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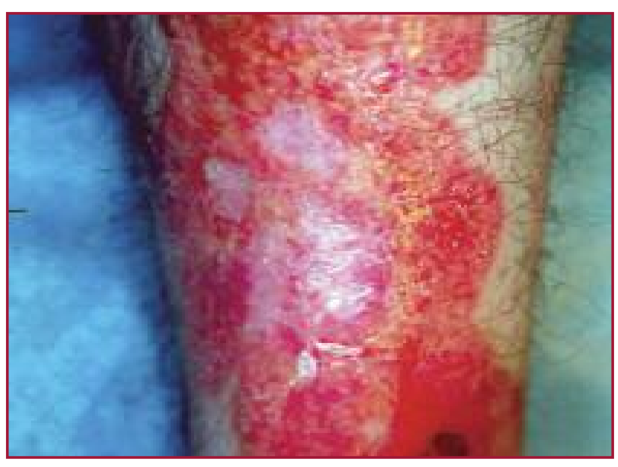
Case 1

Red Shins

A 34-year-old male who is diabetic and is on insulin visited a clinic with complaints of asymptomatic skin lesions over both legs.



What is your diagnosis?

a. Psoriasis
b Necrobiosis lipoidica diabeticorum
c. Stasis dermatitis
d. Asteatoic eczema

Answer

Necrobiosis lipoidica diabeticorum (NLD) **(answer b)** is a disease of unknown origin but > 50% of the patients are insulin dependent, although it affects < 1% of all diabetics. NLD is characterized by shiny, atrophic, yellowish-red plaques on the shins. The skin lesions may appear years before the onset of diabetes. The disease may occur at any age but most commonly begins in the third and fourth decade of life. Most of the patients with NLD are female and in most cases the lesions are confined to the anterior surface of the lower legs. The eruptions begin as an oval violaceous patch and expand slowly. The advancing border is red and the central area turns yellow-brown. The central area atrophies has a waxy surface, therefore telangiectasias become prominent. Ulceration is possible, particularly after trauma. Histologically, degenerate dermal collagen is seen with epithelioid cells and giant cells. This condition is chronic and is unresponsive to treatment.

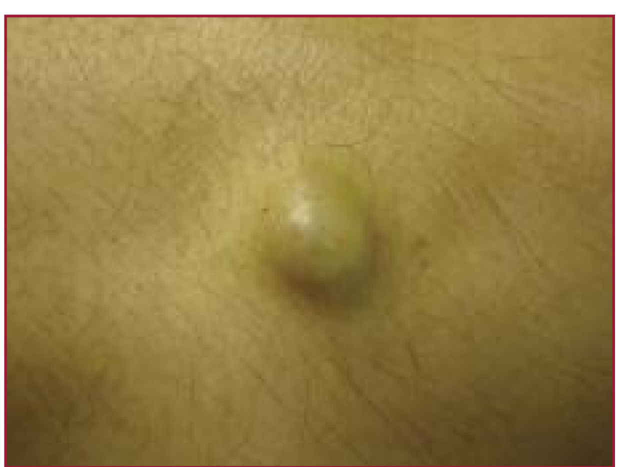
Jerzy K. Pawlak, MD, MSc, PhD, is a General Practitioner, Winnipeg, Manitoba.

T. J. Kroczak, BSc, is a Fourth Year Student, University of Manitoba, Winnipeg, Manitoba.

Case 2

Skin Growth

This 30-year-old female has had a lesion on her left mid-leg for six months. It is freely moveable and compressible but not tender.



What is your diagnosis?

a. Epidermal cyst
b. Sebaceous cyst
c. Pilar cyst
d. Dermoid cyst
e. Cystic basal cell cancer

Answer

An epidermal cyst **(answer a)** is one of the most common benign skin growths. It often has a shiny surface due to underlying pressure of its content, mostly macerated keratin. They are usually freely moveable and can be found anywhere on the body, usually on the face, neck and trunk. Note, the macerated keratin often has a cheesy character and rancid smell giving the false impression that it is of sebaceous origin, hence the misnomer "sebaceous cyst."

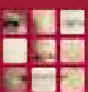
They are usually freely moveable and can be found anywhere on the body, usually on the face, neck and trunk.

A pilar cyst is clinically similar but 90% are on the scalp but can occasionally be on the face or extremities and has a dominant inheritance pattern. It is filled with stratified squamous epithelium derived from the outer hair root sheath.

Dermoid cysts result from embryonic developmental anomalies principally along closure lines of the scalp, face, nose and eyes. It too is lined with squamous epithelium often containing embryonic hair.

A cystic basal cell carinoma often has a serous fluid in it but telangiectasia of its surface usually points to the correct diagnosis.

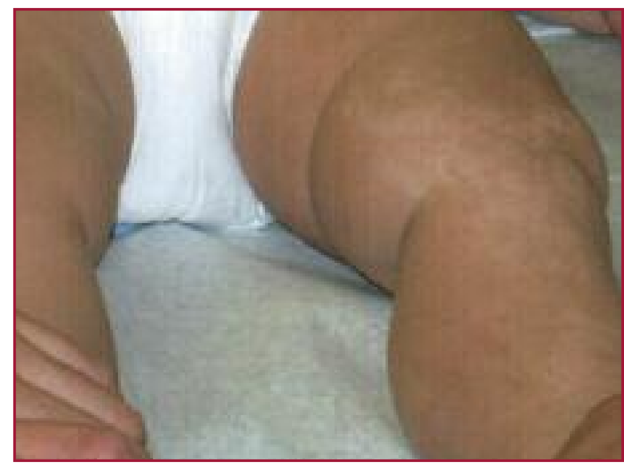
Stanley Wine, MD, FRCPC, is a Dermatologist in North York, Ontario.



Case 3

Hypopigmented Streaks

A two-year-old girl presents with hypopigmented streaks on her left leg and thigh. The lesions have been present since birth. The lesions are asymptomatic and the child is well otherwise.



What is your diagnosis?

a. Tuberous sclerosis
b. Tinea versicolor
c. Vitiligo
d. Hypomelanosis of Ito

Answer

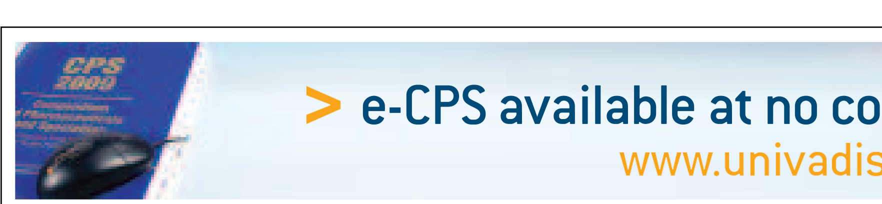
Hypomelanosis of Ito **(answer d)** is characterized by bizarre, macular, hypopigmented streaks, whorls, stripes and patches that conform to the lines of Blaschko. The lesions usually affect more than two body segments. The palms, soles, scalp and mucous membrane are almost always spared. The lesions often present at birth or early childhood and tend to fade in adulthood. Chromosomal abnormalities are found in approximately 50% of cases, especially balanced X autosomal translocations or mosaicisms.

Most cases are sporadic which suggests that the condition is the result of postzygotic mutation. Approximately two-thirds of affected patients have associated central nervous system (psychomotor retardation, epilepsy, autism), musculoskeletal (short stature, kyphoscoliosis, digital deformity), or ocular anomaly (nystagmus, strabismus, scleral melanocytosis).

There is no specific treatment, but the use of sunscreen might minimize the differences between the affected and normal skin.

Alexander K. C. Leung, MBBS, FRCPC, FRCP (UK and Irel), is a Clinical Associate Professor of Pediatrics, University of Calgary, Calgary, Alberta.

Alexander G. Leong, MD, is a Medical Staff at the Asian Medical Clinic, an Affiliate with the University of Calgary Medical Clinic, Calgary, Alberta.



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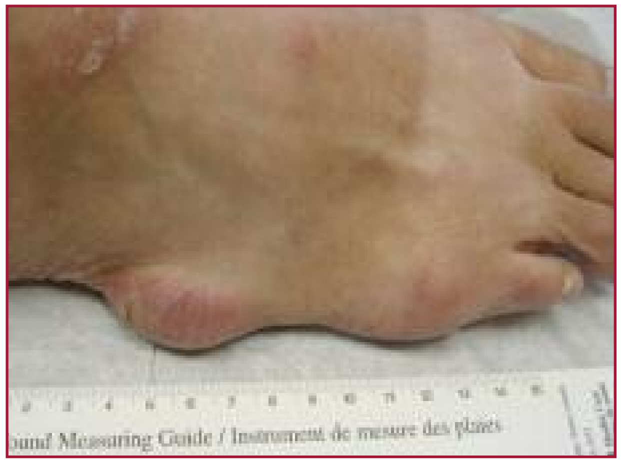
Case 4

Localized Swelling of the Foot

This 50-year-old female presents with swelling 4 cm by 2 cm by 2 cm at the base of the fifth metatarsal of her right foot. It is asymptomatic, but has increased in size in the past six months. She has a history of seropositive rheumatoid arthritis which is currently stable on parenteral methotrexate.



What is your diagnosis?

a. Synovial cyst
b. Bunionette
c. Bursitis
d. Cellulitis
e. Intermetatarsal (Morton's) neuroma

Answer

Bursitis **(answer c)** is inflammation of the bursa which is a flattened sac for protection between bones and overlapping muscles (deep bursae), or between bones and tendons or skin (superficial bursae). Symptoms may include localized swelling, tenderness, erythema or reduced mobility. Common external causes of bursitis include:

- overuse,
- repetitive stress including improper footwear and
- direct trauma to a joint.

Other causes are inflammatory ones including:

- rheumatoid arthritis,
- gout or
- infection.

The sites most commonly affected are the elbows (olecranon bursitis) and knees (prepatellar bursitis, also known as "Housemaid's knee").

Treatment goals for bursitis are to eradicate the infection and/or to reduce inflammation. For non-infectious bursitis, self-care management includes resting and immobilizing the affected area. Ice can also be applied to reduce local swelling. If pain and significant inflammation are present, NSAIDs may be used. Resolution is expected within several weeks. If recalcitrant, injection of corticosteroid into the bursa may be beneficial. Typically, this treatment is very effective in providing immediate relief.

For infectious (septic) bursitis, aggressive treatment with antibiotics is warranted. The bursal fluid should also be aspirated for laboratory analysis. Surgical drainage and bursectomy may be necessary.

Carter Thorne, MD, FRCPC, FACP, is a Rheumatologist practicing in Newmarket, Ontario.

Kayi Li is a Third Year Medical Student at the University of Toronto, Toronto, Ontario.

Case 5

Scaly Skin

This South African lady requested some treatment for her rough skin. She used to spend long hours on the beach for quite a few years when she was back home.

What is your diagnosis?

a. Benign squamous papillomas
b. Actinic keratosis
c. Seborrheic keratosis
d. Asteatotic eczema

Answer

Actinic (solar) keratosis (AK) **(answer b)** is an extremely common disorder, with a small malignant potential. AK is related to long-term cumulative sunlight exposure, which eventually leads to disordered epidermal maturation. In a study of AK in bald men, the hair loss preceded keratosis by about 30 years. AK is very common by 70-years-of-age and may be extensive.

Typical AK is characterized by its hard, spiky scale qualities which typically arise from a rather banal base. AK is often easier to feel than to see. It may vary from an apparently solitary lesion in some patients to extensive sheets of apparently confluent keratosis. The differential diagnosis is mainly from benign squamous papillomas and seborrheic keratosis. There are inevitably other signs of solar damage in affected individuals, such as elastosis, telangiectasia and atrophy.

The most frequently misdiagnosed variant is an almost flat, erythematous or telangiectatic type which may be mildly scaly and rather diffuse. This is most frequently found on the forehead or temple skin and is often misdiagnosed as being eczema.

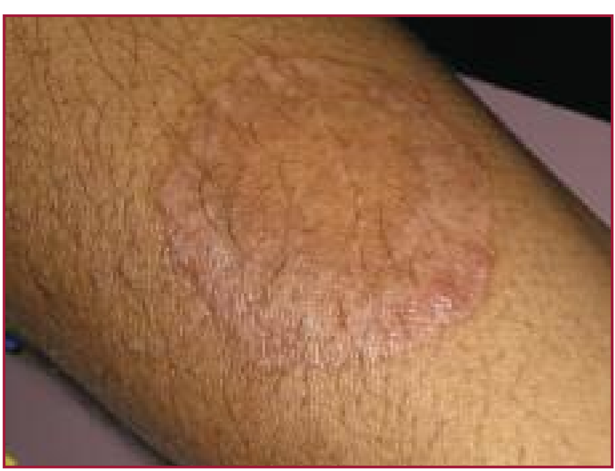
The risk of squamous cell carcinoma arising from AK is uncertain, as it is impossible in retrospect to know whether a precursor keratosis was actually a small squamous cell carcinoma or AK but the risk of transformation is probably in the order of 1:500 to 1:1000.

Hayder Kubba, MBChB, LMCC, CCFP, FRCS(UK), DFFP, DPD, 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 6

Red Annular Plaque on the Arm

A 44-year-old black female presents with a slowly expanding red, annular and slightly scaly plaque on her arm. She has mild pruritus.



What is your diagnosis?

a. Allergic contact dermatitis
b. Nummular eczema
c. Psoriasis
d. Eczema craquele
e. Tinea corporis

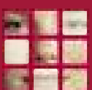
Answer

Tinea corporis **(answer e)** is a superficial dermatophyte infection caused by either *Trichophyton, Microsporum* or *Epidermophyton* species which can be found on humans, animals and in the soil. This infection can incubate for two to three weeks and then produce an annular rash with peripheral scaling. Tinea corporis is more commonly observed in hot and humid environments and *Trichophyton rubrum* is the most common cause, although *Trichophyton tonsurans* is increasing in prevalence.

This infection can incubate for two to three weeks and then produce an annular rash with peripheral scaling.

Topical therapy is usually sufficient for localized lesions. Typically an azole antifungal (*e.g.*, ketoconazole), allylamine (*e.g.*, terbinafine) or ciclopirox olamine is applied twice a day for two to three weeks directly to the lesion, as well as 1 cm to 2 cm around it. If there is significant erythema, pruritus or discomfort, adding a mild topical steroid can be beneficial as well. Systemic therapy may be warranted if there is extensive involvement or involvement of the scalp and nails as well.

Benjamin Barankin, MD, FRCPC, is a Dermatologist practicing in Toronto, Ontario.



Case 7

Irregular Patch on the Thigh

This 80-year-old man has gradually, over the past two years, developed an irregular, red patch in the left, upper, post thigh area which is sometimes mildly itchy.

What is your diagnosis?

a. Tinea corporis
b. Nummular eczema
c. Mycosis fungoides (T-cell lymphoma)
d. Granuloma annulare
e. Lichen sclerosus et atrophicans

Answer

Mycosis fungoides **(answer c)** is the most common of the cutaneous T-cell lymphomas but is in itself very rare. Mycosis fungoides is more common in men, usually > 60-years-of-age. The exact pathogenisis is unknown. The main immunologic factors involve the CD8+ cytotoxic T-cell.

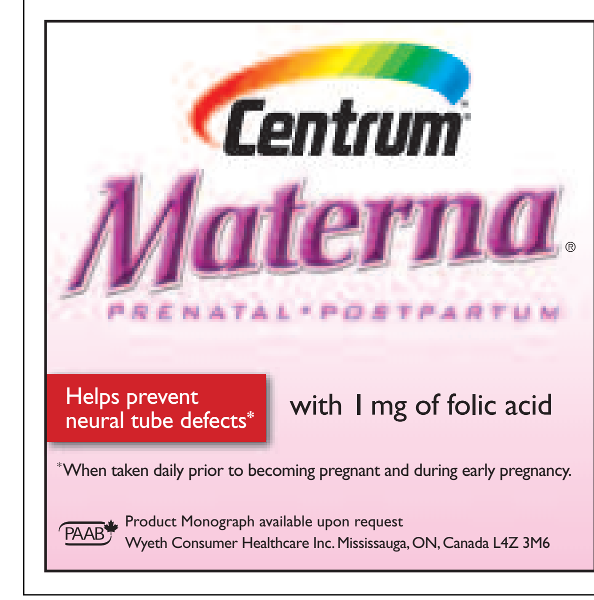
Early stage mycosis fungoides is usually patchy, 1 cm to 5 cm areas which slowly expand. Common areas are the lower abdomen, buttocks and upper thighs.

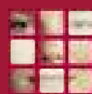
Common areas are the lower abdomen, buttocks and upper thighs.

The early stage as seen here has atrophic, often poikilodermatous features with varying degrees of dyspigmentation and telangiectasia, often with a polycyclic pattern. Progression to the plaque and tumour stage may take years or decades.

Treatment in early stages depends on the stage, general health and age of the patient. Otherwise, topical steroids or UVB in early stages progressing to antimetabolites, biologics and radiation when more severe.

Stanley Wine, MD, FRCPC, is a Dermatologist in North York, Ontario.

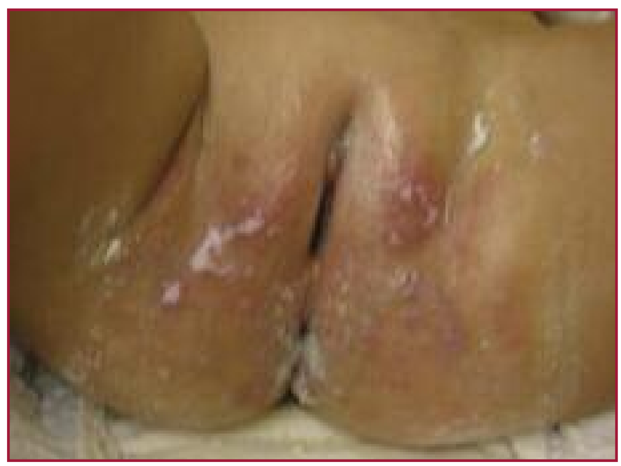




Case 8

Painful Erosions in the Diaper Area

A 10-month-old baby girl presents with a one-month history of symmetric, erythematous patches over skin prominences of the vulva and perianal regions. Over time, the erythematous areas became increasingly angry looking and elevated with erosions. This patient is otherwise well with no other skin manifestations. A cream has been applied to her rash.



What is your diagnosis?

a. Zinc deficiency (acrodermatitis enteropathica)
b. Candidiasis
c. Jacquet's dermatitis
d. Diaper psoriasis
e. Langerhans cell histiocytosis (LCH)

Answer

Jacquet's dermatitis **(answer c)** is a severe erosive form of diaper dermatitis. Diaper dermatitis is a non-specific diagnosis that describes the inflammatory skin manifestations from the irritation of a baby's skin from exposure to urine and feces. When prolonged, this may lead to complications including ulcerations and erosions as seen in this patient. In the photograph, skin erosions are highlighted by the barrier cream trapped within the eroded skin. Management of Jacquet's is the same as with any uncomplicated diaper dermatitis, including educating the parents to keep the baby's skin clean, dry, protected and infection free. Topical corticosteroids and barrier cream treatments usually suffice to clear the problem.

This is unlikely to be acrodermatitis enteropathica (AE) as the skin manifestations of zinc deficiency tend to be sharply marginated and bright red. Also, AE usually presents earlier, when a child is being weaned from breast milk, as zinc in human milk is more absorbable than that from infant formulas or cow's milk. In addition, lesions in AE generally involve multiple sites, including urogenital area, the face, hands and feet (although early on, lesions may involve perioral and urogenital regions alone). Finally, the characteristic triad of diarrhea, alopecia and acral dermatitis is absent.

Diaper candidiasis is unlikely due to the lack of sharp demarcation of the lesions and lack of satellite pustulovesicular lesions. Diaper psoriasis also tends to have sharper, bright red, well-demarcated borders. There may also be the classic papulosquamous lesions elsewhere on the body.

LCH is a disorder where there is abnormal clonal proliferation of Langerhans cells. This is unlikely as lesions in this disorder tend to be scaly and may have petechiae and/or purpura. When ulceration is present, it occurs in areas of skin folding whereas the erosions do not involve skin folds in this patient. Also, multisite involvement is typical in LCH including groin, axillae and retroauricular scalp.

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Joseph M. Lam, MD, is a Pediatric Dermatologist practicing in Vancouver, British Columbia.

Cindy Kam is a Family Medicine R1, University of Calgary, Calgary, Alberta.