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Case 1

White Skin Discolourations

A 19-year-old female presents with white patches on her trunk that she noticed soon after joining a tanning salon. They are occasionally pruritic. She is otherwise healthy.

What is your diagnosis?

a. Vitiligo
b. Pityriasis alba
c. Tinea versicolor
d. Mild dermatitis
e. Confluent and reticulated papillomatosis

Answer

Tinea versicolor **(answer c)** is a common fungal infection of the superficial layer of skin, the stratum corneum. It commonly presents as hyper- or hypopigmented macules and patches on the chest, shoulders and back. Although benign, this condition is often of cosmetic concern and can chronically recur in hot, humid climates. *Malassezia furfur* yeast is part of the normal cutaneous human flora and can also be an opportunistic pathogen, (it is present in most adults). There is no gender or racial predilection. Teenagers are more commonly affected and the elderly are uncommonly affected.

The diagnosis is clinically made in most cases. A Wood's light examination of the skin may reveal copper-orange fluorescence. Occasionally, a Potassium Hydroxide (KOH) examination is helpful to demonstrate the hyphae. Treatment options include topical selenium sulfide, azole and allylamine antifungals and ciclopirox olamine which may be applied daily for two to three weeks and periodically during hot and humid months as maintenance. Oral antifungal therapy is useful for more extensive involvement or where topical therapy appears to have failed.

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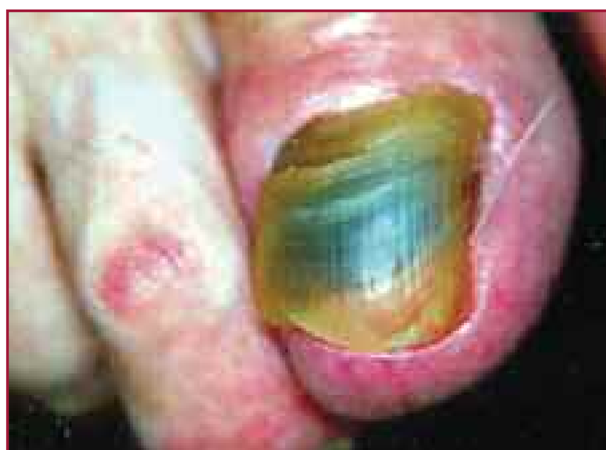
Case 2

A Green Toenail

A 64-year-old diabetic female presents with a few weeks history of a green nail over her right big toe. She has also swelling with redness around the proximal and lateral nail folds.



What is your diagnosis?

a. Onychomycosis
b. *Pseudomonas* nail infectionl
c. Ingrown infected nail
d. Onycholysis

Answer:

Pseudomonas nail infection **(answer b)** is short, motile Gram-negative rods which often produce the blue-green pigment pyocyanin and has characteristic sweet odour. Large number of species which can cause wound infections, pneumonia, meningitis, intestinal infections (children), otitis and sepsis particularly during immunosuppressive therapy. *Pseudomonas* infections are common in hospitals and can cause urinary tract infections (catheter infection), wound infections, secondary bone and joint infections.

Immunocompromised patients, especially those with diabetes, are at increased risk of infection. Repeated exposure to soap and water causes maceration of the hyponychium and softening of the nail plate. Separation of the nail plate (onycholysis) exposes a dump macerated space between nail plate and nail bed which is a fertile site for the growth of *Pseudomonas*. Vinegar (5% acetic acid) applied under the nail twice a day or antibiotic oral therapy is the treatment of choice.

This condition is short, motile gram negative rods which often produces the blue-green pigment pyocyanin and has characteristic sweet odour.

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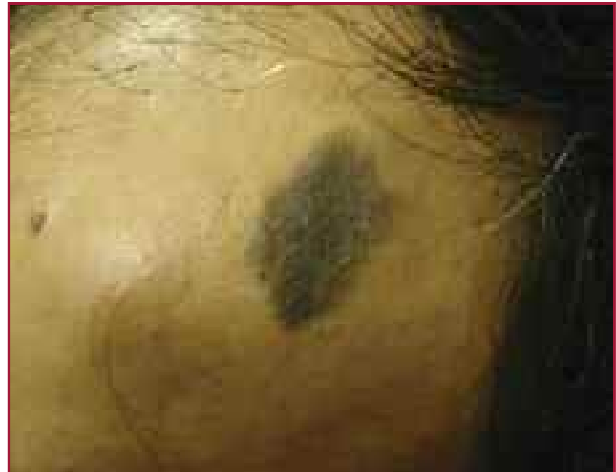
Case 3

Spot on the Forehead

This 40-year-old Asian male has had this lesion on his forehead since childhood.



What is your diagnosis?

a. Venous lake
b. Melanoma
c. Nevus of ota
d. Cellular blue nevus
e. Pigmented seborrheic keratosis

Answer

Blue nevi **(answer d)** are benign tumours of dermal melanocytes. The blue colour is due to the refraction of light through the superficial layers of skin (Tyndall phenomenon). The more common blue nevus is a well-circumscribed domed papule up to 1 cm in size. The much less common cellular blue nevus is usually up to 3 cm with a somewhat more irregular shape, surface and plaque-like configuration. Its colour is more often blue, blue-grey or black in nature.

The onset of blue nevi is usually in early childhood while approximately 25% of cellular blue nevi are congenital. Blue nevi are more commonly on the dorsa, hands and feet but are also found on the face and scalp. The cellular type are more common in the sacral buttock region as well as on the scalp and less so on the extremities. While malignant transformation of cellular blue nevi especially on the scalp has been reported, the incidence is very low. The only therapy is complete excision which is indicated when the lesion is changing in character.

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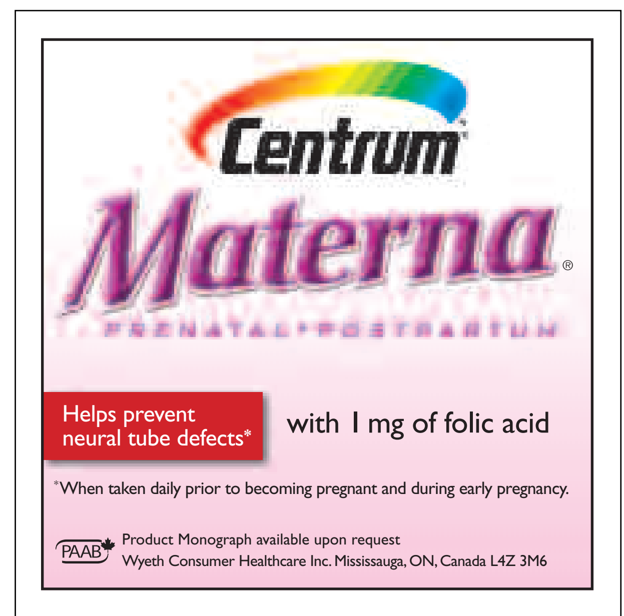
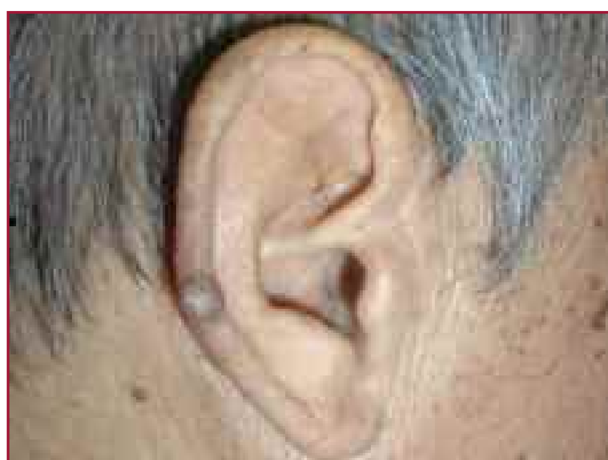


Case 4

Ear Nodule

This gentleman presented with this painful ear nodule, which he has had for about three months.



What is your diagnosis?

a. Chondrodermatitis nodularis helicis
b. Nodular melanoma
c. Squamous cell carcinoma
d. Epithelioma

Answer

Chondrodermatitis nodularis helicis (CNH) **(answer a)** is a common benign painful condition of the helix or antihelix of the ear. CNH more often affects middle-aged or older men, but cases in women occur also.

The exact cause of CNH is unknown, although most authorities believe it is caused by prolonged and excessive pressure. Several anatomic features of the ear predispose persons to the development of this condition. The ear has relatively little subcutaneous tissue for insulation and padding and only small dermal blood vessels supply the epidermis, dermis, perichondrium and cartilage. Dermal inflammation, edema and necrosis from trauma, cold, actinic damage or pressure probably initiate the disease. Focal pressure on the stiff cartilage most likely produces damage to the cartilage and overlying skin in most cases. Anatomic features of the ear, as listed above, prevent adequate healing and lead to secondary perichondritis. The right ear is more commonly involved.

Topical antibiotics may relieve pain caused by secondary infections. Topical and intralesional steroids also may be effective in relieving discomfort. Collagen injections may bring relief by providing cushioning between the skin and cartilage. Cryotherapy has also been used as a treatment modality. If specific efforts to relieve pressure are unsuccessful, surgical approaches almost always are needed.

Hayder Kubba graduated from the University of Baghdad, where he initially trained as a Trauma Surgeon. He moved to Britain, where he received his FRCS and worked as an ER Physician before specializing in Family Medicine. He is currently a Family Practitioner in Mississauga, Ontario.

Case 5

Premature Graying Hair

A seven-year-old girl presents with a small, newly discovered patch of white hair near the nape of her neck. The full length of the hair is white. She has vitiligo, but is otherwise healthy.

What is your diagnosis?

a. Silvery hair syndrome
b. Accidental bleaching
c. Poliosis (leukotrichia)
d. Waardenburg syndrome
e. Piebaldism

Answer

Poliosis **(answer c)**, also known as leukotrichia, is a local white patch of hair seen in 12% of patients with vitiligo. Poliosis can develop at any age. As in vitiligo, poliosis results from the destruction of melanocytes. As this was found at the nape of the neck, it was likely that this went unnoticed as the depigmented hair grew to full length.

There is no treatment for poliosis. However, poliosis is also associated with other conditions including Marfan syndrome, Vogt-Koyanagi-Harada disease, sarcoidosis and alopecia areata. Some drugs have also been associated with this condition. It is imperative that clinicians consider these associations in a patient with poliosis and decide whether further investigation is warranted.

Silvery hair syndrome are autosomal recessive disorders, producing universal silver discolouration to the hair in the first few months of life. Most of these are associated with other anomalies, most commonly immunodeficiencies. There is no history of accidental bleaching in this patient and it would be unlikely to cause such a well-demarcated patch of hair. Poliosis commonly presents as a white forelock, which can cause confusion with Waardenburg syndrome. However, in addition to the white forelock, Waardenburg syndrome is characterized by iris heterochromia and sensorineural deafness. In addition to depigmentated patches with islands of normal or hyperpigmentation, piebaldism commonly causes a white forelock with a hypopigmented triangular patch pointing backwards into the scalp from the anterior hairline.

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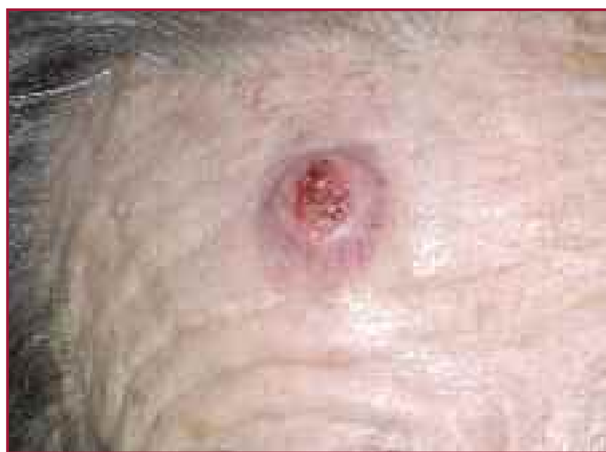
Case 6

A Rapidly Growing Bump

This 90-year-old gentleman brought in by his son, was alarmed by this rapidly growing nodule on his father's forehead, which occurred about three weeks ago. Being in good health for his age, he only suffers from benign prostatic hyperplasia and diabetes, which is very well controlled on glyburide.



What is your diagnosis?

a. Squamous cell carcinoma
b. Basal cell carcinoma
c. Keratoacanthoma
d. Lipoma

Answer

Keratoacanthoma (KA) **(answer c)** is a relatively common low-grade malignancy that originates in the pilosebaceous glands, closely and pathologically resembles squamous cell carcinoma (SCC). In fact, strong arguments support classifying KA as a variant of invasive SCC. Pathologists often label KA as "well differentiated SCC, keratoacanthoma variant." KA is characterized by rapid growth over a few weeks to months, followed by spontaneous resolution over four to six months in most cases. KA reportedly progresses, although rarely, to invasive or metastatic carcinoma. Therefore, aggressive surgical treatment often is advocated. Whether these cases were SCC or KA, the reports highlight the difficulty of distinctly classifying individual cases.

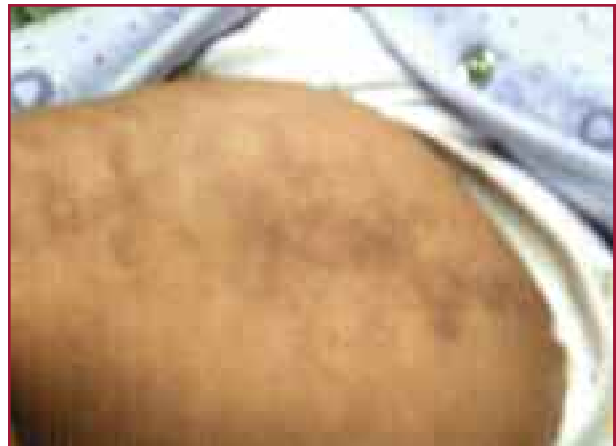
Diagnosis is best done with the clinical exam and history. Usually the patient will notice a rapid growing dome-shaped tumour on the sun exposed skin. A skin biopsy must be performed to confirm the diagnosis. Unfortunately, a shave biopsy will often only reveal keratin fragments. A deep punch biopsy will often reveal a well differentiated, mildly atypical, squamous cell suggestive of an actinic keratosis or a SCC. Only when the pathologist has access to the entire lesion (not practical in many circumstances) can a correct diagnosis be rendered. KA should be surgically removed.

Hayder Kubba graduated from the University of Baghdad, where he initially trained as a Trauma Surgeon. He moved to Britain, where he received his FRCS and worked as an ER Physician before specializing in Family Medicine. He is currently a Family Practitioner in Mississauga, Ontario.

Case 7

Bluish-Purple Thigh

A five-month-old girl presents with a violaceous, reticulate pattern on the left thigh. The colour intensifies on exposure to cold environment but does not disappear when the skin is warmed. There is no atrophy or ulceration of the overlying skin.



What is your diagnosis?

a. Livedo reticularis
b. Cutis marmorata
c. Venous malformation
d. Port-wine stain

Answer

Livedo reticularis **(answer a)** is characterized by the presence of a bluish-purple, mottled or net-like pattern in the skin. The lesion occurs predominantly on the lower extremities and less commonly on the upper extremities or the trunk. Exposure to cold environments usually intensifies the vascular pattern. In contrast to cutis marmorata, the mottling does not disappear when the skin is warmed and the discolouration is bluish-purple rather than red. The exact etiology is not known. The condition is believed to result from slow blood flow and decreased oxygen tension. Livedo reticularis is usually an isolated finding. Occasionally, livedo reticularis can be associated with coagulopathies, autoimmune disease, systemic vasculitis and antiphospholipid syndrome (APS). Children with livedo reticularis have been reported to have a slightly increased risk for cerebrovascular accidents (Sneddon syndrome). Amantadine-induced livedo reticularis has also been reported.

The condition is believed to result from slow blood flow and decreased oxygen tension.

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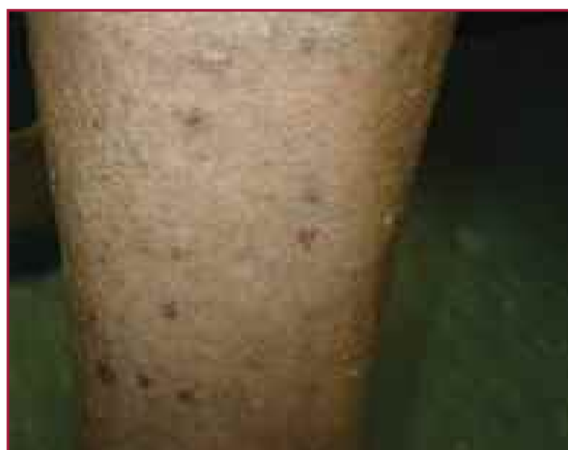
Case 8

Purpuric Spots

This 80-year-old farmer still does routine lawn maintenance on his property. Recurrently over the summer he has developed lesions on both lower legs.



What is your diagnosis?

a. Flea bites
b. Kaposi's sarcoma
c. Folliculitis
d. Grass allergy
e. Traumatic injury

Answer

Traumatic injury **(answer e)**. After cutting the grass he uses a grass trimmer for the edges of the lawn. These purpuric spots appear after each gardening event and represent point injuries due to the spraying of small stones and other debris onto his legs.

Wearing long pants would solve the problem. He was also advised to wear protective eye gear.

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These purpuric spots appear after each gardening event.

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