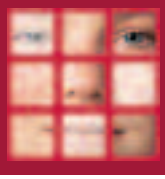
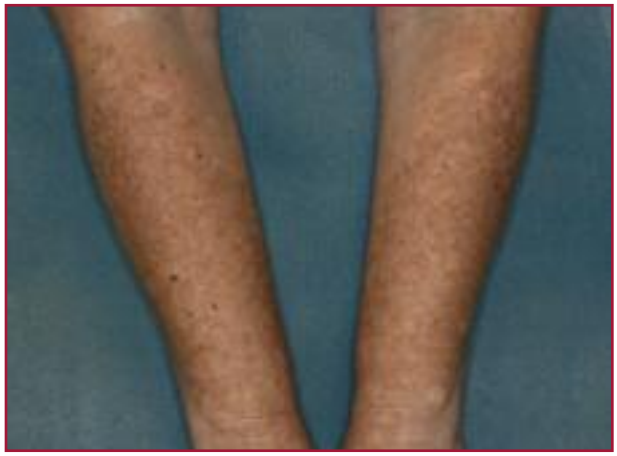


This month — 9 cases:

Case 1

Brown, Hyperpigmented Patches

A 53-year-old female presents with brown, hyperpigmented patches that extend across both forearms that have been present for almost a year. She has a history of moderate sun exposure.



What is your diagnosis?

a. Lichen planus
b. Post inflammatory hyperpigmentation
c. Melasma
d. Melanoma
e. Ephelides

Answer

Melasma **(answer c)** is a skin condition characterized clinically by hyperpigmented macules or patches that are caused by increased amounts of melanin in the epidermis, dermis, or both. This condition usually occurs on the upper lip, cheeks, forehead, or, as in this case, on the forearms. The pigmentation may vary depending, partly, on the location of the melanin: the location of the pigment may vary if the melanin is epidermal (brown), dermal (blue-grey), or mixed (brown-grey). Use of a Wood's light examination may help determine the location of the melanin, although this is unreliable, particularly in darker complected patients. When melanin is present in both the epidermal and dermal layers, pigmentation may appear increased in some areas and absent in others.

Melasma appears slowly over time without signs of inflammation and is typically light to dark brown in colour. The centrofacial pattern, involving the cheeks, forehead, upper lip, nose, and chin, is the most prevalent form of melasma. Melasma may be caused by sun exposure, pregnancy, or the use of oral contraceptives.

Treatment of melasma may include sunscreens and reassurance only or the use of topical bleaching agents, such as hydroquinone.

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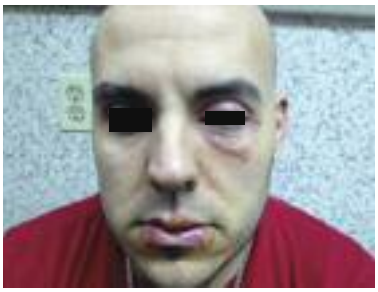
Case 2

Face Swelling



This 35-year-old gentleman presents to his general practitioner at an emergency appointment, because he is concerned about this spreading, non-itchy rash, which he has had three times during the last two years. His former doctor prescribed medication on a previous occasion, and it cleared up the lesions, but the patient does not recall what medication he was given. He is well, afebrile, and his past medical history is unremarkable apart from a previous appendectomy. His eye examination is unremarkable, with a visual acuity of 6/6 in both eyes. Diagnosis is confirmed after examining fluid expressed from the vesicles.

What is your diagnosis?

a. Herpes simplex viral infection
b. Eczema herpeticum
c. Varicella-zoster virus infection
d. Erythema multiforme

Answer

The answer is a recurrent form of herpes simplex infection **(answer a)**, which presents as grouped vesicles on an erythematous base that is usually preceded by prodrome of a tingling, itching, or burning sensation.

Herpes simplex virus infection (HSV) commonly affects young adults and is caused by either HSV-1 or HSV-2.

It is generally transmitted through skin-to-skin, skin-to-mucosa, or mucosa-to-skin contact.

Increased HSV-1 transmission is associated with crowded living conditions and lower socioeconomic status.

Diagnosis can be achieved by many tests:

1. **Direct microscopy with a Tzanck smear, optimally:** Fluid from an intact vesicle is smeared thinly on a microscope slide, dried, and stained with either Wright's or Giemsa's stain. The result is positive if acantholytic keratinocytes or multinucleated giant acntholytic keratinocytes are detected. In 75% of early cases, the test result is positive and either primary or recurrent.
2. **Antigen detection:** Monoclonal antibodies, especially for HSV-1 and HSV-2 antigens, detect and differentiate HSV antigens on smear from the lesion.
3. **Cultures:** Cultures from the involved mucocutaneous site or tissue biopsy specimens are positive for HSV.
4. **Serology:** Antibodies to glycoproteins I and II detect and differentiate past H1 and HSV-2 by demonstrating seroconversion.
5. **Polymerase chain reaction:** Polymerase chain reaction is used to determine HSV-DNA sequence in tissue, smears, or secretions.

Complications include ocular HSV infections, which are a major cause of corneal scarring and vision loss resulting from direct viral cytopathic effect and immune-mediated response. Continuous suppression therapy is recommended.

Herpetic facial paralysis occurs due to the reactivation of geniculate ganglion infection and is implicated in the pathogenesis of idiopathic facial palsy (Bell's palsy). HSV-1 shedding is detected in 40% of cases. Treatment is usually by acyclovir 400 mg t.i.d. for five days.

Recurrences of HSV tend to become less frequent with the passage of time.

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 General Practitioner in Mississauga, Ontario.

Case 3

Pink Eyebrow and Chest Patches

A 60-year-old, Caucasian male presents with scaly, itchy, pink patches on his eyebrows and chest. Upon examination, there is some scaling erythema on his eyebrows and polycyclic scaling lesions on his central chest. The patient notes that he does not have a history of heavy sun exposure.

What is your diagnosis?

a. Seborrheic dermatitis
b. Actinic keratosis
c. Nummular eczema
d. Psoriasis

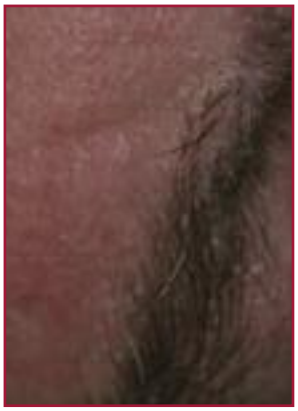


Figure 1: Scaling Erythema of the Eyebrow

Figure 2: Scaling Patch on Chest

Answer

Seborrheic dermatitis (SD) **(answer a)** is a common, chronic dermatosis characterized by red, scaling lesions in areas with sebaceous glands. Hence, the most common locations are the face, the presternal area, the scalp, and body folds. The lesions are often orange-red or grey-white and can occur as well defined papules, plaques, or macules. Lesions on the scalp have marked scaling, whereas lesions on the face and trunk are scattered and discrete, commonly occurring in annular, nummular, or polycyclic arrangements. SD may be associated with psoriasis as a prepsoriasis state, and when there is a combination of superficial scaling on the eyebrows and polycyclic lesions on the chest (as found with this case) it is often referred to as seborrhiasis. There are variations in the symptoms of SD: pruritus is exacerbated by perspiration and many symptoms are susceptible to the changing of seasons. Many patients find that their symptoms become worse in dry winter environments, and sun exposure causes symptoms to worsen in some patients, while offering improvement in others.

This common dermatosis affects 2 to 5% of the population, with the most common age of onset being between 20- and 50-years-old or within the first few months of infancy (commonly referred to as "cradle cap") or during puberty. The pathogenesis of SD has been linked to the fungus *Malassezia furfur.* Topical glucocorticoids, such as 1% hydrocortisone cream, are the mainstay of treatment for SD. Topical glucocorticoids, such as 1% hydrocortisone cream and an antiseborrheic shampoo, are the mainstay of treatment for SD.

Resources
1. Wolff K, Johnson RA: Fitzpatrick's Color Atlas & Synopsis of Clinical Dermatology. 6th ed. The McGraw-Hill Companies, Inc., New York, 2009, pp. 48–51.
2. Lebwohl MG, Heymann WR, Berth-Jones J, *et al*: Treatment of Skin Disease: Comprehensive Therapeutic Strategies. Harcourt Publishers Limited, London, 2002, pp. 585-586.

Ereni Neonakis is a Research Assistant in the Division of Dermatology at Dalhousie University and a Clinical Trial Co-ordinator at the Eastern Canada Cutaneous Research Associates in Halifax, Nova Scotia.

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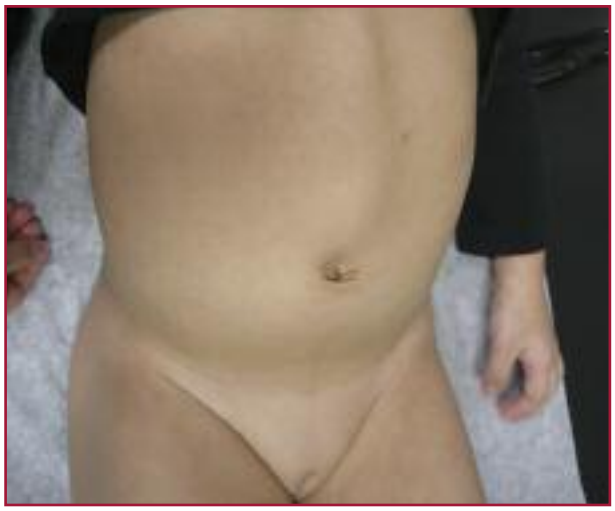
Case 4

An Abdominal Bulge

A healthy, two-year-old girl presents to the office for an annual physical exam. Upon lifting her legs while she is in the supine position, an abdominal bulge in her midline is noted.



What is your diagnosis?

a. Umbilical hernia
b. Epigastric hernia
c. Diastasis recti
d. Omphalocele

Answer

Diastasis recti **(answer c)** is due to weakness and separation of the left and right portions of the rectus abdominis muscle, which creates a bulge in the midline of the abdomen. The weakness in the abdominal wall is made apparent with increased intra-abdominal pressure. It is a common, benign condition found in newborns and young children, and it resolves spontaneously with age as the rectus abdominis muscle continues to grow. One serious complication is that patients with diastasis recti are more prone to hernias, which then need to be treated surgically if the loop of bowel becomes trapped between the separated muscle.

Joyce Lui, BHSc (Hons.), is a Medical Student at the University of Calgary in Calgary, Alberta.

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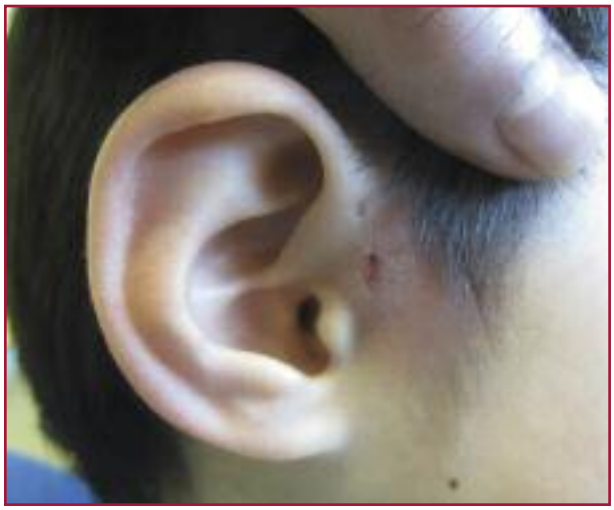
Case 5

Swelling over the Preauricular Area

A previously healthy, four-year-old boy presents with acute swelling and redness just inferior to a congenital ear pit.



What is your diagnosis?

a. Bronchogenic cyst
b. Accessory tragus
c. Thyroglossal duct cyst
d. Infected preauricular cyst

Answer

The patient has an infected preauricular cyst **(answer d)**. Preauricular pits and sinus tracts may develop as a result of imperfect fusion of the tubercles of the first two branchial arches. Unilateral or bilateral, these lesions present as small pits that may become infected or result in chronic preauricular ulcerations, retention cysts, or both, necessitating surgical excision.

Bronchogenic cysts present early, usually at birth, as a nodule or draining pit, usually over the suprasternal notch. These lesions usually develop from ectopic elements of the tracheobronchial tree or may represent ectopic branchial cleft cysts. Surgical excision is the treatment of choice.

Accessory tragi are fleshy papules, with or without a cartilaginous component, that contain epidermal adnexal structures. Usually seen in the preauricular area, they may also occur on the neck (anterior to the sternocleidomastoid muscle). Although generally seen as an isolated congenital defect, they may be associated with other branchial arch syndromes (*e.g.,* oculoauriculovertebral or Goldenhar syndrome).

Thyroglossal duct cysts are located on or near the neck midline, and they may open onto the skin surface, extend to the base of the tongue, or drain into the pharynx. They present clinically as midline neck cysts that move with swallowing. The lesions represent the persistence of the embryonic structure associated with normal thyroid descent and, occasionally, ectopic thyroid tissue.

The treatment of choice for thyroglossal duct cysts is surgical excision; however, care must be exercised to preserve aberrant thyroid tissue to prevent postsurgical hypothyroidism.

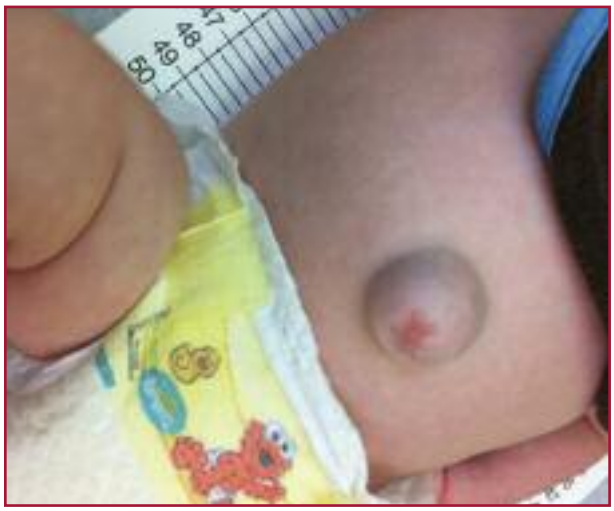
Naomi Bradley is a Final Year Medical Student at the University of Leicester in Leicester, United Kingdom.

Joseph M. Lam, MD, FRCPC, is a Clinical Assistant Professor of Pediatrics and Associate Member of the Department of Dermatology and Skin Sciences at the University of British Columbia in Vancouver, British Columbia.

Case 6

Umbilical Bulge in an Infant

A two-month-old male infant is brought to the office for a checkup. An asymptomatic bulge at the umbilicus is noticed during examination. Otherwise, he is feeding well, and his weight is normal for his age.



What is your diagnosis?

a. Ascites
b. Umbilical hernia
c. Umbilical granuloma
d. Umbilical polyp

Answer

Umbilical hernias **(answer b)** are common in infants. This happens when the umbilical ring, a fascial opening that allows the passage of umbilical vessels from mother to fetus, does not close spontaneously. Complete closure occurs in almost all children by age five and many umbilical hernias resolve before a child's first birthday. This may take longer in dark-skinned children.

Umbilical hernias are generally asymptomatic. Rarely, hernias containing bowel can interfere with feeding. An umbilical hernia is more prominent and noticeable with increased intra-abdominal pressure when a baby cries. Umbilical hernias are easily reducible and rarely incarcerated.

Conditions that can be associated with umbilical hernia include hypothyroidism, Down syndrome, trisomy 18, Ehlers-Danlos syndrome, and Beckwith-Wiedmann syndrome.

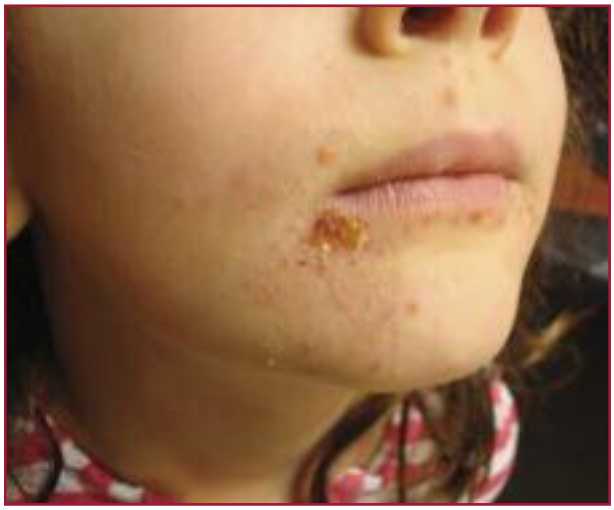
In the majority of cases, observation alone is sufficient, as the natural course of umbilical hernia is spontaneous closure. The need for surgery is rare. Incarceration (demonstrated by symptoms of pain, vomiting, tender hernia site with colour change) is an absolute indication for emergency surgery. Children with big hernias, whose umbilical ring defect does not reduce in size in two years, generally require surgical closure.

Cherinet Seid, MD, LMCC, CCFP, DTM (RCPS Glas), is the Lead Physician with the North Renfrew Family Health Team, Deep River, Ontario. He is also an Emergency Physician at Deep River and District Hospital and an Assistant Professor at the Northern Ontario School of Medicine in Sudbury, Ontario.

Case 7

A Rash on the Face

A five-year-old girl presents to the clinic with a rash on her face. Her father says it began a few days ago as small pustules around her mouth. She has also had a mild cough and runny nose over the last week, which now seem to be improving. Her father has been applying bacitracin/polymyxin ointment to the affected areas.



What is your diagnosis?

a. Insect bites
b. Impetigo
c. Contact dermatitis
d. Herpes simplex virus
e. Varicella zoster

Answer

Impetigo **(answer b)** is a very common skin infection in children. It is caused by bacteria, usually *Staphylococcus aureus* or *Streptococcus pyogenes*. The lesions appear as blisters or pustules on the face, neck, arms, and legs, and they also affect the diaper area in infants. Skin that is already irritated with rashes or cuts is more likely to develop impetigo.

There are three types of impetigo. Bullous impetigo is caused when *S. aureus* releases toxins that form painless blisters. The surrounding skin becomes red and itchy. The blisters do not burst, and they heal without leaving a scar. A second form of impetigo is ecthyma, which consists of painful, fluid- or pus-filled sores located on the arms and legs. These develop into ulcers that spread deep into the dermis and rupture, creating a hardened, grey-coloured scab, which leaves a scar. The lymph nodes of the affected area may become swollen in this type of impetigo. The final and most common type of impetigo is the nonbullous type. This consists of small, red blisters that rupture and leave a weepy exudative surface. The lesions eventually develop a layer of crust, classically described as "honey coloured," and they heal without leaving a scar. These lesions are itchy and painless.

Impetigo is a very contagious bacterial skin infection. Good hygiene practices, such as regular hand washing with antibacterial soap and daily bathing, are important in preventing the spread of impetigo. The infected area should be covered to prevent spread of infection and cleansed with antiseptic soap. Soaking in warm, soapy water will help remove the layers of crust. In non-bullous impetigo, or if a small area is affected, a topical antibiotic, such as mupirocin 2%, can be prescribed. This is applied two or three times daily for about five days. For larger areas or more severe infections, oral antibiotics, such as amoxicillin 500 mg t.i.d. or cefalexin 500 mg q.i.d for 7 to 10 days, can be prescribed.

Kimmy Goyal, MD, CCFP, ABFM, is a Family Doctor in Brampton, Ontario.

Fenny Goyal, MD, is a Qualitative Researcher at Li Ka Shing Institute in Toronto, Ontario.

Case 8

A Darkened, Brown Nail

A healthy, 12-year-old, Asian girl presents with a darkened, brown nail on her left index finger with a black, linear streak extending from the nail bed to the fingertip along the midline. She reports that these findings have been present since she was three-years-of-age.

What is your diagnosis?

a. Subungual hematoma
b. Melanocytic nevus
c. Subungual melanoma
d. Melanonychia striata

Answer

Melanonychia striata **(answer d)** is caused by an increase in the activity of melanocytes in the nail matrix, which produces an increase in melanin deposition in the nail plate. The presentation can range from a narrow, longitudinal streak to almost complete pigmentation of the nail plate. The discolouration can be tan, brown, or black. This condition is benign and more commonly found in more deeply pigmented races. Melanonychia striata may occur spontaneously or as a result of trauma, irradiation, or treatment with gold or cytotoxic agents.

A subungual hematoma will migrate distally as the nail grows. A subungual melanoma should be suspected if there is an abrupt onset after middle age, rapid growth, variegated colouring, blurry edges, irregular elevation of the surface, nail dystrophy, and Hutchinson's sign, whereby the proximal and/or lateral nail beds may also be pigmented in addition to the nail proper.

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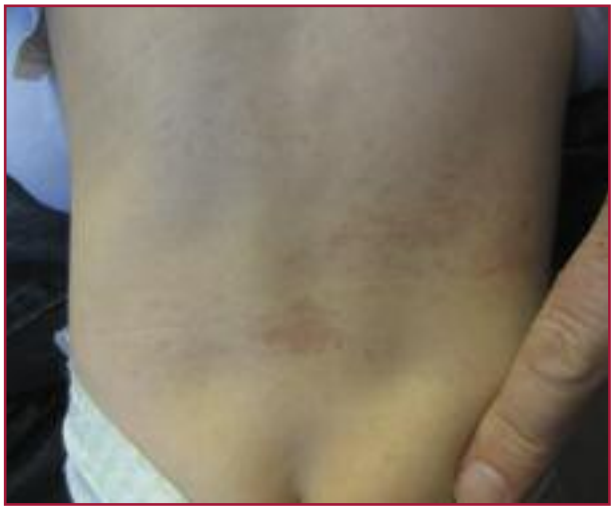
Case 9

A Red Patch on the Back

This two-year-old girl presents with a flat, red patch on the right lower back.



What is your diagnosis?

a. Port wine stain
b. Hemangioma of infancy
c. Erythema ab igne
d. Erythema marginatum

Answer

A port wine stain (PWS), or nevus flammeus, **(answer a)** is a congenital, vascular malformation made up of capillary ectasias that may be present throughout the dermis and that gradually increase with age. The colour changes from pink to purple as the patient grows, and the lesions may become nodular during adult life. They show no tendency to involute. The most common site of involvement is the face, although they may occur on any cutaneous surface. PWS may occur in association with syndromes such as Sturge-Weber syndrome.

Hemangioma of infancy is a vascular tumour and is the most common benign, soft tissue tumour of childhood. These tumours occur in a variety of sizes, locations, and degrees of combination of capillaries, larger vessels, and venous lakes. These lesions are usually differentiated from PWS by the rapid proliferation and thickening that characterizes hemangiomas during the first year of life. They tend to resolve spontaneously.

Erythema ab igne is characterized by a mottled appearance of the skin with reticular erythema and brown pigmentation, that is produced by prolonged or repeated exposure to moderately intense, but non burning, heat.

Erythema marginatum is a distinctive form of annular erythema that occurs on the trunk (especially on the abdomen) and the proximal extremities in 4 to 10% of patients with rheumatic fever. Lesions are evanescent, pink macules or papules that fade centrally in a few hours to several days, leaving a pale, or sometimes pigmented, centre.

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