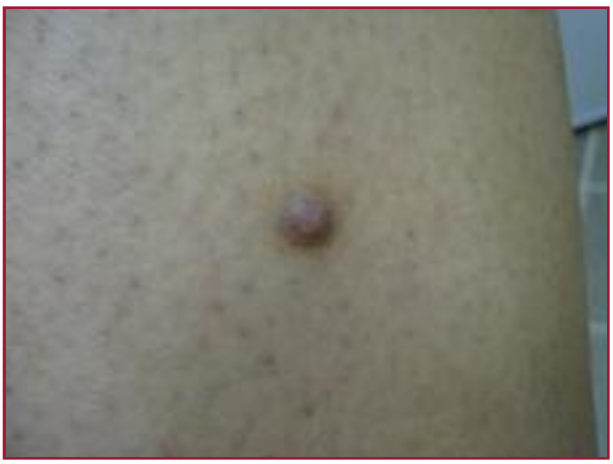
This month – 13 cases:

Case 1

Enlarging, Firm Nodule

A 36-year-old female presents with an asymptomatic, firm nodule of several years duration on her leg. She thinks the papule is slowly enlarging.



What is your diagnosis?

a. Dermatofibroma
b. Spitz nevus
c. Compound nevus
d. Dysplastic nevus
e. Juvenile xanthogranuloma

Answer

A dermatofibroma **(answer a)** is a benign, firm tumour of the skin. It is generally observed on the lower legs, though it can be found elsewhere. These lesions often start out red in colour and eventually become brown. They are typically asymptomatic, though occasionally tenderness may be experienced. Clinical examination often reveals a "dimple/Fitzpatrick sign" to lateral compression, and dermoscopy performed by a dermatologist is very useful to clinch the diagnosis.

The precise mechanism for development of a dermatofibroma is uncertain. Historically, it was thought to be due to a minor trauma, such as a mosquito bite or ingrown hair, but increasingly it is felt to be a clonal proliferative growth, akin to a neoplastic process but with a benign, natural history.

These lesions are more common in women and in young adulthood. Occasionally the diagnosis is uncertain, hence biopsy is warranted. Lesions can be treated safely with liquid nitrogen, cryotherapy, or simple excision.

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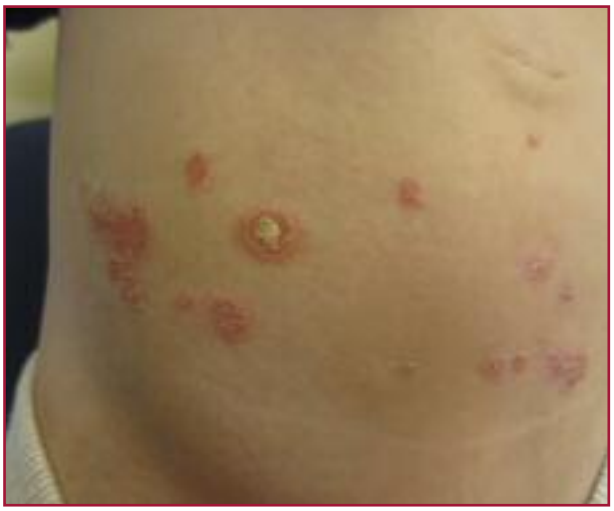
Case 2

Red, Scaly Plaques on the Abdomen

A two-year-old girl presents with multiple red and scaly plaques on her abdomen.



What is your diagnosis?

a. Guttate psoriasis
b. Impetigo
c. Scabies
d. Nummular dermatitis
e. Granuloma annulare

Answer

Guttate psoriasis **(answer a)** is the acute eruption of multiple, small psoriatic lesions, and it typically occurs in children and young adults. It presents as erythematous, drop-like, scaling papules and plaques, measuring 2 to 10 mm, with lesions distributed symmetrically over the trunk and proximal extremities. Guttate psoriasis is commonly associated with a preceding group A *Streptococcus* infection of the oropharynx or perianal area, and it usually manifests two to three weeks following the infection. The lesions often resolve spontaneously; treatment options for refractory guttate psoriasis include topical corticosteroids or UVB phototherapy.

Impetigo is a superficial skin infection by *Streptococcus* or *Staphylococcus* that most commonly occurs on exposed sites of the body. The lesions may present with a honey-coloured crust (non-bullous form) or with thin-walled bullae or erosions (bullous form).

Scabies is a skin infestation by the mite *S. scabiei*, which burrows into the skin, depositing feces and eggs. In children, the most common sites involved are the interdigital spaces, wrists, and waist. Intense pruritus is often the initial presenting complaint.

Nummular dermatitis is characterized by well-demarcated, coin-shaped plaques on the extensor surfaces of the hands, arms, and legs, with surrounding xerosis. Again, most patients experience pruritus and some may develop secondary Staphylococcal infections.

Granuloma annulare is characterized by annular, non-scaly plaques with borders comprised of multiple small papules. It often involves the hands, feet, wrists, and ankles. The etiology of granuloma annulare is unknown, but it is thought to be associated with diabetes mellitus, tetanus and Bacille Calmette-Guérin vaccinations, and certain infections and hematologic malignancies.

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Case 3

Lesion Left after Excision

A 27-year-old male had a cyst excised a few years ago and is not happy with the lesion that remains.

What is your diagnosis?

a. Cyst recurrence
b. Keloid scar
c. Hypertrophic scar
d. Ice pick scar
e. Box-car scar

Answer

The patient has a hypertrophic scar **(answer c)** with "rail road tracking." A hypertrophic scar is a thick scar that develops in a site where there is increased tension and, more commonly, if a wound or scar site becomes infected. It is typically less thick, red, and symptomatic compared to a keloid scar, which typically spreads beyond the wound site. Areas such as the chest, shoulders, and upper back are particularly prone to both hypertrophic and keloid scars.

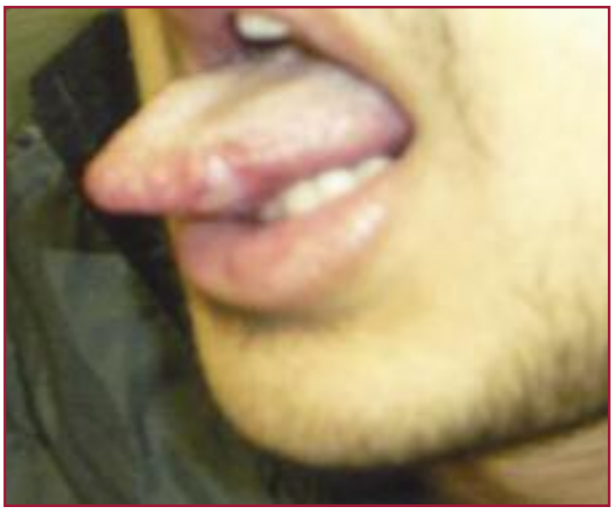
These scars are a cosmetic nuisance and occasionally can be itchy or tender. Treatment options include cryotherapy, intralesional triamcinolone acetonide, surgical re-excision, topical silicone gel sheeting, and laser therapy.

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

Case 4

Painful Tongue Lesion

A 13-year-old boy presents with a painful lesion on the lateral aspect of the left side of the tongue. He had a similar oral lesion six-months-ago. Otherwise, he is in good health.



What is your diagnosis?

a. Hand, foot, and mouth disease
b. Aphthous stomatitis
c. Herpangina
d. Reiter's disease

Answer

Aphthous stomatitis **(answer b)** is one of the most painful ulcerative conditions affecting the oral mucosa. Most cases are idiopathic. Recurrence is the hallmark of the disease. Typically, aphthous stomatitis presents as round or ovoid ulcers with circumscribed margins, erythematous halos, and yellow or grey floors in the oral cavity. Aphthous stomatitis can be classified according to the clinical characteristics of the ulcers as minor, major, and herpetiform. Minor aphthae accounts for 80 to 85% of all aphthae. Minor aphthous ulcers are superficial in nature, small in size (< 1 cm in diameter), and few in number (< 3). Major aphthae are deeper and larger (> 1 cm) than minor aphthae, as is illustrated in the present case. Herpetiform aphthae are the least common variety and are characterized by multiple recurrent crops of 10 or more small ulcers of 1 to 3 mm in diameter, which may coalesce into larger, irregular ulcers.

The diagnosis is mainly clinical. Simple measures to maintain good oral hygiene are important for symptom relief. Chlorhexidine gluconate mouthwash has been used to decrease mucosal pain and to prevent secondary infection of the ulcers. Topical analgesics, such as lidocaine, polidocanol, or benzocaine can be used for pain relief. Systemic ibuprofen or acetaminophen can be used, if necessary. Topical corticosteroids, such as triamcinolone acetonide and clobetasol propionate, are the mainstay of treatment.

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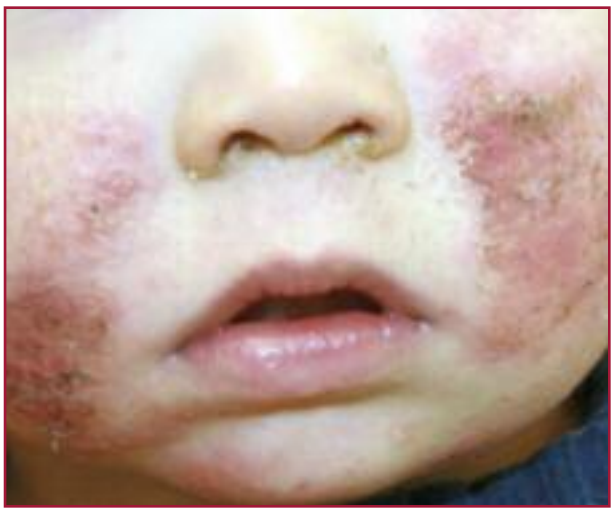
Case 5

Erosive, Crusted Skin on Cheeks

A 12-month-old boy is brought to the clinic by his mother because of itchy, erythematous, red, erosive, crusted skin over both cheeks of two months duration. The skin around his mouth is characteristically normal.



What is your diagnosis?

a. Perioral dermatitis
b. Contact dermatitis
c. Infantile atopic dermatitis
d. Infantile seborrheic eczema

Answer

Infantile atopic dermatitis **(answer c)** can present as an acture or subacute, usually chronic, pruritic inflammation of the epidermis and dermis, often associated with a personal or family history of hay fever, asthma, allergic rhinitis, and conjunctivitis. It is slightly more common in boys than in girls. Onset usually occurs in the first two months of life and by the first year in 60% of patients. In 30% of patients, they are seen for the first time by the age of five, with only 10% developing atopic dermatitis between 6- and 20-years-of-age. Mental stress can be an important factor. Remission occurs by the age of 15 in 75% of patients, although some patients relapse later than this.

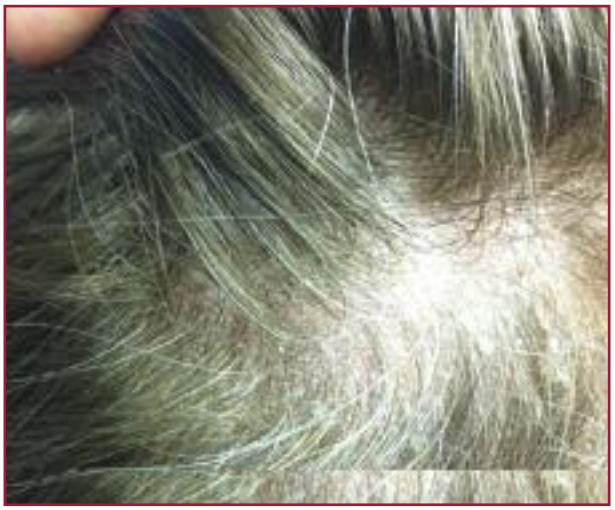
The appearance of atopic dermatitis differs depending on the age of the patient. Babies develop an itchy, vesicular, exudative eczema on the face and hands, often with a secondary infection. Less than half continue to have eczema beyond 18 months. After 18 months, the pattern often changes to the familiar involvement of the antecubital and popliteal fossae, neck, wrists, and ankles. The most common manifestation, hand dermatitis, which is exacerbated by irritants in someone with a past history of atopic dermatitis, occurs in adult life. However, a small number of adults have a chronic, severe form of generalized and lichenified atopic dermatitis, which may interfere with their employment and social activities.

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

Case 6

Scaly Lesions on the Scalp

This 51-year-old female with generalized, pruritic, scaly lesions on the scalp, associated with some hair loss over a period of a few months, presents to the clinic. She has no lesions on other areas of her body.



What is your diagnosis?

a. Psoriasis
b. Seborrheic dermatitis of the scalp
c. Impetigo
d. Tinea capitis

Answer

Seborrheic dermatitis (SD) of the scalp **(answer b)** is a chronic, recurrent problem. Affected individuals are mostly healthy, although SD is sometimes associated with HIV, Parkinson's disease, and with the use of neuroleptic medications.

The cause of SD is not clearly known —— sebaceous glands and malassezia (normal skin saprophyte) may play a role. Dandruff is the most common symptom and may indicate a mild form of scalp SD, especially if white, scaly lesions are also present. Severe forms of scalp SD have an erythematous base. Symptoms include pruritis and hair loss. Diagnosis is clinical.

Treatment includes antifungal shampoos (selenium sulfide, ketoconazole, or cicloprix) for daily use or at least three times per week until remission is achieved.

Topical corticosteroids can be added for two to four weeks to control inflammation and itching. Mild form (dandruff) can be treated using over the counter shampoos that contain selenium sulfide, coal tar, zinc pyrithione, or salicylic acid. Difficult to treat SD that does not respond to the above agents may respond to oral antifungal agents. Itraconazole at 200 mg q.d. for one week has been known to have better results.

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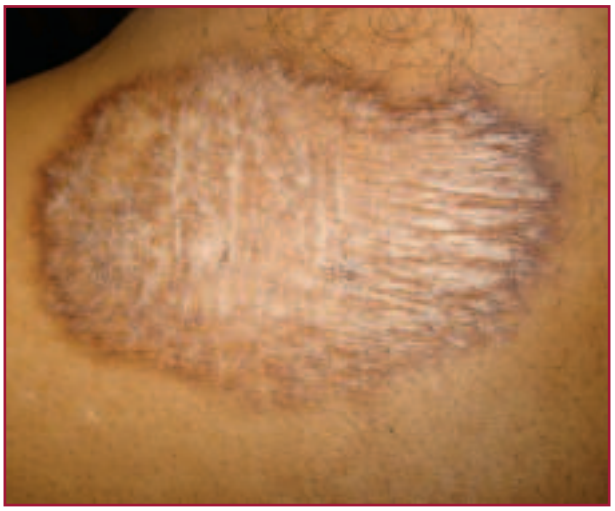
Case 7

Large Plaque on the Shoulder

A 45-year-old male presents with a large plaque on his left posterior shoulder. It began as a few small papules that slowly coalesced into this large plaque. The lesion is mildly pruritic.



What is your diagnosis?

a. Lichen planus
b. Vitiligo
c. Morphea
d. Lichen sclerosus et atrophicus

Answer

Lichen sclerosus et atrophicus (LSA) **(answer d)** is a chronic, inflammatory condition that affects mostly the anogenital area, but it can also involve extragenital regions. Extragenital LSA usually involves the neck, shoulders, thighs, and flexor areas of the wrists. The exact etiology is uncertain, but there is mounting evidence to suggest an autoimmune mechanism. Females are predominantly affected.

Extragenital LSA usually presents as small, polygonal, whitish papules. These papules expand and coalesce into patches and plaques. They evolve into well demarcated, whitish, scar-like lesions, with a wrinkled appearance. Dark skinned patients can experience hyperpigmentation instead. Follicular plugs, telangiectasias, and bullae may be present in some circumstances. These lesions are usually asymptomatic but may be mildly pruritic.

Extragenital LSA is a benign condition; however, its progression, which involves larger areas, is often unpredictable. The decision to treat is usually based on the presence of symptoms or the degree of cosmetic distress. The first line of treatment is usually a potent topical corticosteroid, such as clobetasol 0.05% cream. Other treatment options include topical calcineurin inhibitors, such as pimecrolimus and tacrolimus, topical calcipotriol, and physical therapies, such as phototherapy.

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Case 8

Asymptomatic Rash on the Back

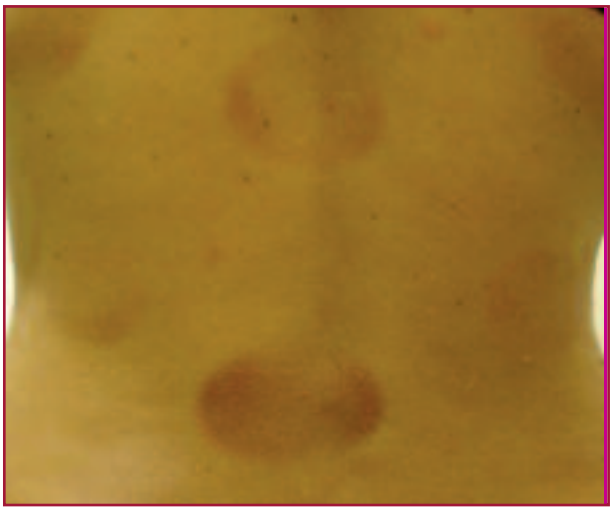
This 30-year-old woman was told she had a rash on her back. The duration is unknown, and she is asymptomatic.

What is your diagnosis?

a. Side-effect of 'cupping'
b. Tinea versicolor
c. Parapsoriasis
d. Tinea corporis
e. Pityriasis rotunda

Answer

Pityriasis rotunda **(answer e)** is a relatively rare condition usually seen in adults between the ages of 25 to 45. Most patients are of Far Eastern, Mediterranean, or African descent. Lesions are large, often > 10 cm in diameter, and they are circular with fine scaling, no inflammation, and a sharp border. Most often, they present on the trunk or extremities. Two types have been described.



Type 1 presents as skin coloured in Asian persons. It is usually more hyperpigmented and possibly associated with internal malignancy or infection, especially hepatic or gastric cancer and tuberculosis. Malnutrition may be a factor in these individuals.

Type 2 is more commonly seen in Caucasians with more lesions generally present, a family history of the condition, and no risk of malignancy. Tinea corporis, tinea versicolor, and parapsoriasis should be ruled out.

Treatment with keratolytics, lubricants, and retinoids have not been effective. Regression has been noted where an associated cause has been found and treated.

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

Case 9

Band-like Eruption on the Torso

This 55-year-old woman has had this band-like eruption on her torso for one year. It is asymptomatic.

What is your diagnosis?

a. Lymphoma
b. Granuloma annulare
c. Dermal tumours
d. Urticaria
e. Contact dermatitis

Answer

Granuloma annulare **(answer b)** may appear in a variety of forms and patterns making the diagnosis less obvious. This case is more papular but with the suggestion of annulare features. The condition itself is idiopathic. It involves dermal and subcutaneous tissue. It may involve all ages with a female predominance of 2:1. The generalized forms tend to present in the 50- and 60-year age group. The course is variable with remission and recurrence.

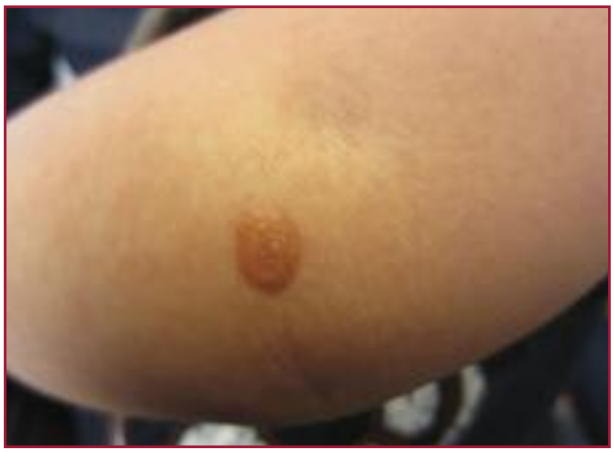
Treatment results are inconsistent, whether topical or systemic. Topical or intralesional steroids serve best for localized involvement. Diffuse or widespread cases are usually treated by several modalities, alone or in combination. These include ultraviolet light, retinoids, dapsone, doxycycline, antimalarials, and pentoxifylline amongst others.

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

Case 10

Yellowish-brown Elbow Nodule

A two-year-old boy presents with a yellowish-brown nodule over the left elbow. It has been present since he was a few months of age. When rubbed, it does not change.



What is your diagnosis?

a. Juvenile xanthogranuloma
b. Nevus sebaceous
c. Planar xanthoma
d. Mastocytoma
e. Verrucae planae

Answer

Juvenile xanthogranuloma (JXG) **(answer a)** is a benign, self-limited, non-Langerhans cell histiocytosis of infants, children, and occasionally adults. It is usually solitary (in up to 90% of all cases) and presents as a firm, round, erythematous to orange-coloured papule or nodule that becomes yellow with time. Lesions vary in size from 5 mm to 2 cm. They are found most commonly on the head, neck, and trunk and usually present at birth (20% of cases) or during the first six months of life. The eye is an important extracutaneous organ that can also be involved, with complications that include hyphema, glaucoma, or blindness. JXGs usually achieve spontaneous regression over three to six years, although anetoderma-like changes, or skin atrophy, may persist in affected areas.

Nevus sebaceous is a common, congenital lesion occurring mainly on the face and scalp. Lesions present as well-circumscribed, hairless plaques. Nevus sebaceous is considered a developmental defect and is thus usually noted during early childhood. Its yellow colour is related to the presence of sebaceous glands. The lesion tends to enlarge proportionately to growth until puberty when they become thicker, more verrucous, and greasy from hormonal stimulation of the sebaceous glands. Surgical excision is the treatment of choice out of concern for the development of secondary malignant lesions.

Planar xanthomas are yellow to orange deposits in the skin that present as soft, flat macules or slightly elevated plaques. They are associated with familial dysbetalipoproteinemia, but they can also be seen in individuals with very high LDL cholesterol, usually secondary to an underlying genetic disorder. The most common presentation of planar xanthomas occurs on the eyelid, and is also referred to as xanthelasma.

Mastocytomas are part of the clinical spectrum of childhood mastocytosis. They are relatively common and present with solitary or multiple flesh-coloured to yellow-orange-tan papules or plaques. They range from a few millimeters to several centimeters in size and present at birth in 40% of patients. They have a positive Darier's sign (firmly stroking the lesion causes edema and erythema). They can occur anywhere on the body, but they are most frequently found on the arms, neck, and trunk.

Verrucae planae (flat warts) occur primarily on the face, neck, arms, and legs. They typically present as smooth, flesh-coloured to slightly pink or brown, flat-topped papules. They can range from 2 to 5 mm in diameter and vary from a few lesions to several hundred in any given individual. Linear arrangements of the papules in areas of scratching (koebnerization) is a characteristic feature of flat warts.

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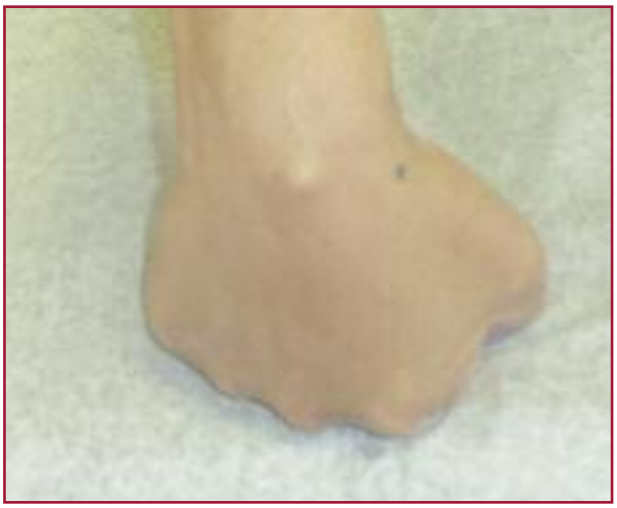
Case 11

A Mass on the Dorsum of the Wrist

A 12-year-old boy presents with a mass on the dorsum of the right wrist. The lesion is asymptomatic. There is no history of trauma to the affected area, decreased mobility of the right wrist, or weakness of the right hand.



What is your diagnosis?

a. Sebaceous cyst
b. Dermoid cyst
c. Lipoma
d. Ganglion

Answer

A ganglion **(answer d)** is a cystic swelling that typically arises from the synovium of either a joint capsule or tendon sheath. The cyst contains a clear, gelatinous, colloid material, or a thick mucinous fluid. The latter contains hyaluronic acid and other mucopolysaccharides. The fluid is surrounded by a dense network of collagen fibres and fibrocytes. The most common sites include the dorsum of the wrist and the dorsum of the foot, although ganglion cysts may occur throughout the body. Ganglion cysts seldom emanate from within the joint itself; the incidence of intra-articular lesions has been reported to be 0.2 to 1.6% on magnetic resonance imaging. Ganglia are often asymptomatic. Occasionally, there might be localized pain, paresthesia, limitation of motion, or weakness of the involved area. The condition can be complicated by carpal tunnel syndrome.

No treatment is necessary, since most cases resolve spontaneously. Treatment is indicated if the ganglion is large, causes pain, or interferes with normal tendon function. Treatment options include needle aspiration or surgical excision.

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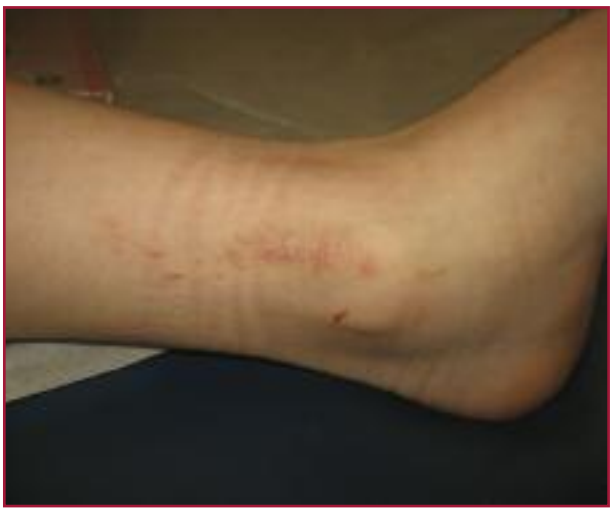
Case 12

Unilateral Dermatitis on Lower Leg

A four-year-old girl presents with linear erythematous, nonpruritic papules over the lower leg, which have been present for the past four weeks. These are unresponsive to a mid-potency topical steroid.



What is your diagnosis?

a. Linear psoriasis
b. Lichen planus
c. Epidermal nevus
d. Varicella zoster
e. Lichen striatus

Answer

Lichen striatus **(answer e)** is a benign, self-limiting, and usually unilateral dermatitis of unknown origin that generally affects children. It often presents with a curvilinear band of small, flat-topped, pink, or flesh-coloured papules. In dark-skinned individuals, the eruption may appear slightly scaly. The extremities are most often affected; however, the face, neck, trunk, and buttocks can also be involved. The eruption tends to follow Blaschko's lines and is often asymptomatic, reaching its peak within a few weeks to months. No therapy is needed, because it usually resolves within 3 to 12 months and leaves behind an area of hypopigmentation that subsequently disappears.

Linear psoriasis is a rare form of psoriasis that is characterized by a linear distribution of a psoriatic lesion along Blaschko's lines. Patients with localized psoriasis should thus be examined to detect possible psoriatic lesions elsewhere.

Lichen planus is a skin condition that is characterized by small, shiny, polygonal, flat-topped, violaceous papules, and they may form secondary to trauma (Koebner effect) or spontaneously. Affected areas are distributed along Blaschko lines.

Lichen planus is generally pruitic and is diagnosed clinically. Spontaneous resolution usually occurs in 8 to 15 months, but most patients experience the lesion appearing in an area of hyperpigmentation that may persist for months to years. Treatment generally requires topical corticosteroids.

Epidermal nevi are benign, congenital lesions characterized by hyperplasia of epidermal structures. They are usually apparent at birth or become noticeable during early childhood. They most often appear on the extremities, although they may occur anywhere on the cutaneous surface. Epidermal nevi are usually distributed along Blaschko's lines; however, a single epidermal nevus can be present. They are challenging to treat, because they have a high rate of recurrence after superficial treatments.

Varicella zoster is an acute, vesicular, and erythematous eruption clustered in a dermatomal distribution of a sensory nerve. It is caused by reactivation of a latent infection with the varicella-zoster virus. Before any skin findings are present, patients complain of hyperesthesia and pain, as well as tenderness in the affected area. It is most commonly seen in the elderly or immunosuppressed individuals; however, it can occur in children. Special attention should be paid to infection of the ophthalmic branch of the trigeminal nerve, as this can cause permanent damage. Treatment is symptomatic with antivirals.

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Case 13

Maculopapular Arm Rash

This 55-year-old female patient presents with a one week history of a pruritic, macular, papular rash that worsens with sun exposure. She has seropositive rheumatoid arthritis and has been taking methotrexate 25 mg subcutaneous injections weekly for the past two months. Previous to this, she was using intramuscular gold injections for ten months. She is also taking 5 mg of folic acid weekly.

What is your diagnosis?

a. Cutaneous manifestation of rheumatoid arthritis
b. Methotrexate rash
c. Gold rash
d. Sun rash

Answer

Gold rash **(answer c)** is the most common adverse effect seen with chrysotherapy.

Gold has been used to treat rheumatoid arthritis since 1929. Its indications also include psoriatic arthritis, ankylosing spondylitis with polyarthritis, and juvenile idiopathic arthritis. However, its use has been declining in the past few decades due to a number of potential side effects and the increasing use of other disease-modifying antirheumatic drugs, especially methotrexate and biologics.

After gold is injected, it is deposited in every cell of the body, with the skin being one of the organs that receives the greatest concentrations. It may seem surprising that this patient developed a gold rash two months after the discontinuation of therapy; however, the drug has a fairly long half-life. Approximately 75% of the drug is retained in the body after an initial dose, and it can still be found in the urine months after discontinuation.

Gold rashes can be quite variable; however, they are typically macular or maculopapular photosensitive rashes affecting the limbs and/or trunk. Generalized pruritus often precedes and accompanies the rash.

Figure 1: Maculopapular Pruritic Rash

Figure 2: Close-up of Rash

Treatment should be stopped if a gold rash develops, as it may lead to chronic exfoliative dermatitis. Nonetheless, if pruritus occurs in the absence of a rash, treatment may be continued. Even after therapy is discontinued, the rash usually lasts one to two months. Patients should be instructed to stay out of the sun and to avoid using harsh soaps. Antihistamines or topical corticosteroids may also improve patient symptoms. Chrysotherapy may be resumed at a smaller dose after the rash clears.

Resources

1. Gordon DA: Major Side Effects of Gold (2012). In: UpToDate, Basow, DS (Ed), UpToDate, Waltham MA. http://www.uptodate.com.normedproxy.lakeheadu.ca/contents/major-side-effects-of gold?source=search_result&search=gold+rash&selectedTitle=1%7E150. Accessed May 25, 2012
2. Gordon DA: Use of Gold Compounds in Rheumatic Diseases (2012). UpToDate, Basow, DS (Ed), UpToDate, Waltham MA http://www.uptodate.com.normedproxy.lakeheadu.ca/contents/use-of-gold-compounds-in-rheumatic diseases?source=search_result&search=use+of+gold+compounds+in+rheumatic+diseases&selectedTitle=1%7E150. Accessed May 25, 2012.
3. Almeyda J, Baker H: Quarterly Review, Drug Reactions XII, Cutaneous Reactions to Anti-rheumatic Drugs. British Journal of Dermatology, 1970; 83(6):707–711.
4. Lexi-Comp: Gold Sodium Thiomalate: Drug Information. http://www.uptodate.com.normedproxy.lakeheadu.ca/contents/gold-sodium-thiomalate-druginformation?source=search_result&search=gold+sodium+thiomalate&selectedTitle=1%7E12. Accessed May 25, 2012

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