

Sample Dermatology Questions & Critiques

The sample NCCPA items and item critiques are provided to help PAs better understand how exam questions are developed and should be answered for NCCPA's Dermatology CAQ Exam.

Question #1

A 43-year-old woman comes to the clinic for a skin examination. The patient has several spots but is most concerned about a lesion on her forehead that she estimates has been present for one year. She says it does not hurt but has scabbed a few times after she manipulated it thinking it was acne. She had one blistering sunburn during childhood and now wears sunscreen when she goes outside. The top differential diagnoses include basal cell carcinoma, squamous cell carcinoma, and sebaceous gland hyperplasia. On dermoscopy, which of the following findings supports a diagnosis of sebaceous gland hyperplasia in this patient?

- A. Arborizing telangiectasias
- B. Comma vessels
- C. Crownlike telangiectasias**
- D. Glomerular vessels
- E. Serpiginous vessels

Content Area: Benign Tumors and Vascular Lesions (5%)

Critique

This question assesses the examinee's ability to assess findings on dermoscopy to formulate a diagnosis. The correct answer is Option (C), crownlike telangiectasias, because this dermoscopy finding is relatively specific for sebaceous gland hyperplasia compared with the other options.

Option (A), arborizing telangiectasias, is incorrect because this finding is more characteristic of basal cell carcinoma than of sebaceous gland hyperplasia. Option (B), comma vessels, and Option (D), glomerular vessels, are incorrect because these findings are characteristic of nevi, not of sebaceous gland hyperplasia. Option (E), serpiginous vessels, is incorrect because this finding is characteristic of amelanotic melanoma, not of sebaceous gland hyperplasia.

Question #2

A 23-year-old woman comes to the emergency department for evaluation of sudden onset of painful lesions on her hands. The patient says the lesions appeared one hour after she shoveled snow in her driveway. On physical on examination of the hands, which of the following findings is most likely?

- A. Macerated patches between web spaces
- B. Pink polygonal plaques
- C. Skin-colored papules with central umbilication
- D. Tender, erythematous patches**
- E. Violaceous patches with central clearing and a raised border

Content Area: Inflammatory Dermatoses (11%)

Critique

This question assesses the examinee's ability to formulate a diagnosis based on a patient's history and to identify corresponding findings on physical examination. The correct answer is Option (D), tender, erythematous patches, because this is the classic presentation of chilblains following cold-weather exposure.

Option (A), macerated patches between web spaces, is incorrect because although chilblains affect the hands, web space involvement is more characteristic of erythrasma. Option (B), pink polygonal plaques, is incorrect because this finding is consistent with lichen planus rather than chilblains. Option (C), skin-colored papules with central umbilication, is incorrect because this finding is characteristic of molluscum contagiosum rather than chilblains. Option (E), violaceous patches with central clearing and a raised border, is incorrect because this finding is characteristic of granuloma annulare rather than chilblains.

Question #3

In a patient with suspected lipodermatosclerosis, which of the following diagnostic procedures is most appropriate to confirm the diagnosis when results of ultrasonography are inconclusive?

- A. Calculation of the ankle-brachial index
- B. Electromyography of the lower extremities
- C. MRI of the lower extremities
- D. Shave biopsy of the center of a plaque
- E. **Wedge biopsy of the edge of a plaque**

Content Area: Skin Manifestations of Systemic Disease and Nutritional Deficiency (5%)

Critique

This question assesses the examinee's ability to evaluate skin manifestations of chronic disease. The correct answer is Option (E), wedge biopsy of the edge of a plaque. Although this diagnosis is mostly made clinically, it is the only option that obtains tissue from the subcutaneous layers/panniculus.

Option (A), calculation of the ankle-brachial index, is incorrect because this test compares blood pressures measured at the ankle versus the arm and is used to diagnose narrowing of the arteries in the lower legs, whereas lipodermatosclerosis is associated with venous insufficiency. Option (B), electromyography of the lower extremities, is incorrect, because this study detects neuromuscular abnormalities and is therefore not diagnostic for lipodermatosclerosis. Option (C), MRI of the lower extremities, is incorrect because although this imaging study is less invasive than wedge biopsy and can be used to view the extent of the disease, it is not considered diagnostic for lipodermatosclerosis. Option (D), shave biopsy of the center of a plaque, is incorrect because the tissue collected for this study is not obtained from the subcutaneous layers and is insufficient for making a diagnosis.

Question #4

A 38-year-old woman comes to the clinic for evaluation of a rash on her abdomen that she first noticed four months ago. Physical examination shows numerous salmon-colored scaly papules and plaques on the trunk and proximal extremities. Punch biopsy is performed, and pityriasis rubra pilaris is diagnosed. Acitretin therapy is planned. Before this therapy is initiated, which of the following blood tests is most appropriate to perform at baseline and periodically while the patient is using the medication?

- A. **Measurement of serum beta-human chorionic gonadotropin level**
- B. Measurement of serum follicle-stimulating hormone level
- C. Measurement of serum G6PD level
- D. Measurement of serum gamma-glutamyl transferase level
- E. Thyroid function panel

Content Area: Psoriasis and other Papulosquamous Diseases (10%)

Critique

This question assesses the examinee's ability to order appropriate laboratory tests for monitoring a patient undergoing systemic therapy for a chronic dermatologic condition. The correct answer is Option (A), measurement of serum beta-human chorionic gonadotropin level, because acitretin is teratogenic and the patient described could potentially become pregnant.

Option (B), measurement of serum follicle-stimulating hormone level, is incorrect because although concentration of this hormone would be altered in a pregnant patient, this test is not used to screen for pregnancy. Option (C), measurement of serum G6PD level, is incorrect because although this test would be appropriate to order prior to initiating oral dapsone therapy, it is not indicated for decision-making regarding retinoids such as acitretin. Option (D), measurement of serum gamma-glutamyl transferase level, is incorrect because although monitoring liver function is appropriate during acitretin therapy, the preferred test would be measurement of the serum alanine transaminase level. Option (E), thyroid function panel, is incorrect because the results of this study have no relevance to acitretin therapy. Whether normal or altered, these test results would not affect a decision to prescribe acitretin.

Question #5

A 37-year-old woman comes to the dermatology clinic for evaluation of discoloration of her face that she first noticed six months ago. She gave birth to her second child one year ago. Physical examination shows dark-brown, hyperpigmented patches on the cheeks and forehead. Which of the following is the most likely diagnosis?

- A. Lentigo simplex
- B. Melasma**
- C. Pityriasis alba
- D. Poikiloderma of Civatte
- E. Seborrheic keratosis

Content Area: Pigment Disorders (3%)

Critique

This question assesses the examinee's ability to formulate an accurate diagnosis on the basis of a patient's history and the findings on physical examination. The correct answer is Option (B), melasma, because the clinical presentation of dark-brown, hyperpigmented patches on the cheeks and forehead, as described in the scenario, is classic for melasma. Pregnancy is also a common cause of melasma.

Option (A), lentigo simplex, is incorrect because although this condition can present as a dark-brown patch on the face, the distribution of the patches and the patient's history of recent pregnancy, as described in the scenario, are more consistent with a diagnosis of melasma. Option (C), pityriasis alba, is incorrect because although this condition can appear on the cheeks and forehead, it causes hypopigmentation rather than hyperpigmentation, as described in the scenario. Option (D), poikiloderma of Civatte, is incorrect because this condition is characterized by telangiectasias, mottled reddish-brown patches, and atrophy found symmetrically on the neck and upper chest rather than on the face, as described in the scenario. Option (E), seborrheic keratosis, is incorrect because although the lesions characteristic of this condition are pigmented, they are textured and stuck-on discrete lesions that can appear on multiple sites on the body, whereas the patient described in the scenario has patches on the face.

Question #6

A 3-year-old boy is brought to the dermatology clinic by his mother for evaluation of multiple bumps on his lower extremities. The patient's mother says she first noticed a single bump, but it has spread to multiple bumps over the past several months. Medical history includes atopy. Physical examination shows multiple shiny, skin-colored papules on the posterior aspect of the lower extremities. Which of the following is the most likely diagnosis?

- A. Eczema herpeticum
- B. Herpes simplex
- C. Molluscum contagiosum**
- D. Varicella zoster
- E. Verruca vulgaris

Content Area: Infectious Dermatoses (6%)

Critique

This question assesses the examinee's ability to formulate a diagnosis on the basis of a patient's history and the findings on physical examination. The correct answer is Option (C), molluscum contagiosum. The scenario describes a classic presentation of this condition: multiple shiny, skin-colored papules that have spread in a patient with a history of atopy.

Option (A), eczema herpeticum, is incorrect because although this condition occurs in patients with atopy, the physical presentation is vesicular with punched-out erosions and crusting, not shiny, skin-colored papules, as described in the scenario. Option (B), herpes simplex, is incorrect because herpes simplex is unlikely to present bilaterally on the lower extremities and usually resolves before the lesions described in this presentation. Option (D), varicella zoster, is incorrect because in patients with varicella zoster, the distribution is typically dermatomal. This condition is also unlikely to present bilaterally on the lower extremities and usually resolves before the lesions described in the scenario. Option (E) verruca vulgaris, is incorrect because although these lesions can spread on the lower extremities and present as papules, their surface is characteristically rough and verrucoid rather than shiny.

Question #7

A 27-year-old woman comes to the office because she has had worsening erythema, edema, scaling, and pruritus of her eyelids for the past four months. She has not had rash or swelling of her lips, tongue, or oropharyngeal areas. Her topical skin care regimen includes mineral-based sunscreen, lavender oil, and petrolatum moisturizer. She also takes oral biotin and turmeric daily. Discontinuation of which of the following is most likely to alleviate this patient's rash?

- A. Biotin
- B. Lavender oil**
- C. Mineral-based sunscreen
- D. Petrolatum moisturizer
- E. Turmeric

Content Area: Inflammatory Dermatoses (11%)

Critique

This question assesses the examinee's knowledge of the common causes of contact dermatitis. The correct answer is Option (B), lavender oil, because lavender is a known cause of contact dermatitis, and although the oil is usually applied to the entire face, the eyelid skin is often the only affected area.

Option (A), biotin, is incorrect because a skin eruption due to an oral supplement usually presents on the trunk first and then spreads to the extremities. Option (C), mineral-based sunscreen, is incorrect because although any topical product can cause contact dermatitis, the likelihood that a mineral-based sunscreen would cause such a reaction is low. Option (D), petrolatum moisturizer, is incorrect because it is unlikely to cause contact dermatitis and is most likely to alleviate symptoms of contact dermatitis. Option (E), turmeric, is incorrect because a turmeric allergy presents more commonly as hives.

Question #8

A 7-year-old boy is brought to the dermatology clinic by his parents because a mole on his back has changed in appearance over the past year. The patient is otherwise healthy and takes no medications. Family medical history includes G6PD deficiency in his mother and malignant melanoma in his paternal grandfather. The patient has not yet been tested for G6PD deficiency. Physical examination shows a bicolored macule measuring 7 mm with irregular borders on the right side of the upper back. Biopsy is performed, and severely dysplastic nevus is diagnosed. Complete excision of the lesion is recommended. The parents request a topical anesthetic to numb the area before injection of the local anesthetic. The most appropriate response is to advise the parents that a topical anesthetic is contraindicated in their son because it may lead to which of the following serious reactions?

- A. Kidney failure
- B. Methemoglobinemia**
- C. Neuropathy
- D. Rhabdomyolysis
- E. Thrombosis

Content Area: Nevi and Melanoma (8%)

Critique

This question assesses the examinee's knowledge of the adverse effects of anesthetics. The correct answer is Option (B), methemoglobinemia, because the patient described in the scenario has a family history of G6PD deficiency and has not himself been tested. Topical anesthetics are known to cause adverse reactions in patients with G6PD deficiency, which may be undiagnosed in this patient.

Option (A), kidney failure, Option (C), neuropathy, Option (D), rhabdomyolysis, and Option (E), thrombosis, are incorrect because these conditions are not common adverse reactions to topical anesthetics.

Question #9

A 21-year-old woman with skin type V comes to the office because she has had acne on her cheeks and forehead for the past two years. Application of over-the-counter tretinoin, clindamycin, and benzoyl peroxide has somewhat resolved the lesions, but the patient would like to try a chemical peel for some small, resistant pimples and hyperpigmented macules. Because of the patient's skin type, which of the following information is most appropriate to share with her about undergoing a chemical peel?

- A. She is advised to pretreat with tazarotene
- B. She is at decreased risk for postinflammatory hyperpigmentation
- C. She is at increased risk for acne exacerbation
- D. She is not a candidate for chemical peel**

Content Area: Acne, Rosacea, and Related Disorders (8%)

Critique

This question assesses the examinee's ability to recognize and manage the risks and complications of cosmetic procedures. The correct answer is Option (D), she is not a candidate for chemical peel. The patient described has skin type V, and a chemical peel may lead to worsening hyperpigmentation.

Option (A), she is advised to pretreat with tazarotene, is incorrect because discontinuation rather than initiation of a topical retinoid is recommended before receiving a chemical peel to prevent excessive irritation. Option (B), she is at decreased risk for postinflammatory hyperpigmentation, is incorrect because the patient described has a skin type that increases rather than decreases her risk for postinflammatory hyperpigmentation after a chemical peel. Option (C), she is at increased risk for acne exacerbation, is incorrect because chemical peels are known to improve rather than exacerbate acne.

Question #10

A 67-year-old woman with skin type I comes to the clinic for follow-up evaluation of actinic keratosis. At her most recent visit two months ago, cryotherapy was administered and photodynamic therapy was discussed. Medications include acetaminophen, hydrochlorothiazide, metoprolol, insulin, and a daily multivitamin. Physical examination shows tender, pink, and scaly papules on the face. Photodynamic therapy is recommended. Discussion with the patient about which of the following medications in her regimen is most appropriate before initiation of this new treatment modality?

- A. Acetaminophen
- B. Hydrochlorothiazide**
- C. Metoprolol
- D. Simvastatin

Content Area: Hypersensitivity Reactions (5%)

Critique

This question assesses the examinee's knowledge of common adverse reactions to photosensitizing medications. The correct answer is Option (B), hydrochlorothiazide. Hydrochlorothiazide is a medication with increased incidence of photosensitivity, photoallergic reaction, and phototoxic reaction.

Option (A), acetaminophen, Option (C), metoprolol, and Option (D), simvastatin, are incorrect because these medications do not have increased probability of photosensitizing properties.