loss of vision, and vitreous hemorrhage that obscures the retina.

D. Occipital lobe seizure @ No. Occipital lobe seizures present with “visual hallucinations” described as flashing small circular patterns or zigzags. Vomiting or temporary blindness may occur, and visual seizures may be followed by a headache.

E. Retinal vein occlusion @ No. Central retinal vein occlusion presents with the painless visual loss with no history of flashes of light.

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25. A 75-year-old female presents with pain in the right eye. On physical examination, excessive tearing is noted, and the lower eyelid is turned inward. Which of the following is the most likely diagnosis?

*A. Entropion @ Yes. Entropion is the inward turning or inversion of an eyelid. Eyelashes rub against the eyeball. Symptoms include foreign body sensation, tearing, and red eye

B. Chalazion @ No. Chalazion is a painless firm lump on the eyelid.

C. Blepharitis @ No. Blepharitis presents with redness and scaling of the eyelids and lashes.

D. Dacryocystitis @ No. Dacryocystitis is inflammation of the tear duct.

E. Basal cell carcinoma @ No. Basal cell carcinoma presents with a superficial papule or nodule on the eyelid.

26. A patient presents with right eye pain, photophobia, and decreased vision. On physical examination, a branching ulcer is noted on fluorescein staining of the eye. Which of the following is the most likely diagnosis?

A. Pinguecula @ No. Pinguecula does not present with branching ulcers on fluorescein staining.

*B. Herpes keratitis @ Yes. Herpes simplex keratitis is a corneal infection with herpes simplex virus. Signs and symptoms include foreign body sensation, lacrimation, photophobia, and conjunctival hyperemia. Diagnosis is based on the characteristic dendritic corneal ulcer.

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C. Viral conjunctivitis @ No. Viral conjunctivitis does not present with branching ulcers on fluorescein staining.

D. Angle-closure glaucoma @ No. Angle-closure glaucoma does not present with branching ulcers on fluorescein staining.

E. Acanthamoeba infection @ No. Acanthamoeba infection does not present with branching ulcers on fluorescein staining.

27. Which of the following is the leading cause of blindness in the United States in people younger than 65 years of age?

A. Hypertension @ No. Hypertension is not a leading cause of blindness in the United States.

*B. Diabetes mellitus @ Yes. Diabetic retinopathy is the leading cause of blindness in American adults under the age of 65 years.

C. Chlamydia infection @ No. Chlamydia infection is not a leading cause of blindness in the United States.

D. Macular degeneration @ No. Macular degeneration is the most common cause of blindness in American adults over the age of 65 years.

E. Retinal artery occlusion @ No. Retinal artery occlusion is not a leading cause of blindness in the United States.

28. Which of the following is a possible complication of long-term use of topical ophthalmic anesthetics in the eye?

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A. Glaucoma @ No. Glaucoma is not a likely complication of long-term use of topical ophthalmic anesthetics; systemic side effects are rare.

*B. Corneal ulceration @ Yes. Topical ophthalmic anesthetics are used in the initial assessment of minor eye trauma, the removal of superficial foreign bodies, and the measurement of intraocular pressure using applanation tonometry and in ocular surgery. The most common toxicities are to the ocular surface, long-term use can cause deep corneal infiltrates, ulceration, and even perforation.

C. Cataract formation @ No. Cataract formation is not a likely complication of long-term use of topical ophthalmic anesthetics; systemic side effects are rare.

D. Retinal detachment @ No. Retinal detachment is not a likely complication of long-term use of topical ophthalmic anesthetics; systemic side effects are rare.

E. Macular degeneration @ No. Macular degeneration is not a likely complication of long-term use of topical ophthalmic anesthetics; systemic side effects are rare.

29. Alignment of the visual axis so that an infant has consistent, synchronized eye movements typically occur by what age?

A. 2 to 3 months of age @ No. While alignment of the visual axis occurs in the first 3 months of life, consistent, synchronized eye movement is not typically observed this early.

*B. 5 to 6 months of age @ Yes. Alignment of the visual axis occurs in the first 3 months of life. All infants should have consistent, synchronized eye movement by 5 to 6 months of age.

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C. 8 to 9 months of age @ No. Alignment of the visual axis occurs in the first 3 months of life and consistent, synchronized eye movement does not typically occur as late as 8 to 9 months of age.

D. 11 to 12 months of age @ No. Alignment of the visual axis occurs in the first 3 months of life and consistent, synchronized eye movement does not typically occur as late as 11 to 12 months of age.

E. 14 to 15 months of age @ No. Alignment of the visual axis occurs in the first 3 months of life and consistent, synchronized eye movement does not typically occur as late as 14 to 15 months of age.

30. A 19-year-old presents with mild discomfort of the upper lateral left eyelid for the past 3 days. Physical examination reveals a red, swollen lid margin. Which of the following is the initial management of this patient?

A. Oral antibiotic @ No. Oral antibiotics may be needed as a second-line treatment for hordeolum.

*B. Hot compress @ Yes. A hordeolum is an acute, localized swelling of the eyelid that may be external or internal and usually is a pyogenic infection or abscess. Hot compresses are the first-line treatment to hasten the resolution of the hordeolum.

C. Anesthetic eye drop @ No. Anesthetic eye drops are not initial management for hordeolum.

D. Topical antihistamine @ No. Topical antihistamines are not initial management for hordeolum.

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E. Incision and drainage @ No. Incision and drainage may be needed as a second-line treatment for hordeolum.

31. Which of the following clinical interventions is recommended for the preservation of vision in a person with proliferative diabetic retinopathy?

A. Intraocular dexamethasone @ No. Intraocular dexamethasone is not recommended for the preservation of vision in a person with proliferative diabetic retinopathy.

B. Lens replacement @ No. Lens replacement is not recommended for the preservation of vision in a person with proliferative diabetic retinopathy.

*C. Laser photocoagulation @ Yes. Blood glucose control is key to the management of diabetic retinopathy. Proliferative diabetic retinopathy that presents with vitreous hemorrhage, extensive neovascularization, or anterior segment neovascularization/neovascular glaucoma should be treated with panretinal laser photocoagulation. Recent studies have also supported the use of intravitreal anti-VEGF drugs in the treatment of proliferative diabetic retinopathy.

D. Vitrectomy @ No. Vitrectomy is not recommended for the preservation of vision in a person with proliferative diabetic retinopathy.

E. Iridectomy @ No. Iridectomy is not recommended for the preservation of vision in a person with proliferative diabetic retinopathy.

32. A 12-year-old male presents with right eye pain after getting the contents of some fireworks (magnesium hydroxide) in his eye. Which of the following is the most appropriate initial treatment?

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A. Obtain pH of the eye discharge @ No. Obtaining the pH of the eye discharge is not the most appropriate initial treatment.

B. Apply Bacitracin ointment and patch the eye @ No. Applying Bacitracin ointment and eye patch is not the most appropriate initial treatment.

C. Remove the firework remnants with a moist cotton swab @ No. Removal of the firework remnants with a moist cotton swab is not the most appropriate initial treatment.

*D. Irrigate the eye with 1 to 2 L of NS @ Yes. Chemical burns of the cornea and conjunctiva are serious, with alkali burns more serious than acid burns. Chemical burns should be irrigated copiously as soon as possible. The eye may be anesthetized, but irrigation should not be delayed and should last for at least 30 minutes with 1 to 2 L of solution. The patient should then be evaluated by an ophthalmologist.

E. Protect the eye with a metal shield and refer to ophthalmologist @ No. Although the patient should be evaluated by an ophthalmologist, it is not appropriate to delay initial treatment.

33. A patient presents with a metal foreign body in his right eye. On physical examination, a rust ring is noted. Which of the following is the intervention of choice?

A. Referral to an ophthalmologist in 24 hours @ No. Steel or iron foreign bodies that remain on the cornea for more than a few hours may leave a rust ring on the cornea. This rust ring requires removal under slit-lamp magnification by scraping or using a low-speed rotary burr; removal is usually done by an ophthalmologist.

B. Remove object with 25-gauge needle @ No. Steel or iron foreign bodies that remain on the cornea for more than a few hours may leave a rust ring on the cornea. This rust

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ring requires removal under slit-lamp magnification by scraping or using a low-speed rotary burr; removal is usually done by an ophthalmologist.

*C. Ophthalmic burr to remove rust ring @ Yes. Steel or iron foreign bodies that remain on the cornea for more than a few hours may leave a rust ring on the cornea. This rust ring requires removal under slit-lamp magnification by scraping or using a low-speed rotary burr; removal is usually done by an ophthalmologist.

D. MRI to identify other foreign bodies @ No. Steel or iron foreign bodies that remain on the cornea for more than a few hours may leave a rust ring on the cornea. This rust ring requires removal under slit-lamp magnification by scraping or using a low-speed rotary burr; removal is usually done by an ophthalmologist.

E. Irrigation with sterile water @ No. Steel or iron foreign bodies that remain on the cornea for more than a few hours may leave a rust ring on the cornea. This rust ring requires removal under slit-lamp magnification by scraping or using a low-speed rotary burr; removal is usually done by an ophthalmologist.

34. A 20-year-old sexually active female presents with a 3-day history of copious, painless bilateral eye exudates. On physical examination, visual acuity is normal, generalized conjunctival inflammation is noted with cornea sparing. Gram stain of the exudate reveals gram-negative diplococci. In addition to azithromycin, which of the following is the treatment of choice for this patient?

A. Penicillin @ No. Penicillin is no longer recommended because resistance is now widespread.

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*B. Ceftriaxone @ Yes. *Neisseria gonorrhoeae*, a gram-negative diplococcus, causes gonococcal conjunctivitis, which results from sexual contact with a person who has a genital infection. Symptoms develop 12 to 48 hours after exposure and present with severe eyelid edema, chemosis, and a profuse purulent exudate. Adult gonococcal conjunctivitis requires dual therapy with a single dose of ceftriaxone plus azithromycin.

C. Ciprofloxacin @ No. Fluoroquinolones are no longer recommended because resistance is now widespread.

D. Doxycycline @ No. Fluoroquinolones are no longer recommended because resistance is now widespread.

E. Bacitracin @ No. Bacitracin or gentamicin ophthalmic ointment instilled into the affected eye every 2 hours may be used in addition to systemic treatment.

35. Which of the following adverse effects of the eye are noted with long-term use of systemic corticosteroids?

A. Cortical blindness @ No. Cortical blindness is not noted with long-term use of systemic corticosteroids.

B. Color blindness @ No. Color blindness is not noted with long-term use of systemic corticosteroids.

C. Optic atrophy @ No. Optic atrophy is not noted with long-term use of systemic corticosteroids.

D. Papilledema @ No. Papilledema is not noted with long-term use of systemic corticosteroids.

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*E. Glaucoma @ Yes. Long-term use of systemic corticosteroids can increase intraocular pressure leading to the development of glaucoma. Cataract development can also occur as well as corneal perforation and worsening ocular herpes simplex infection.

36. Which of the following is used in the treatment of angle-closure glaucoma?

A. Furosemide @ No. Furosemide is not used in the treatment of angle-closure glaucoma.

B. Triamterene @ No. Triamterene is not used in the treatment of angle-closure glaucoma.

C. Scopolamine @ No. Scopolamine is not used in the treatment of angle-closure glaucoma.

*D. Acetazolamide @ Yes. Angle-closure glaucoma is due to obstruction of the anterior chamber angle, resulting in severe ocular pain, decreased vision, headache, nausea, and vomiting. Vision loss cannot be recovered. Initial therapy is typically drug therapy, followed by laser peripheral iridotomy. Drug therapy consists of multiple drugs. A suggested regimen is timolol, pilocarpine, brimonidine, acetazolamide, and an osmotic agent.

E. Ethacrynic acid @ No. Ethacrynic acid is not used in the treatment of angle-closure glaucoma.

37. A patient with systemic lupus erythematosus has been on hydroxychloroquine for 6 years. Which of the following is the recommended follow-up for this patient?

A. Annual audiogram @ No. An annual audiogram is not recommended follow-up for this patient.

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B. Monitor for graft versus host disease @ No. Monitoring for graft versus host disease is not recommended follow-up for this patient.

C. Monthly complete blood count @ No. Monthly complete blood count is not recommended follow-up for this patient.

D. Yearly blood urea nitrogen (BUN) and creatinine tests @ No. Yearly BUN and creatinine testing are not recommended follow-up for this patient.

*E. Yearly ophthalmology examination @ Yes. Hydroxychloroquine is used to reduce the frequency of SLE flares and decreases mortality. A baseline ophthalmologic examination should be done before starting therapy to exclude maculopathy because chronic drug use increases the risk of toxic maculopathy. Yearly ophthalmologic screening should be done after the drug has been used for 5 years to assess for retinal toxicity.

38. Which of the following is the treatment of choice for CMV retinitis in an HIV-positive patient?

*A. Ganciclovir and foscarnet @ Yes. CMV retinitis is most common in AIDS patients. Treatment consists of ganciclovir or valganciclovir, foscarnet with or without ganciclovir, or cidofovir. The combination of ganciclovir and foscarnet increases efficacy.

B. Acyclovir and cidofovir @ No. CMV is resistant to acyclovir. Cidofovir use is limited secondary to renal failure.

C. Ganciclovir @ No. Ganciclovir is not the treatment of choice for CMV retinitis in an HIV-positive patient.

D. Acyclovir @ No. CMV is resistant to acyclovir.

E. Cidofovir @ No. Cidofovir use is limited secondary to renal failure.

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39. Which of the following is the treatment of choice of optic neuritis?

A. Vitamin A @ No. Vitamin A is not the treatment of choice for optic neuritis.

B. Antibiotics @ No. Antibiotics are not the treatment of choice for optic neuritis.

*C. Corticosteroids @ Yes. Optic neuritis is inflammation of the optic nerve. Treatment is directed at the underlying cause. Corticosteroids are first-line therapy.

D. Anticoagulants @ No. Anticoagulants are not the treatment of choice for optic neuritis.

E. Blood glucose control @ No. Blood glucose control is not the treatment of choice for optic neuritis.

40. Which of the following is diagnosed by use of the cover/uncover test?

A. Color blindness @ No. Ishihara 38 plates are used to identify color blindness.

B. Adie's pupil @ No. Pupil reaction to light is used to identify Adie's pupil.

*C. Strabismus @ Yes. The cover/uncover test is used to diagnose strabismus.

D. Glaucoma @ No. Tonometry is used to measure intraocular pressure to evaluate glaucoma.

E. Myopia @ No. The Snellen chart is used to identify myopia.

41. A 12-year-old male presents with a 2-week history of bilateral watery eye discharge, sinus congestion, and sneezing. Physical examination reveals a temperature of 38 °C. The eyes reveal mild bilateral conjunctival injection, clear watery discharge, and no matting. Pupils are equal, round, and reactive to light and accommodation. The extraocular movements are intact. The funduscopic examination shows normal disc and vessels. The TMs are normal, and the canals are

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clear. The nasal mucosa is boggy, with clear rhinorrhea. Which of the following is the most helpful pharmacologic agent?

A. Timolol gel @ No. Timolol gel is used to treat glaucoma.

B. Artificial tears @ No. Artificial tears are used for dry eyes.

C. Tobramycin drops @ No. Tobramycin drops are used to treat bacterial infections.

*D. Olopatadine drops @ Yes. This patient has allergic conjunctivitis. Treatment consists of avoiding known allergens and the use of cold compresses and tear supplements to reduce symptoms of allergic conjunctivitis. Topical over-the-counter antihistamines are useful for mild cases. Other options include topical prescription antihistamines (such as olopatadine), mast cell stabilizers, or nonsteroidal anti-inflammatory drugs. Topical corticosteroids can be useful in recalcitrant cases or when quick relief is important.

E. Erythromycin ointment @ No. Erythromycin ointments are used to treat bacterial infections.

42. A 30-year-old presents with swelling, redness, and edema around the lacrimal sac. Pressure over the lacrimal sac causes mucoid material to drain from the puncta. Which of the following is the most likely diagnosis?

*A. Dacryocystitis @ Yes. Dacryocystitis, infection of the lacrimal sac, presents with tearing and discharge. Pain, swelling, and tenderness are noted in the tear sac area.

B. Hordeolum @ No. Hordeolum is an infection of the Meibomian glands of the eyelid. Symptoms include pain, redness, and swelling.

C. Blepharitis @ No. Blepharitis is inflammation of the eyelid. Symptoms include irritation, burning, and itching of the eyelid.

D. Chalazion @ No. Chalazion is a painless firm lump on the eyelid.

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E. Entropion @ No. Entropion is the inward turning of the eyelid. There is no swelling or pain.

43. Which of the following is the most consistent ophthalmoscopic finding in a patient with macular degeneration?

A. Floaters @ No. Floaters are linked to retinal detachment.

B. A-V nicking @ No. A-V nicking is noted in hypertensive retinopathy.

C. Papilledema @ No. Papilledema is noted in conditions with increased intracranial pressure.

*D. Drusen bodies @ Yes. Drusen bodies, discrete, yellow-white deposits on the retina, are noted in macular degeneration.

E. Cotton-wool spots @ No. Cotton-wool spots are noted in diabetic retinopathy.

44. A 16-year-old male involved in a fight sustains a laceration to his right upper eyelid. He is unable to open his eye, and a possible laceration of the globe is suspected. Which of the following is the next step in the care of this patient?

A. Use a slit lamp to determine the extent of the injury @ No. Using a slit lamp to determine the extent of the injury is not the next step in the care of this patient.

B. Use fluorescein strips to determine the extent of injury @ No. Using fluorescein strips to determine the extent of the injury is not the next step in the care of this patient.

*C. Apply a metal eye shield and refer to an ophthalmologist @ Yes. The eye with eyelid laceration and possible globe laceration or rupture should be protected with a metal eye shield and be seen by ophthalmology as soon as possible. Avoid unnecessary actions that would delay treatment or cause further injury.

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D. Apply antibiotic ointment to the lid and recheck in 24 hours @ No. Applying antibiotic ointment to the lid and rechecking in 24 hours is not the next step in the care of this patient.

E. Place patient on bed rest and elevate the head of the bed to 30 to 40 degrees @ No. Placing the patient on bed rest and elevating the head of the above bed is not the next step in the care of this patient.

45. Which of the following findings would indicate an optic nerve lesion?

*A. Unilateral dilation with afferent pupil defect @ Yes. Pupil size, controlled centrally by the Edinger–Westphal nucleus in the midbrain, is primarily based on the afferent light stimulus transmitted via the optic nerve.

B. Excessive conjunctival edema @ No. Excessive edema of the conjunctiva is a feature of chemosis.

C. Inability to gaze laterally @ No. Inability to gaze laterally would be due to paralysis of the lateral rectus muscle controlled by cranial nerve VI.

D. Argyll-Robertson pupil @ No. Argyll Robertson pupils show asymmetry, impaired light responses with preserved response to accommodation.

E. Physiologic anisocoria @ No. Physiologic anisocoria is a normal finding and is asymmetry between the pupils.

46. A 60-year-old patient presents with right eye pain and decreased vision. The patient is also noting photophobia. On physical examination, a ciliary flush is noted. Which of the following is the most likely diagnosis in this patient?

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A. Acute angle-closure glaucoma @ No. Acute angle-closure glaucoma is characterized by pain and blurred vision. On examination, the eye is red, the cornea is steamy, and the pupil is moderately dilated and nonreactive to light.

B. Central retinal vein occlusion @ No. Central retinal vein occlusion is characterized by sudden monocular visual loss on examination there would be disc swelling, venous engorgement, cotton-wool spots, and diffuse retinal hemorrhages.

C. Serous retinal detachment @ No. Serous retinal detachment is characterized by a dome-shaped retina and subretinal fluid that shifts position with posture changes. Serous retinal detachment results from subretinal fluid accumulation that can occur in exudative age-related macular degeneration.

*D. Acute anterior uveitis @ Yes. Acute anterior uveitis presents with ocular pain, redness, photophobia, and decreased vision. Physical examination findings include hyperemia of the conjunctiva adjacent to the cornea, a ciliary flush or limbal injection.

E. Posterior scleritis @ No. Posterior scleritis presents with ocular pain and photophobia. Red eye is uncommon.

47. What is the recommended frequency of retinal screening in a patient with type 2 diabetes mellitus without evidence of retinopathy?

A. Every 3-months examination @ No. Every 3 months is not the recommended frequency of retinal screening in a patient with type 2 diabetes mellitus without evidence of retinopathy.

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B. Every 6-months examination @ No. Every 6 months is not the recommended frequency of retinal screening in a patient with type 2 diabetes mellitus without evidence of retinopathy.

*C. Every 12-months examination @ Yes. All patients with diabetes should have an annual dilated ophthalmologic examination. Pregnant patients with diabetes should be examined every trimester. The frequency should increase once retinopathy is identified.

D. Every 24-months examination @ No. Every 24 months is not the recommended frequency of retinal screening in a patient with type 2 diabetes mellitus without evidence of retinopathy.

E. Examination if symptoms develop @ No. Retinal screening should be performed with regular frequency in a patient with type 2 diabetes mellitus without evidence of retinopathy.

48. A 23-year-old female presents with a 3-day history of itching and redness of both eyes. She states that her eyes were stuck shut upon awakening. The examination is significant for moderate lid-edema with crusting about the eyelashes. There was no change in visual acuity or significant erythema of the conjunctiva. Which of the following is the definitive treatment for this patient?

*A. Erythromycin ophthalmic ointment @ Yes. Blepharitis is typically caused by *Staphylococcus aureus* and involves the eyelid margins and lash follicles. Erythromycin ointment is more effective than antibiotic eyedrops in treating the lid margins.

B. Warm compresses @ No. Warm compresses are indicated for relief of acute hordeolum.

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C. Olopatadine drops @ No. Olopatadine drops are used in the treatment of allergic conjunctivitis.

D. Brimonidine @ No. Brimonidine is used in the treatment of acute angle-closure glaucoma.

E. Lid scrubs @ No. Lid scrubs can be utilized for symptomatic relief of blepharitis but will not treat the underlying infection.

49. A patient suffers an injury to his right orbit. There is entrapment of the inferior rectus muscle in the orbit floor. Which of the following eye movements will result in double vision?

*A. Looking upward @ Yes. Orbital floor fracture can lead to entrapment of the inferior rectus muscle. With an upward gaze, the patient will note double vision.

B. Looking downward @ No. This eye movement would not lead to double vision.

C. Gazing to the left @ No. This eye movement would not lead to double vision.

D. Converging the eyes to view an object that is near @ No. This eye movement would not lead to double vision.

E. Diverging the eyes to view an object that is distant @ No. This eye movement would not lead to double vision.

50. Which of the following cranial nerves control the levator palpebrae superioris?

A. Facial @ No. Cranial nerve VII (facial) controls the muscles of facial expression.

B. Trochlear @ No. Cranial nerve IV (trochlear) controls the superior oblique muscle.

C. Trigeminal @ No. Cranial nerve V (trigeminal) controls the muscles of mastication and sensory to the scalp, nose, cheeks, and skin over the mandible.

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D. Abducens @ No. Cranial nerve VI (abducens) controls the lateral rectus muscle.

*E. Oculomotor @ Yes. Cranial nerve III (oculomotor) controls four extrinsic eye muscles and levator palpebrae superioris and pupillary sphincter.

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CHAPTER 3: EAR, NOSE, AND THROAT DISORDERS

1. Which of the following is the most common cause of sensorineural hearing loss in the adult population?

A. Noise-induced hearing loss @ No. Noise-induced hearing loss is a hearing loss that is caused by recurrent exposure to loud noises.

B. Cerumen impaction @ No. Cerumen impaction causes conductive hearing loss.

C. Otosclerosis @ No. Otosclerosis causes conductive hearing loss.

D. Labyrinthitis @ No. Labyrinthitis is a pattern of tinnitus, progressive sensorineural hearing loss, and a fullness in the ear.

*E. Presbycusis @ Yes. Presbycusis is age-related hearing loss and is the most common cause of sensorineural hearing loss in the adult population.

2. A 12-year-old male presents with fever and sore throat. A rapid testing confirms streptococcal pharyngitis. Patient has a history of noncompliance with medications in the past. He has no known allergies. Which of the following is the treatment of choice?

*A. Single dose of benzathine penicillin G intramuscularly @ Yes. The treatment of choice for streptococcal pharyngitis is oral penicillin V for 10 days. If compliance is a concern benzathine penicillin G can be given as a single dose intramuscularly.

B. Single dose of levofloxacin intramuscularly @ No. Single dose of levofloxacin intramuscularly is not the treatment of choice.

C. Single dose of ceftriaxone intramuscularly @ No. Single dose of ceftriaxone intramuscularly is not the treatment of choice.

D. Two doses of erythromycin orally @ No. Two doses of erythromycin orally are not the treatment of choice.

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E. Two doses of clindamycin orally @ No. Two doses of clindamycin orally are not the treatment of choice.

3. A 29-year-old female presents with constant nasal stuffiness and rhinorrhea. She has a cat in her apartment. Blood testing demonstrates elevations in eosinophils and IgE levels. Skin testing demonstrates marked sensitivity to cat dandruff. Which of the following is the preferred treatment for this patient's allergy?

A. Fluticasone propionate nasal @ No. Fluticasone nasal spray is an intranasal glucocorticoid that can be used to control allergy symptoms.

B. IM diphenhydramine HCL @ No. IM diphenhydramine HCL is used in potential anaphylactic reactions.

C. Allergen immunotherapy @ No. Allergen immunotherapy may be helpful in desensitizing a patient to antigens.

*D. Allergen avoidance @ Yes. The most effective treatment for allergies is avoidance of the allergen.

E. Oral fexofenadine @ No. Fexofenadine is a H1 receptor antagonist used for the relief of allergic rhinitis.

4. A 60-year-old male, with acute leukemia, presents with facial pain. X-rays reveal a severe sinusitis. Cultures are obtained in surgery during the evacuation of sinus contents. Stains of the sinus content reveal fungi with broad, nonseptate, irregularly shaped hyphae. Which of the following is the most likely organism?

A. *Blastomyces* @ No. *Blastomyces* involves the lung and occurs as a yeast in the body.

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B. *Aspergillus* @ No. *Aspergillus* can also cause sinusitis, but it has narrow hyphae.

C. *Sporothrix* @ No. *Sporothrix* usually infects the skin and subcutaneous tissues and occurs as a yeast.

*D. *Rhizopus* @ Yes. The patient has rhinocerebral mucormycosis, which can be caused by fungal species including *Rhizopus* and *Rhizomucor*. Predisposing conditions include immunosuppression and uncontrolled diabetes mellitus. The organism has broad, nonseptate, irregularly shaped hyphae.

E. *Candida* @ No. *Candida* can infect sinuses, but it has narrow hyphae and yeast forms.

5. A 12-year-old male presents with severe throat pain. Physical examination reveals small vesicles on the soft palate and uvula that form shallow white ulcers. Which of the following is the most likely diagnosis?

A. Influenza @ No. Influenza can cause upper respiratory symptoms but does not cause associated ulcers on the soft palate and uvula.

B. Rhinovirus @ No. Rhinovirus can cause upper respiratory symptoms but does not cause associated ulcers on the soft palate and uvula.

C. Coronavirus @ No. Coronavirus can cause upper respiratory symptoms but does not cause associated ulcers on the soft palate and uvula.

D. Epstein-Barr virus @ No. Epstein-Barr virus can cause upper respiratory symptoms but does not cause associated ulcers on the soft palate and uvula.

*E. Coxsackie A virus @ Yes. This patient has hand, foot, and mouth disease, caused by coxsackie A16 virus. It presents with painful ulcers on the soft palate and uvula. There may be accompanying target-like lesions on the palms and soles.

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6. A 65-year-old female with diabetes mellitus present with severe ear pain. Physical examination demonstrates foul-smelling purulent otorrhea and a red mass lesion of the external ear canal. Which of the following is the most likely causative organism?

A. *Escherichia coli* @ No. *Escherichia coli* can cause both external otitis and acute otitis media but does not cause malignant external otitis.

B. *Haemophilus influenzae* @ No. *Haemophilus influenzae* causes acute otitis media.

*C. *Pseudomonas aeruginosa* @ Yes. Malignant external otitis most often affects elderly patients with diabetes. The most common organism is *Pseudomonas aeruginosa*.

D. *Staphylococcus aureus* @ No. *Staphylococcus aureus* can cause external otitis, but it does not cause the malignant form.

E. *Proteus vulgaris* @ No. *Proteus vulgaris* can cause external otitis, but it does not cause the malignant form.

7. A 40-year-old male presents with episodes of ringing in his ears, vertigo, and hearing loss. The vertigo episodes last just a few hours. He denies any medications. He reports no history of trauma to the ear or recent illnesses. Physical examination, vitals are normal, external ear canal is clear, and tympanic membrane (TM) is normal. There is not vertigo currently. Which of the following is the most likely diagnosis?

A. Benign positional vertigo @ No. Benign paroxysmal positional vertigo presents with paroxysmal vertigo and nystagmus, brought on by certain changes in position. Hearing loss is not present.

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B. Vestibular neuronitis @ No. Vestibular neuronitis is characterized by the sudden onset of vertigo, nausea, and vomiting. There is no change in hearing.

*C. Meniere disease @ Yes. Meniere disease is characterized by tinnitus, episodic vertigo, and progressive hearing loss. It is related to a degeneration of the vestibular and cochlear hair cells, or by pressure and volume changes of the endolymph in the middle ear.

D. Viral labyrinthitis @ No. Viral labyrinthitis presents with vertigo, nystagmus, tinnitus, and hearing loss. Fever is common.

8. A 60-year-old male with a long history of alcohol abuse and a 50-pack-year history of smoking presents with hoarseness and dysphagia. Physical examination reveals cervical lymphadenopathy. Laryngoscopy reveals an ulcerated nodule on the laryngeal surface. Which of the following is the most likely diagnosis?

A. Thyroglossal cyst @ No. Thyroglossal cysts are midline irregular neck masses that develop from tissue left over after the formation of the thyroid gland.

B. Vocal cord nodule @ No. Vocal cord nodules are callous-like growth at the midpoint of the vocal folds and develop due to repetitive overuse.

C. Anaplastic carcinoma @ No. Anaplastic carcinomas and transitional cell carcinomas usually occur in the nasopharynx.

*D. Squamous cell carcinoma @ Yes. Laryngeal carcinoma is an uncommon malignant tumor that is typically a squamous cell carcinoma. Most present with hoarseness, difficulty swallowing, pain, hemoptysis, and eventually respiratory compromise due to obstruction. Risk factors include smoking, alcohol abuse, and chronic irritation.

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9. A 50-year-old female presents with tinnitus and progressive hearing loss in her right ear. She states that she has an occasional headache and dizziness. She is on no medications. Physical examination reveals the Weber test lateralizes to the left ear. Air conduction is greater than bone conduction bilaterally. A hearing test is consistent with sensorineural hearing loss on the affected side. Neurologic examination is normal, except for numbness on the right side of the face. Which of the following is the next step in the evaluation of this patient?

A. Auditory brainstem reflexes @ No. Auditory brainstem reflexes are used in the evaluation of sensorineural loss, but it does not identify the location of the tumor.

*B. MRI scan of the head @ Yes. Acoustic neuroma is a benign, slow-growing tumor that classically presents with unilateral sensorineural hearing loss, intermittent dizziness, and facial numbness. Headache may occur in large tumors. Gadolinium-enhanced MRI scan is the diagnostic image of choice.

C. CT scan of the head @ No. CT scan of the head is less precise for detecting small tumors like an acoustic neuroma.

D. Cold caloric testing @ No. Caloric testing is used to assess brain stem response.

E. Nasal endoscopy @ No. Nasal endoscopy is used in the assessment of acute and chronic sinusitis.

10. A 5-year-old male presents with fever and earache. He was recently treated with amoxicillin for acute otitis media with no real improvement. On physical examination, the right tympanic membrane appears injected. Which of the following is the treatment of choice?

A. Bacitracin @ No. Bacitracin is a topical agent used to fight infection with gram-positive organisms, and not used in acute otitis media.

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B. Erythromycin @ No. Erythromycin is a macrolide antibiotic that is effective against *S. pneumoniae* but is not active against *H. influenzae*.

C. Amphotericin B @ No. Amphotericin B is an antifungal agent and not effective against bacteria.

*D. Cefuroxime axetil @ Yes. The drug of choice for otitis media in children is amoxicillin. In refractory cases, often caused by bacterial resistance, the patient should be switched to a different drug class. A second-generation cephalosporin, cefuroxime axetil, should be used as it covers *Streptococcus pneumoniae* and *Haemophilus influenzae*. It is used in cases of amoxicillin-resistant otitis media. Other options include amoxicillin/clavulanate, cefdinir, or parenteral ceftriaxone

E. Trimethoprim-sulfamethoxazole @ No. Trimethoprim-sulfamethoxazole is a sulfonamide and is not first-line therapy for acute otitis media.

11. A patient, with a history of chronic ear infections, presents with hearing loss and otorrhea. The patient has just completed a course of antibiotics with no improvement in symptoms. Physical examination reveals a conductive hearing loss. External auditory canal shows the presence of granulation material. TM is normal. Which of the following is the most likely diagnosis?

A. Impacted cerumen @ No. Impacted cerumen can cause a conductive hearing loss. Cerumen is easy to diagnose as it is readily seen on otoscopic examination.

*B. Cholesteatoma @ Yes. Cholesteatoma is a collection of squamous epithelium and keratin debris that usually involves the middle ear and mastoid. It occurs following recurrent infection or trauma. On examination, the ear canal appears clogged with mucopurulent granulation tissue.

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C. Otitis externa @ No. Otitis externa presents with otorrhea but no involvement of the middle ear. Will have tenderness on palpation of the pinna.

D. Otosclerosis @ No. Otosclerosis is a condition with hearing loss due to limited mobility of the middle ear bones. It is not a complication of a middle ear infection.

E. Presbycusis @ No. Presbycusis is hearing loss that occurs as a result of aging. It tends to be bilateral and causes sensorineural hearing loss.

12. A patient presents with hay fever. Because of their work, they request a medication that does not cause drowsiness. Which of the following drugs would be most suitable for this patient?

A. Chlorpheniramine @ No. Chlorpheniramine causes some degree of sedation and is not recommended for a patient trying to limit drowsiness.

B. Diphenhydramine @ No. Diphenhydramine causes some degree of sedation and is not recommended for a patient trying to limit drowsiness.

*C. Fexofenadine @ Yes. Fexofenadine, selectively antagonizes peripheral histamine H1 receptors, and does not cross the blood–brain barrier and does not cause sedation but will relieve allergic symptoms.

D. Clemastine @ No. Clemastine causes some degree of sedation and is not recommended for a patient trying to limit drowsiness.

E. Meclizine @ No. Meclizine causes some degree of sedation and is not recommended for a patient trying to limit drowsiness.

13. Which of the following oral lesions is most likely to be associated with oral cancer?

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A. Aphthous ulcers @ No. Aphthous ulcers are ulcerations on the oral mucosa and are linked to systemic lupus and Crohn disease.

B. Oral leukoplakia @ No. Oral leukoplakia is a common lesion associated with tobacco use so there is a concern about malignancy. Most of these lesions are histologically benign.

C. Lichen planus @ No. Lichen planus are typically white, net-like patches or ulceration on the mucus membranes that may be associated with autoimmune disease.

*D. Erythroplakia @ Yes. Erythroplakia oral lesions are reddish lesions that fail to resolve over time and are associated with an increased risk (50%) of malignancy.

E. Candidiasis @ No. Candidiasis occurs in the setting of antibiotic or corticosteroid use, as well as immune-suppressed states. It is not associated with malignancy.

14. Which of the following is the causative organism for acute necrotizing gingivitis?

A. Group A beta-hemolytic *Streptococcus* @ No. Group A beta-hemolytic *Streptococcus* is not the causative organism for acute necrotizing gingivitis.

B. Group B beta-hemolytic *Streptococcus* @ No. Group B beta-hemolytic *Streptococcus* is not the causative organism for acute necrotizing gingivitis.

C. *Corynebacterium* @ No. *Corynebacterium* is not the causative organism for acute necrotizing gingivitis.

D. *Staphylococcus* @ No. *Staphylococcus* is not the causative organism for acute necrotizing gingivitis.

*E. *Fusobacterium* @ Yes. Acute necrotizing gingivitis is a significant infection of the mouth that is caused by infection with anaerobes, especially *Fusobacterium* species, and

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gram-negative pathogens. This condition results in significant pain along with painful and red gums that can ulcerate and bleed easily.

15. A 3-year-old male presents with a malodorous discharge coming from his right nostril. About 2 weeks ago, he developed frequent sneezing and mucus discharge mixed with blood. There is no family history of allergic disease or recurrent infections. Physical examination reveals diminished air entry through the right nasal fossa with associated purulent, bloody discharge from the right nostril. Which of the following is the most likely diagnosis?

A. Allergic rhinitis @ No. Allergic rhinitis is characterized by rhinorrhea, with a clear nasal discharge.

B. AV malformations @ No. AV malformations present with recurrent epistaxis.

*C. Nasal foreign body @ Yes. This patient presents with a nasal foreign body. Children may insert foreign objects into their nose and ears. At first, symptoms include frequent sneezing and obstruction. This is followed by the development of a unilateral infection, resulting in a purulent and malodorous discharge and bleeding.

D. Vasomotor rhinitis @ No. Vasomotor rhinitis presents with a runny nose with clear discharge and is mediated by cigarette smoke and cold temperatures.

E. Nasal polyp @ No. Nasal polyp results from hypertrophy and hyperplasia of the nasal mucosa in response to chronic inflammatory stimuli, most often allergic reactions.

16. Which of the following complications is associated with rapid infusion of IV furosemide (Lasix)?

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*A. Acute hearing loss @ Yes. Furosemide, a loop diuretic, can cause ototoxicity, and this is especially the case if it is infused too rapidly.

B. Acute visual loss @ No. Acute visual loss is not associated with rapid infusion of IV furosemide.

C. Nystagmus @ No. Nystagmus is not associated with rapid infusion of IV furosemide.

D. Rhinorrhea @ No. Rhinorrhea is not associated with rapid infusion of IV furosemide.

E. Pharyngitis @ No. Pharyngitis is not associated with rapid infusion of IV furosemide.

17. A 5-year-old male presents with acute pain in his right ear that occurred 2 days after developing cold symptoms. There is no ear drainage, sore throat, or dysphagia. Physical examination reveals an afebrile male who appears nontoxic. The right tympanic membrane is erythematous with poor mobility on pneumatic otoscopy. The rest of the auditory canal is unremarkable. Which of the following is the medical treatment of choice?

*A. Amoxicillin @ Yes. This patient has otitis media. Amoxicillin is the first-line treatment and the primary initial therapy for patients who have significant signs and symptoms, who are considered immune competent, and who have not received recent antibiotic therapy. Treatment with analgesics and observation are other options.

B. Azithromycin @ No. Azithromycin does have a role in treatment failures from amoxicillin treatment but is not first-line treatment.

C. Trimethoprim-sulfamethoxazole @ No. Trimethoprim-sulfamethoxazole does have a role in treatment failures from amoxicillin treatment but is not first-line treatment.

D. Amoxicillin-clavulanate @ No. Amoxicillin-clavulanate does have a role in treatment failures from amoxicillin treatment but is not first-line treatment.

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E. Doxycycline @ No. Doxycycline is not used due to poor penetration into the middle ear.

18. Which of the following Weber test results would be noted in the patient with impacted cerumen in the right auditory canal?

A. Sound localized to the left ear @ No. The Weber test is used for the evaluation of hearing loss. The test can detect unilateral conductive and sensorineural hearing loss. Impacted cerumen causes a conductive hearing loss. In a conductive hearing loss, the Weber test lateralizes to the affected ear.

*B. Sound localized to the right ear @ Yes. The Weber test is used for the evaluation of hearing loss. The test can detect unilateral conductive and sensorineural hearing loss. Impacted cerumen causes a conductive hearing loss. In a conductive hearing loss, the Weber test lateralizes to the affected ear, in this case, the right ear

C. Sound heard equally in both ears @ No. The Weber test is used for the evaluation of hearing loss. The test can detect unilateral conductive and sensorineural hearing loss. Impacted cerumen causes a conductive hearing loss. In a conductive hearing loss, the Weber test lateralizes to the affected ear.

D. Bone conduction greater than air conduction @ No. Air and bone conduction is evaluated by the Rinne test.

E. Air conduction greater than bone conduction @ No. Air and bone conduction is evaluated by the Rinne test.

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19. A 19-year-old presents with nasal congestion since starting a new lawn service job 2 months ago. He also notes a chronic scratchy sore throat, sneezing, clear rhinorrhea, and watery, itchy eyes. Which of the following is the most likely physical examination finding that would be noted in this patient?

A. Deviated nasal septum @ No. Deviated nasal septum is not a likely physical examination finding in this patient.

*B. Bluish, edematous turbinate mucosa @ Yes. Allergic rhinitis is seasonal or perennial itching, sneezing, rhinorrhea, nasal congestion, and sometimes conjunctivitis, caused by exposure to allergens. Physical examination findings include edematous, bluish-red nasal turbinate, and conjunctival infection and eyelid edema.

C. Erythematous mucosa with purulent drainage @ No. Purulent drainage is noted in sinusitis infections.

D. Bloody, crusty lesion in Kiesselbach plexus @ No. Bloody lesion in Kiesselbach plexus is noted in epistasis.

E. Purulent drainage from middle nasal meatus @ No. Purulent drainage is noted in sinusitis infections.

20. A patient presents with a large and deep laceration through the left cheek of the face. The laceration has severed the parotid gland. Which of the following physical examination finding would be expected in this patient?

A. Loss of taste to posterior one-third of the tongue @ No. Glossopharyngeal nerves control taste; this nerve exits the base of the skull and neck.

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B. Loss of ability to protrude the tongue @ No. Hypoglossal nerve controls tongue movement and exits the base of the skull and neck.

*C. Loss of ability to protrude the lips @ Yes. A laceration to the left cheek severing the parotid gland would damage the facial nerve, mainly the buccal branch. The facial nerve innervates the muscles of facial expression, so this patient would lose the ability to protrude the lips.

D. Loss of ability to gaze upward @ No. Oculomotor nerve controls upward gaze and travels through the cavernous sinus to the orbit.

E. Loss of ability to smell @ No. Sense of smell is controlled by the olfactory nerve. The olfactory nerve exits from below the frontal lobe of the brain.

21. Which of the following physical examination finding is most often noted in patients with thrush?

A. Koplik spots @ No. Koplik spots are noted in measles.

*B. White plaques @ Yes. Thrush is an infection of the oral cavity due to *Candida albicans*. Infection in the mouth is characterized by white plaques in the tongue, around the mouth, and throat. Irritation may also occur, causing discomfort when swallowing.

C. Epstein pearls @ No. Epstein pearls are gingival cysts.

D. Fluid-filled vesicle @ No. Fluid-filled vesicles are noted in herpes infections.

E. Erythematous macules @ No. Erythematous macules may be noted in drug reactions or viral infections.

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22. A patient with a history of Crohn disease presents with multiple, painful ulcerations on the buccal mucosa. The ulcers are 2–3 mm in diameter. Which of the following is the most likely diagnosis?

*A. Aphthous stomatitis @ Yes. Aphthous ulcers are well-demarcated, shallow, ovoid, or round and have a necrotic center with a yellow-gray pseudomembrane, a red halo, and slightly raised red margins. They can be noted in patients with systemic lupus and Crohn disease.

B. Oral candidiasis @ No. Oral candidiasis presents with white plaques in the tongue, around the mouth, and throat.

C. Herpes simplex @ No. Herpes simplex presents with fluid-filled vesicles on a red base.

D. Leukoplakia @ No. Leukoplakia presents with a flat white spot on the oral mucosa.

E. Parotitis @ No. Parotitis is inflammation of the parotid gland.

23. Which of the following is a classic historical finding noted in patients with Ludwig angina?

A. History of alcohol abuse @ No. History of alcohol abuse is not a classic historical finding noted in patients with Ludwig angina.

B. History of night sweats @ No. History of night sweats is not a classic historical finding noted in patients with Ludwig angina.

*C. Poor dental hygiene @ Yes. Ludwig angina, a submandibular space infection, is a rapidly spreading, bilateral, indurated cellulitis occurring in the suprahyoid soft tissues, the floor of the mouth, and both sublingual and submaxillary spaces without abscess formation. It typically develops from an odontogenic infection or as an extension of

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peritonsillar cellulitis. Contributing factors include poor dental hygiene, tooth extractions, and trauma.

D. Choking episode @ No. Choking episode is not a classic historical finding noted in patients with Ludwig angina.

E. Smoking history @ No. Smoking history is not a classic historical finding noted in patients with Ludwig angina.

24. Which of the following signs or symptoms is most commonly noted in peritonsillar abscess?

A. Halitosis @ No. Halitosis is noted in gingivitis and lung abscesses.

*B. Muffled voice @ Yes. Peritonsillar abscess is an acute pharyngeal infection most common among adolescents and young adults. Symptoms are severe sore throat, drooling, trismus, “hot potato” voice, and uvular deviation.

C. Soft palate petechiae @ No. Soft palate petechiae are noted in rubella.

D. White buccal plaques @ No. White buccal plaques are noted in oral candidiasis.

E. Multiple fluid-filled vesicles @ No. Multiple fluid-filled vesicles are noted in herpes infection.

25. A 40-year-old female presents with a 3-week history of headache, nasal congestion, and sinus pressure. The nasal congestion is worse in the mornings but tends to get better as the day progresses. Physical examination reveals a temperature of 100.2 °F, tenderness over the maxillary sinuses, copious thick, yellow nasal discharge. Which of the following is the next best step in the evaluation of this patient?

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A. Sinus x-rays @ No. Sinus infections are usually diagnosed clinically. Imaging is not indicated in acute sinusitis unless there are findings that suggest complications, in which case x-rays are not the test of choice.

B. Nasal culture @ No. Sinus cultures are only indicated if empiric treatment fails.

*C. Sinus CT scan @ Yes. Sinusitis is inflammation of the paranasal sinuses due to viral, bacterial, or fungal infections or allergic reactions. Symptoms include nasal obstruction and congestion, purulent rhinorrhea, facial pain or pressure, headache, and fever. Sinus infections are usually diagnosed clinically. Imaging is not indicated in acute sinusitis unless there are findings that suggest complications, in which case CT is the test of choice.

D. Ultrasound of the sinuses @ No. Sinus infections are usually diagnosed clinically. Imaging is not indicated in acute sinusitis unless there are findings that suggest complications, in which case ultrasound is not the test of choice.

E. Transillumination of the sinuses @ No. Sinus infections are usually diagnosed clinically. Imaging is not indicated in acute sinusitis unless there are findings that suggest complications, in which case transillumination of the sinuses is not the test of choice.

26. A scraping of the posterior pharynx is done on a patient with possible oral candidiasis. Which of the following is the most likely finding?

A. Multinucleated cell on Tzanck smear @ No. Multinucleated cells are noted in herpes infection.

B. Acid-fast bacilli with Ziehl–Neelsen stain @ No. Acid-fast bacilli are noted in tuberculosis infection.

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C. Blue intracellular deposits with Prussian blue stain @ No. Prussian blue stain is used to identify iron in cells.

*D. Hyphae and budding yeast on Gram stain @ Yes. Oral candidiasis is due to infection with *Candida albicans*. *C. albicans* is a yeast and on KOH or wet prep yeast and pseudo-hyphae will be noted.

E. Gram-positive cocci on Giemsa stain @ No. Gram-positive cocci are noted in staphylococcal or streptococcal infections.

27. An 18-month-old presents with a 24-hour history of fever with temperatures as high as 101.5 °F. The mother states that the child has had a runny nose for the past 10 days. On physical examination, tympanic membranes are erythematous and bulging. Nasal turbinates are erythematous with clear drainage. Which of the following is the most likely diagnosis?

A. Viral rhinitis @ No. Viral rhinitis presents with nasal congestion, rhinorrhea, cough, low-grade fever, and sneezing.

*B. Otitis media @ Yes. Acute otitis media is a bacterial or viral infection of the middle ear, usually accompanying an upper respiratory infection. Symptoms include otalgia, often with systemic symptoms. Otoscopic examination reveals a bulging, erythematous tympanic membrane with indistinct landmarks and displacement of the light reflex. Air insufflation shows poor mobility of the TM.

C. Otitis externa @ No. Otitis externa presents with edema and erythema of the external auditory canal.

D. Allergic rhinitis @ No. Allergic rhinitis is characterized by rhinorrhea, with a clear nasal discharge, and the patient is afebrile.

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E. Acute sinusitis @ No. Acute sinusitis presents with purulent rhinorrhea, pressure and pain in the face, nasal congestion and obstruction, hyposmia, halitosis, and productive cough.

28. An 18-month-old male with an 8-hour history of fever, dysphagia, and drooling. On physical examination, the child is ill appearing with inspiratory stridor, bilateral equal breath sounds, and symmetrical chest movement. Which of the following is the most likely diagnosis?

A. Croup @ No. Croup presents with a brassy, barking cough and inspiratory stridor.

B. Teething @ No. Teething does not present with respiratory findings.

*C. Epiglottitis @ Yes. Epiglottitis is a progressive bacterial infection of the epiglottis and surrounding tissues that may lead to sudden respiratory obstruction. Symptoms include severe sore throat, dysphagia, high fever, drooling, and inspiratory stridor.

D. Pneumonia @ No. Pneumonia presents with respiratory congestion and rales on the pulmonary examination.

E. Foreign body aspiration @ No. Foreign body aspiration symptoms vary with the level of obstruction, but wheezing is typical.

29. A 45-year-old male with a 40 pack-year history of tobacco use, including oral snuff, presents with a sore mouth and difficulty in swallowing, which has been getting progressively worse over the past 6 months. On physical examination, there is a 1.5-cm lesion on his buccal mucosa, which is adherent to the mucosa. Which of the following is the most likely diagnosis?

*A. Oral cancer @ Yes. Oral cancer refers to cancer occurring between the vermilion border of the lips and the junction of the hard and soft palates or the posterior one-third of

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the tongue. Risk factors include smoking and/or alcohol. The lesions may appear as areas of erythroplakia or leukoplakia and may be ulcerated, often indurated and firm with a rolled border.

B. Aphthous ulcer @ No. Aphthous ulcers are well-demarcated, shallow, ovoid, or round and have a necrotic center with a yellow-gray pseudomembrane, a red halo, and slightly raised red margins.

C. Oral candidiasis @ No. Oral candidiasis presents with white plaques in the tongue, around the mouth, and throat.

D. Tori mandibulares @ No. Torus mandibularis is a bony growth in the mandible along the surface nearest to the tongue.

E. Nonpigmented nevus @ No. Nonpigmented nevi are moles that are harmless cells.

30. A 56-year-old male presents complaining of recurrent episodes of vertigo. The vertigo only lasts a minute or two. He denies hearing loss or tinnitus. He denies any visual changes. Which of the following is the most likely diagnosis?

A. Meniere disease @ No. Meniere disease presents with vertigo, tinnitus, and hearing loss.

B. Acute labyrinthitis @ No. Acute labyrinthitis presents with vertigo, tinnitus, and hearing loss.

C. Acoustic neuroma @ No. Acoustic neuroma presents with vertigo, tinnitus, and hearing loss.

*D. Benign positional vertigo @ Yes. BPPV is the most common cause of relapsing vertigo. It affects older patients and is triggered by head movements. Vertigo lasts only a

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few seconds to minutes. Nausea and vomiting may occur but hearing loss and tinnitus do not.

E. Vertebrobasilar insufficiency @ No. Vertebrobasilar insufficiency presents with vertigo and other neurologic signs.

31. A 3-year-old presents with fever, chills, and trouble swallowing for the past 3 days. Physical examination reveals a temperature of 103 °F, tender anterior cervical lymphadenopathy, tonsillar exudates, and a fine maculopapular rash on his chest, back, and extremities. Which of the following is the most likely diagnosis?

*A. Group A streptococcal pharyngitis @ Yes. Group A streptococcal pharyngitis presents with a sore throat, fever, a beefy red pharynx, and a purulent tonsillar exudate. Cervical and submaxillary nodes may enlarge and become tender. Cough, laryngitis, and stuffy nose are not characteristic.

B. Hand, foot, and mouth disease @ No. Hand, foot, and mouth disease presents with painful ulcers on the soft palate and uvula. There may be accompanying target-like lesions on the palms and soles.

C. Infectious mononucleosis @ No. Infectious mononucleosis presents with a pharyngitis but there is no exudate.

D. Oral herpes simplex @ No. Oral herpes simplex presents with vesicles on the buccal mucosa.

E. Measles @ No. Measles presents with cough, coryza, and conjunctivitis.

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32. A 15-year-old presents with pain in the left ear, first noted after swimming. On physical examination, the auditory canal is swollen, and tenderness is noted with palpation of the tragus. Which of the following is the most likely diagnosis?

A. Otitis media @ No. Otitis media presents with ear pain and a bulging, erythematous TM.

B. Serous otitis @ No. Serous otitis may present with no symptoms and the TM is an amber or gray color, light reflex is displaced, and an air-fluid level may be visible through the TM.

*C. Otitis externa @ Yes. Otitis externa presents with pain and a foul-smelling discharge and hearing loss. Tenderness is noted with the traction of the pinna or pressure over the tragus. Otoscopic examination reveals the ear canal to be red, swollen and contains moist, purulent debris and desquamated epithelium.

D. Eustachian tube dysfunction @ No. Eustachian tube dysfunction presents with aural fullness, ears popping, a feeling of pressure in the affected ear.

E. Tympanic membrane rupture @ No. Traumatic perforation of the TM can cause pain, bleeding, hearing loss, tinnitus, and vertigo.

33. A patient presents with severe vertigo. After returning from an underwater dive the patient states that he developed severe vertigo and hearing loss. Which of the following is the most likely diagnosis?

*A. Barotrauma @ Yes. Barotrauma of the middle ear affects divers and is due to insufficient equilibration of the middle ear. Signs and symptoms include hearing loss and vertigo.

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B. Presbycusis @ No. Presbycusis is age-related hearing loss and is the most common cause of sensorineural hearing loss in the adult population.

C. Serous otitis media @ No. Serous otitis may present with no symptoms and the TM is an amber or gray color, light reflex is displaced, and an air-fluid level may be visible through the TM.

D. Cholesteatoma @ No. Cholesteatoma is a collection of squamous epithelium and keratin debris that usually involves the middle ear and mastoid. It occurs following recurrent infection or trauma.

E. Otosclerosis @ No. Otosclerosis is a condition with hearing loss due to limited mobility of the middle ear bones.

34. Which of the following is the most common cause of anterior epistaxis in children?

A. Coagulation defects @ No. Coagulation defects are not a common cause of anterior epistaxis in children.

B. Systemic disease @ No. Systemic disease is not a common cause of anterior epistaxis in children.

C. Foreign bodies @ No. Foreign bodies are not a common cause of anterior epistaxis in children.

D. Nasal polyps @ No. Nasal polyps are not a common cause of anterior epistaxis in children.

*E. Trauma @ Yes. The most common causes of anterior epistaxis in children include local trauma and drying of the nasal mucosa.

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35. Which of the following drug class is most likely to cause irreversible hearing loss?

A. 5-flurouricil @ No. 5-Flurouricil is not an ototoxic drug.

B. Alpha-blockers @ No. Alpha-blockers are not ototoxic drugs.

*C. Aminoglycosides @ Yes. Common ototoxic drugs include antibiotics including streptomycin, neomycin, amikacin, gentamicin, tobramycin, and vancomycin; chemotherapy agents including cisplatin and carboplatin, other medications include ethacrynic acid, furosemide, and quinine.

D. Clindamycin @ No. Clindamycin is not an ototoxic drug.

E. Salicylates @ No. Salicylates more commonly cause tinnitus.

36. Which of the following increases the risk of the development of dental caries?

A. Lactobacillus acidophilus in the mouth @ No. Lactobacillus acidophilus in the mouth is not a risk factor in the development of dental caries.

B. Chewing of sugar-free gum @ No. Chewing sugar-free gum is not a risk factor in the development of dental caries.

C. Use of bottled drinking water @ No. Use of bottled drinking water is not a risk factor in the development of dental caries.

*D. Low socioeconomic status @ Yes. Development of dental caries has several risk factors. Risk factors include inadequate plaque control, increased dietary carbohydrates and sugars, high-acid and/or low-fluoride environment, low socioeconomic status, and reduced salivary flow due to drugs, radiation therapy, and systemic disorders.

E. Topical fluoride treatment @ No. Topical fluoride treatment is not a risk factor in the development of dental caries.

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37. Which of the following is an indication for referral to otolaryngology for possible tympanostomy?

A. Otitis media in a patient whose twin has had a tympanoplasty @ No. Criteria for considering tympanostomy tubes include the following: three episodes of AOM in 6 months or four episodes of AOM in 1 year, with one episode in the preceding 6 months.

B. First episode of otitis media with a temperature of 103 °F @ No. Criteria for considering tympanostomy tubes include the following: three episodes of AOM in 6 months or four episodes of AOM in 1 year, with one episode in the preceding 6 months.

C. Second episode of otitis media with enlarged adenoids @ No. Criteria for considering tympanostomy tubes include the following: three episodes of AOM in 6 months or four episodes of AOM in 1 year, with one episode in the preceding 6 months.

*D. Third episode of otitis media in <6 months @ Yes. Criteria for considering tympanostomy tubes include the following: three episodes of AOM in 6 months or four episodes of AOM in 1 year, with one episode in the preceding 6 months.

E. Fourth episode of otitis externa in <2 years @ No. Criteria for considering tympanostomy tubes include the following: three episodes of AOM in 6 months or four episodes of AOM in 1 year, with one episode in the preceding 6 months.

38. A 12-year-old presents with an insect in the external auditory canal. On physical examination, the TM is intact and there is an insect in the external canal. Which of the following is the next best step in the intervention of this patient?

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A. Watchful waiting @ No. Watchful waiting is not the next best step in the intervention of this patient.

B. MRI of inner ear @ No. MRI of the inner ear is not the next best step in the intervention of this patient.

C. Refer to ENT for removal @ No. Referral to ENT for removal is not the next best step for this patient.

D. Irrigate with hydrogen peroxide and removal with suction @ No. Irrigation with hydrogen peroxide and removal with suction is not the next best step in the intervention of this patient.

*E. Fill canal with mineral oil, removal under direct visualization @ Yes. An insect in the ear canal should be killed with viscous lidocaine or mineral oil filling the external canal followed by removal under direct visualization.

39. A 30-year-old male presents with recurrent bouts of dizziness, tinnitus, and hearing loss. He states that the episodes are incapacitating and cause him to become sick to his stomach and vomit. The episodes last about 1 hour and the symptoms disappear after a few days. The last two episodes were treated with meclizine and prochlorperazine at the emergency room. Audiometry reveals low-tone frequency hearing loss. Which of the following is the most appropriate long-term management for this patient?

A. Epley maneuver and corticosteroid @ No. Epley maneuver is used in benign paroxysmal positional vertigo.

*B. Diuretics and low-sodium diet @ Yes. Meniere disease is characterized by tinnitus, episodic vertigo, and progressive hearing loss. Treatment options include symptom relief

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with antiemetics, antihistamines, or benzodiazepines; diuretics and low-salt diet; and vestibular ablation.

C. Tympanostomy tube insertion @ No. Tympanostomy is used for patients with recurrent AOM.

D. Scopolamine patch @ No. Scopolamine patch is used to treat motion sickness.

E. Oral antibiotics @ No. Antibiotics are used for infection.

40. A patient presents with cerumen impaction. While cleaning the ear canal with a pulsating water device syringe, the patient experiences severe ear pain and vertigo. Which of the following is the most likely cause of these symptoms?

A. Disruption of the ossicles @ No. Disruption of the ossicles is not the most likely cause of these symptoms.

B. Collapsing of the Eustachian tube @ No. Collapsing of the Eustachian tube is not the most likely cause of these symptoms.

*C. Perforation of tympanic membrane @ Yes. Irrigation of the ear can lead to a variety of complications including otitis externa, vertigo, perforation of the tympanic membrane, and middle ear damage if the tympanic membrane is perforated. With perforation of the TM, the patient will note sudden pain, ringing in the ears, loss of the ability to hear, nausea, and dizziness.

D. Stimulation of the semicircular canal @ No. Stimulation of the semicircular canal is not the most likely cause of these symptoms.

E. Caloric reflex in external auditory canal @ No. Caloric reflex in the external auditory canal is not the most likely cause of these symptoms.

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41. Which of the following is the treatment of choice for stage I laryngeal cancer?

A. Laser excision and chemotherapy @ No. Moderately advanced disease is treated with radiation therapy and at times chemotherapy.

*B. Laser excision and radiation therapy @ Yes. Early-stage (T1 and T2) laryngeal cancer is treated with laser excision and radiation therapy.

C. Radical laryngectomy and chemotherapy @ No. Advanced disease is treated with surgery followed by radiation therapy and at times chemotherapy.

D. Radical laryngectomy and radiation therapy @ No. Advanced disease is treated with surgery followed by radiation therapy and at times chemotherapy.

E. Radical laryngectomy, chemotherapy, and radiation therapy @ No. Advanced disease is treated with surgery followed by radiation therapy and at times chemotherapy.

42. A 12-year-old male presents to your clinic complaining of right ear pain. He states that he has been doing a lot of swimming over his summer vacation from school. Physical examimation reveals a red, inflamed ear canal and the tympanic membrane cannot be visualized. Movement of the tragus causes pain. Which of the following choices is the most appropriate treatment?

A. Oral ibuprofen @ No. Otitis externa presents with pain and a foul-smelling discharge and hearing loss. Tenderness is noted with traction of the pinna or pressure over the tragus. Otoscopic examination reveals the ear canal to be red, swollen and contains moist, purulent debris and desquamated epithelium. Oral ibuprofen is not the most appropriate treatment.

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B. Oral Amoxicillin @ No. Otitis externa presents with pain and a foul-smelling discharge and hearing loss. Tenderness is noted with traction of the pinna or pressure over the tragus. Otoscopic examination reveals the ear canal to be red, swollen and contains moist, purulent debris and desquamated epithelium. Oral amoxicillin is not the most appropriate treatment.

C. Oral Prednisone and oral amoxicillin @ No. Otitis externa presents with pain and a foul-smelling discharge and hearing loss. Tenderness is noted with traction of the pinna or pressure over the tragus. Otoscopic examination reveals the ear canal to be red, swollen and contains moist, purulent debris and desquamated epithelium. Oral prednisone and oral amoxicillin are not the most appropriate treatment options.

*D. Otic hydrocortisone and otic ciprofloxacin @ Yes. Otitis externa presents with pain and a foul-smelling discharge and hearing loss. Tenderness is noted with traction of the pinna or pressure over the tragus. Otoscopic examination reveals the ear canal to be red, swollen, and contains moist, purulent debris and desquamated epithelium. Treatment for mild or moderate acute otitis externa includes topical antibiotics (ciprofloxacin, ofloxacin, or neomycin/polymyxin) and corticosteroids.

E. Referral to an otolaryngologist for debridement of the ear canal @ No. Otitis externa presents with pain and a foul-smelling discharge and hearing loss. Tenderness is noted with traction of the pinna or pressure over the tragus. Otoscopic examination reveals the ear canal to be red, swollen and contains moist, purulent debris and desquamated epithelium. Debridement of the ear canal is not the most appropriate treatment.

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43. Which of the following medications should be avoided in patients with asthma and nasal polyps?

A. Acetaminophen @ No. Acetaminophen does not need to be avoided in patients with asthma and nasal polyps.

B. Corticosteroids @ No. Corticosteroids do not need to be avoided in patients with asthma and nasal polyps.

C. Antihistamines @ No. Antihistamines do not need to be avoided in patients with asthma and nasal polyps.

D. Beta-agonists @ No. Beta-agonists do not need to be avoided in patients with asthma and nasal polyps.

*E. Aspirin @ Yes. Aspirin exacerbated respiratory disease, or aspirin-induced asthma or Samter triad, is a medical condition with three key features: asthma, respiratory symptoms exacerbated by aspirin or other NSAIDS, and nasal polyps.

44. Which of the following antibiotics can result in teeth mottling when used in the pediatric population?

A. Penicillin @ No. Penicillin can lead to a type 1 hypersensitivity reaction.

B. Neomycin @ No. Neomycin can lead to hypersensitivity and neurotoxicity.

*C. Tetracycline @ Yes. In the pediatric population, tetracycline may cause tissue hyperpigmentation, enamel hypoplasia, or permanent tooth discoloration.

D. Ciprofloxacin @ No. Ciprofloxacin can lead to tendinitis and tendon rupture.

E. Erythromycin @ No. Erythromycin can lead to GI upset, nausea, vomiting, and development of hypertrophic pyloric stenosis.

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45. Which of the following medications blocks the degranulation of mast cells?

A. Loratadine @ No. Loratadine is a long-acting tricyclic antihistamine with selective peripheral histamine H_1-receptor antagonistic properties.

B. Montelukast @ No. Montelukast is a selective leukotriene receptor antagonist.

C. Fexofenadine @ No. Fexofenadine competes with histamine for H_1-receptor sites on effector cells in the gastrointestinal tract, blood vessels, and respiratory tract.

*D. Cromolyn sodium @ Yes. Cromolyn sodium prevents the mast cells from releasing histamine and leukotrienes.

E. Chlorpheniramine @ No. Chlorpheniramine competes with histamine for H_1-receptor sites on effector cells in the gastrointestinal tract, blood vessels, and respiratory tract.

46. A patient presents with oral pain, ulcerated interdental papillae, and gingival bleeding. The patient also noted a metallic taste in his mouth and a fetid breath. Which of the following is the treatment of choice?

*A. Chlorhexidine oral rinses and oral metronidazole @ Yes. Gingivitis is a periodontal disease that presents with gingival inflammation, bleeding, and swelling. It causes a deepening of the sulcus between the tooth and gingiva, followed by a band of red, inflamed gingiva along one or more teeth, with swelling of the interdental papillae and bleeding. Treatment is to control with proper oral hygiene with or without an antibacterial mouth rinse. With the presence of fetid breath, infection is probable so metronidazole should be added.

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B. Professional debridement and scaling @ No. Professional debriding and scaling should be done once the infection is controlled.

C. Oral nystatin swish and swallow @ No. Oral nystatin is used to treat oral candidiasis.

D. Fluocinonide gel to gingiva @ No. Fluocinonide gel to gingiva is not the treatment of choice for gingivitis.

E. Refer to oral surgeon @ No. If an abscess is present the patient should be referred to an oral surgeon.

47. Which of the following is the most common cause of epiglottitis in adults?

*A. Group A beta-hemolytic streptococcus @ Yes. Epiglottitis in adults is most commonly caused by Group A beta-hemolytic streptococcus.

B. *Staphylococcus epidermidis* @ No. *Staphylococcus epidermidis* is not a common cause of epiglottitis in adults.

C. *Mycoplasma pneumonia* @ No. *Mycoplasma pneumonia* is not a common cause of epiglottitis in adults.

D. *Chlamydia trachomatis* @ No. *Chlamydia trachomatis* is not a common cause of epiglottitis in adults.

E. *Moraxella catarrhalis* @ No. *Moraxella catarrhalis* is not a common cause of epiglottitis in adults.

48. What is the most common location of anterior nasal epistaxis?

A. Posterior ethmoid artery @ No. Posterior ethmoid artery supplies blood to Kiesselbach plexus.

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*B. Kiesselbach plexus @ Yes. Anterior epistaxis originates from a plexus of vessels in the anteroinferior septum called Kiesselbach area.

C. Woodruff plexus @ No. Woodruff plexus is located on the lateral wall of the nasal cavity below the inferior turbinate.

D. Inferior turbinate @ No. Posterior nosebleeds originate in the posterior septum overlying the vomer bone, or laterally on the inferior or middle turbinate.

E. Middle turbinate @ No. Posterior nosebleeds originate in the posterior septum overlying the vomer bone, or laterally on the inferior or middle turbinate.

49. Which of the following findings are suggestive of the diagnosis of epiglottitis in a child?

*A. Croupy cough and drooling @ Yes. A croupy cough with drooling in a patient who appears very ill is consistent with epiglottitis.

B. Thick gray, adherent exudate @ No. Presence of a thick gray adherent exudate is suggestive of diphtheria.

C. Fluid-filled vesicles on the vermillion border @ No. Fluid-filled vesicles on the vermillion border are suggestive of herpes simplex infection.

D. Inflammation and medial protrusion of one tonsil @ No. Inflammation with medial protrusion of the tonsil is suggestive of a peritonsillar abscess.

E. Beefy red uvula, palatal petechiae, white exudate @ No. A beefy red uvula, palatal petechiae, and white exudate are suggestive of streptococcal pharyngitis.

50. A 5-year-old with a severe penicillin allergy is diagnosed with acute otitis media. Which of the following is the treatment of choice?

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A. Trimethoprim-sulfamethoxazole @ No. Trimethoprim-sulfamethoxazole can be used but due to recent changes in sensitivity patterns they are not the preferred agent.

B. Ciprofloxacin @ No. Topical ciprofloxacin is used in the treatment of otitis externa.

*C. Azithromycin @ Yes. In the penicillin-allergic patient with acute otitis media, the treatment of choice is a macrolide, such as an azithromycin.

D. Tetracycline @ No. Tetracycline is contraindicated in children.

E. Cephalexin @ No. A cephalosporin, such as cephalexin, is contraindicated in severe penicillin-allergic patients.

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CHAPTER 4: PULMONARY SYSTEM

1. Pulmonary emboli usually arise from

*A. Deep venous system @ Yes. Pulmonary emboli are almost always embolic in origin, most commonly originating from thrombi in the deep veins of the legs or pelvis.

B. Left atrium @ No. Emboli originating from the left atrium enter the systemic circulation including the cerebral territory.

C. Pulmonary venous system @ No. Although emboli can form in the pulmonary venous system, pulmonary emboli rarely originate from this region.

D. Right atrium @ No. Although emboli can form in the right atrium, pulmonary emboli rarely originate from this region.

2. A 55-year-old arrives at the emergency department after 1 hour of sudden dyspnea and sharp, stabbing chest pain that worsens with inspiration. She was recently diagnosed with breast cancer and has a 3-year history of hypertension. Her current medications include amlodipine. She smokes approximately one pack of cigarettes per day and reports minimal use of alcohol. She appears distressed, anxious, and uncomfortable. Physical examination findings include a respiratory rate of 28 breaths/minute, pulse 112 beats/minute, blood pressure 120/80 mm Hg, temperature of 37 °C (oral). Auscultation of the chest is notable for the presence of rales in the right base and decreased lung sounds in the same area. Her electrocardiogram shows sinus tachycardia with no ischemic changes. Which of the following is the most likely diagnosis?

A. Bacterial pneumonia @ No. Bacterial pneumonia is associated with cough, fever, tachypnea, and central cyanosis.

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B. Myocardial infarction @ No. Acute myocardial infarction is associated with retrosternal, radiating chest pain, or pressure accompanied with ST-T wave changes on electrocardiogram.

C. Pericardial tamponade @ No. Cardiac tamponade is associated with hypotension, muffled heart sounds, distended neck veins, and low-amplitude QRS complexes on electrocardiogram.

*D. Pulmonary embolism @ Yes. The patient's sudden onset of chest pain, shortness of breath, anxiety, and tachycardia are consistent with pulmonary embolism.

3. A 57-year-old patient with no significant past medical history received an emergent CT angiography of the chest that showed extensive bilateral emboli. Physical examination findings were remarkable for an elevated jugular venous pulse with a prominent nu wave. A parasternal heave was also noted. Her vitals include a blood pressure of 90/60 mm Hg and a pulse rate of 90 beats/minute. What is the best next intervention for this patient?

A. D-dimer and cardiac enzymes @ No. D-dimer is frequently used as a screening test to exclude PE. Cardiac enzymes and electrocardiograms are important in the setting of myocardial ischemia or infarction to detect injury or damage to heart tissue.

B. Chest x-ray and electrocardiogram @ No. Chest x-rays are nonspecific in most PE cases.

C. Workup for a hypercoagulable state @ No. A workup for a hypercoagulable state is not helpful in an acute setting and should be postponed until the patient is hemodynamically stable.

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*D. Low molecular weight heparin and thrombolytic therapy @ Yes. This patient has a documented pulmonary embolus and also has signs of right ventricular strain and hemodynamic compromise. In all patients with acute pulmonary emboli with hemodynamic comprise (hypotension), emergent thrombolytic therapy should be considered. Anticoagulant therapy such as low molecular weight heparin (LMWH) should be considered for acute and long-term treatment of patients with diagnosed PE.

4. Which of the following is a normal mean resting pulmonary artery pressure?

A. 5 mm Hg @ No. Atrial pressures are between 2 and 6 mm Hg.

*B. 14 mm Hg @ Yes. The normal mean resting pulmonary artery pressure is 14 mm Hg. Pulmonary hypertension is defined as an increase in mean pulmonary $\geq$25 mm Hg.

C. 75 mm Hg @ No. The normal range for mean systemic arterial pressure is 70 to 100 mm Hg.

D. 90 mm Hg @ No. The upper limit of normal pulmonary artery pressure is approximately 20 mm Hg.

5. Which group of pulmonary hypertensions (PHs) is more commonly associated with young women?

*A. Group 1—Pulmonary arterial hypertension @ Yes. Women are more likely to develop pulmonary arterial hypertension (PAH).

B. Group 2—PH due to left heart disease @ No. Group 2 is associated with elderly patients with an increase in the prevalence of structural and functional left-sided heart disease and hypoxic lung disease.

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C. Group 3—PH due to chronic lung disease @ No. Group 3 is associated with elderly patients with an increase in the prevalence of structural and functional left-sided heart disease and hypoxic lung disease.

D. Group 4—PH due to thromboembolic obstruction @ No. For Group 4, the incidence and prevalence of the disease are largely unknown.

E. Group 5—PH due to unclear, multifactorial mechanisms @ No. For Group 5, the incidence and prevalence of the disease are largely unknown.

6. What are the cardinal symptoms of every form of pulmonary hypertension?

*A. Progressive exercise dyspnea often accompanied by fatigue and exhaustion @ Yes. All forms of pulmonary hypertension are associated with nonspecific signs of dyspnea, fatigue, and weakness, related to the progression of right heart failure.

B. Pleuritic chest pain that worsens with inspiration @ No. Pleuritic chest pain is usually not associated with pulmonary hypertension but is associated with pneumonia, pulmonary embolism, or pneumothorax.

C. Tachycardia, tachypnea, and fever @ No. Tachycardia, tachypnea, and fever are also associated with pneumonia.

D. Respiratory distress, chest pain, tachycardia, and absent breath sounds @ No. Respiratory distress, chest pain, tachycardia, and absent breath sounds are associated with pneumothorax.

7. A 55-year-old diagnosed with COPD recently moved to the area and has an appointment with his provider to establish care. He has a long history of tobacco use and a chronic, productive

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cough related to his COPD diagnosed 5 years ago. A recent echocardiogram was normal with an estimated ejection fraction of 65%. At today's visit, he admits to fatigue and new dyspnea on exertion but denies fever, weight loss, or any episodes of chest pain or pressure. He appears uncomfortable, in mild respiratory distress. On physical examination, you note cyanosis, jugular venous distension, peripheral edema, hepatomegaly, and ascites. Chest auscultation was remarkable for an accentuated S2 ejection click heard best on the left parasternal border, second intercostal space. Diffuse wheezes and crackles are also noted on the chest examination. Based on his history and presentation, what is the most likely diagnosis?

*A. Cor pulmonale @ Yes. Cor pulmonale is a cardiac complication of parenchymal lung disease and should be suspected in all patients with primary hypoxic lung disease. Signs of cor pulmonale on physical examination include accentuated second heart sound, peripheral edema, jugular venous distension, and hepatomegaly.

B. Left-sided heart failure @ No. Patients with left-sided heart failure would most likely have a decreased ejection fraction on echo. Left-heart failure is also associated with pulmonary edema (rales) and an S3.

C. Myocardial infarction @ No. Myocardial infarction would also be apparent on echo.

D. Pneumothorax @ No. Pneumothorax is associated with respiratory distress and jugular venous distention; however, distant or absent breath sounds would be expected on a physical examination.

8. What is the pathophysiology of the physical findings in cor pulmonale?

*A. Increased pulmonary vascular resistance and right ventricular afterload @ Yes. Cor pulmonale is a cardiac complication of parenchymal lung disease such as COPD. In-

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crease in pulmonary vascular resistance increases the work of the heart that will lead to right ventricular overload and failure.

B. Increased systemic vascular resistance and left ventricular afterload @ No. Increased systemic vascular resistance will affect the left ventricle.

C. Increased venous return and preload @ No. Increased venous return and preload will result in an increase in right ventricular output, not failure.

D. Decreased left ventricular systolic function and increased end-systolic pressure @ No. Decreased left ventricular systolic function or left-sided failure will lead to similar signs and symptoms; however, by definition, cor pulmonale is pulmonary hypertension with normal cardiac output.

9. A 55-year-old man, previously diagnosed with systemic scleroderma, presents to his primary care clinician with a complaint of feeling progressively worse over the past 2 months with accompanied shortness of breath and noticeable ankle swelling. A new diagnosis of cor pulmonale was made at this visit. What would you expect his EKG findings to show consistent with this new diagnosis?

*A. Right axis deviation, R/S amplitude ratio in V1 > 1 and R/S amplitude ratio in V6 < 1 @ Yes. Right axis deviation, R/S amplitude ratio in V1 > 1 and R/S amplitude ratio in V6 < 1, is associated with right ventricular strain and cor pulmonale.

B. Left axis deviation increased R wave amplitude in V4–V6 @ No. Left axis deviation increased R wave amplitude in V4–V6 is associated with left ventricular hypertrophy.

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