



This month – 9 cases:

- | | | | |
|------------------------------------|------|------------------------------|------|
| 1. Skin Changes on the Forehead | p.29 | 5. A Unilateral Rash | p.36 |
| 2. Small Foot Growths | p.30 | 6. Golden Coloured Plaques | p.38 |
| 3. Circumscribed Hyperpigmentation | p.32 | 7. Thick, Scaly Elbow Plaque | p.39 |
| 4. White Lesions on the Penis | p.34 | 8. Dark Chest Patch | p.40 |
| | | 9. Red, Round Spots | p.41 |

Case 1

Skin Changes on the Forehead

This 66-year-old man has noted progressive changes of the skin on his forehead over the past 10 years.

What is your diagnosis?

- Sebacous hyperplasia
- Nevus sebaceous
- Solar dermatitis
- Solar elastosis
- Worry lines

Answer

Solar elastosis (**answer d**) represents one of several photoaging changes of the skin induced by chronic sun exposure. It is most commonly seen in Caucasians with particularly fair complexions who do not tan easily.



Solar elastosis of the forehead is characterized by thickening of the skin and a yellow discoloration. When it occurs on the neck, the thickening is more prominent with deeper furrows and is termed cutis rhomboidalis nuchae. These changes are due to dermal elastosis. There is no practical treatment.

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Case 2

Small Foot Growths

A 62-year-old female presents with an asymptomatic skin lesion over her big toe that has been slowly growing over the last month (see Figure 1).

A 56-year-old male presents with rough, crusty lumps that are tender and sore on the bottom of his feet. They have been slowly growing over the last year (see Figure 2).

What is your diagnosis?

- a. Plantar warts
- b. Corns
- c. Calluses
- d. Psoriasis

Answer

Plantar warts (**answer a**) are small growths that develop on the skin, which appear when the skin is infected by a virus. Warts can develop anywhere on the foot, but they typically appear on the bottom (plantar side) of the foot. Plantar warts most commonly occur in children, adolescents, and the elderly. They are caused by direct contact with the human papilloma virus (HPV). This is the same virus that causes warts on other areas of the body. These uncomfortable growths thrive on warm, moist surfaces, such as those found in swimming pools, locker rooms, and bathrooms. It is a highly contagious pathogen and can survive for several months without a human host. The only way to catch HPV is by direct contact, and the viral route is through cuts, abrasions, and other skin breaks on the feet. Children and people with immune deficiencies are especially susceptible to HPV, so it is extremely important that precautions are taken so they can avoid being exposed to the virus. Plantar warts grow deep into the skin. Usually, this growth occurs slowly, with the warts appearing small at first and becoming larger over time.



Figure 1: Asymptomatic Toe Lesion



Figure 2: Rough, Crusty Feet Lumps

There are two types of plantar warts. A solitary wart (see Figure 1) is a single wart. It often increases in size and may eventually multiply, forming additional “satellite” warts. Mosaic warts (see Figure 2) are a cluster of several small warts growing closely together in one area. Mosaic warts are more difficult to treat than solitary warts. The symptoms of a plantar wart may include the following: thickened skin, often a plantar wart resembles a callus because of its tough, thick tissue; pain, walking and standing may be painful, squeezing the sides of the wart may also cause pain; and tiny black dots, these often appear on the surface of the wart. The dots are actually dried blood contained in the capillaries (tiny blood vessels). Although plantar warts may eventually clear up on their own, most patients desire faster relief. The goal of treatment is to completely remove the wart.

Treatment includes cryotherapy and electrosurgery. Warts can also be removed by pulses of laser energy that heat up the blood vessels within the wart, resulting in a necrotic wart that eventually falls off. In some cases, surgical treatment is necessary. Warts may return, requiring further treatment and investigations.

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Case 3

Circumscribed Hyperpigmentation

A 10-year-old boy presents with a hyperpigmented lesion on the lower abdomen. The lesion is asymptomatic.

What is your diagnosis?

- a. Segmental lentiginosis
- b. Becker's nevus
- c. Nevus spilus
- d. Café au lait spot

Answer

Classically, nevus spilus (**answer c**) presents as a light-brown, circumscribed pigmentation that is stippled with dark brown, punctate macules or papules. Although nevus spilus can be congenital, most lesions develop in the first year of life. The lesion often first appears as an evenly pigmented, light-brown macule, with few or no speckles. The speckles appear or increase during childhood or even adulthood. In the macular type of nevus spilus, the speckles are evenly distributed within the background macule. In contrast, the papular type appear more scattered and are unevenly distributed with speckles within the background macule. Sites of predilection include the abdomen and back. Nevus spilus occurs in less than 0.2% of all newborns,



1.3 to 2.1% of school-aged children, and 2.3% of adults. Both sexes are equally affected. Melanoma arising from nevus spilus is rare. Routine prophylactic excision of the lesion for oncologic reasons is not warranted. Prophylactic full-thickness, complete excision of the lesion, should be considered in the setting of dysplasia or when the lesion appears atypical.

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Case 4

White Lesions on the Penis

This 25-year-old man has had hypopigmented lesions on his penis since his teens. They are sometimes itchy.

What is your diagnosis?

- a. Venereal warts
- b. Lichen nitidus
- c. Lichen planus
- d. Lichen simplex
- e. Molluscum contagiosum

Answer

Lichen nitidus (**answer b**) is characterized by numerous minute, shiny, flat-topped, discrete papules. Lesions are often localized to the penis, lower abdomen, inner thighs, flexor areas of the wrists, forearms, and dorsum of the hands. They are most often hypopigmented but may be hyperpigmented. Itch is not often a symptom, but it may be present. The cause is unknown. The condition is generally self limited over time. When pruritus is a feature, topical steroids have been effective.



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**Case 5**

A Unilateral Rash

This gentleman has had this unilateral rash for ten days. He did not see a doctor sooner, because he was abroad. He claims that the symptoms have been improving; however, he wanted to see a doctor to know what the condition could be and whether it is contagious.

What is your diagnosis?

- a. Herpes zoster
- b. Eczema herpeticum
- c. Erythema multiforme
- d. Lichen planus

Answer

Herpes zoster (**answer a**) occurs in people who previously had chicken pox. The herpes varicella zoster virus lies dormant in the dorsal root ganglion following chicken pox. It then travels down the cutaneous nerves to infect the epidermal cells. Destruction of these cells results in the formation of intraepidermal vesicles. For several days before the rash appears, pain or abnormal sensations of the skin are experienced. The skin then becomes red and dotted with rash groups of small vesicles, followed by weeping and crusting lesions. Healing takes three to four weeks. The rash is unilateral and confined to one or two adjacent dermatomes with a sharp cut off at or near the midline. The pain may continue until healing occurs, but, in the elderly, it may go on for months or even years.

If the patient is seen during the prodromal phase of pain or paresthesia, or within 48 hours of the development of blisters, treat with a seven day course of an oral antiviral agent, such as:

- Aciclovir 800 mg five times a day
- Famciclovir 250 mg t.i.d.
- Valaciclovir 1 g t.i.d.

These drugs are competitive inhibitors of guanosine, and, because they are converted to the triphosphate by



viral thymidine kinase, they are effective only in the presence of an actively replicating virus. They are very expensive, and thus should only be given in the early phase of the disease (within 48 hours of the appearance of rash). Regular analgesics such as ASA 1 g every four hours, can be given. In the elderly, prophylactic amitriptyline 10 to 25 mg taken at night, gradually increasing to 75 mg, may help to prevent postherpetic neuralgia if given as soon as the rash appears.

Zoster is much less contagious than chicken pox. Persons with zoster can only transmit the virus if blisters are broken. If infected, these individuals will develop chicken pox, not zoster, and only if they have not had chicken pox before. Newborns and those who are already ill or immunosuppressed (such as cancer patients) are at the highest risk. As a result, patients with zoster are rarely hospitalized unless absolutely necessary.

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**Case 6**

Golden-coloured Plaques

A six-year-old boy presents with an acute onset of golden-coloured plaques over his chest. Rubbing the lesions does not induce any change.

What is your diagnosis?

- a. Juvenile xanthogranuloma
- b. Solitary mastocytoma
- c. Xanthoma
- d. Lichen aureus
- e. Nevus sebaceous

Answer

Lichen aureus (**answer d**) is a rare disorder characterized by the sudden eruption of a solitary, round lesion or a localized group of golden-brown lesions in the form of macules or papules. These lesions can affect any part of the body and are generally asymptomatic. The cause of lichen aureus is unclear, but it may be associated with infection, venous insufficiency, and drugs. Some reports suggest that there is a possibility of progression to mycosis fungoides, and, therefore, these children should be regularly followed-up. Treatment is difficult and topical corticosteroids are usually ineffective. Other treatment modalities, including UVA therapy, have shown some effect.

Solitary mastocytomas are a common type of childhood mastocytosis, which comprises a group of disorders associated with the proliferation of mast cells within the skin. This is an unlikely diagnosis in this case, as they tend to present with more of a reddish-brown hyperpigmentation and may also develop urticarial weals/plaques when stroked gently (Darier's sign). Mastocytomas may occur on any part of the body, but they are noted most frequently on the distal extremities. They also typically present by age two.

Juvenile xanthogranulomas (JXG) are a common form of non-Langerhans cell histiocytosis. JXG is generally a benign, self-limited disease and presents as a firm, round papule or nodule. Early JXGs are



erythematous to orange or tan, but they become more yellow with time. Also, JXGs typically present at birth or during the first nine months of life.

Xanthoma is a lipid-containing papule, plaque, nodule, or tumour that may be found anywhere on the skin and mucous membranes. Planar xanthomas, in particular, are soft, yellow to orange or brownish-yellow macules to slightly elevated plaques. They are generally seen on the face, sides of the neck, upper trunk, buttocks, elbows, and knees, but may occur anywhere on the body.

A nevus sebaceous is unlikely, as this is a congenital lesion and does not typically present acutely in childhood. It presents as a well-circumscribed, hairless plaque that mainly affects the face and scalp. They are also yellow in colour, and this is related to sebaceous gland secretion.

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Case 7

Thick, Scaly Elbow Plaque

A 54-year-old male, who recently immigrated from Sri Lanka, presents with a stable, thick, scaly plaque on his elbow of eight months duration. It is occasionally pruritic. He has no other lesions, nor any family history of this problem

What is your diagnosis?

- a. Psoriasis
- b. Nummular eczema
- c. Tinea corporis
- d. Pityriasis rosea
- e. Lepromatous leprosy

Answer

Psoriasis (**answer a**) is a chronic, inflammatory skin disease with well-defined erythematous and scaly, round plaques affecting the scalp, nails, and extensor surfaces of the body. Psoriasis can wax and wane and has a strong genetic basis. The main forms of psoriasis include plaque (80%), guttate (drop-like; these usually occur after strep throat), inverse (affecting axillae and groin), pustular, and erythrodermic (generalized erythema). Approximately 20 to 30% of patients will develop psoriatic arthritis, typically 10 years or so after skin disease onset. The two age peaks for psoriasis are 15- to 25-years-old and 55- to 65-years-old.

Treatment options for mild localized skin disease include topical steroids, topical calcipotriene or calcipotriol, and topical calcineurin inhibitors (for face or intertriginous involvement). Tar and salicylic acid



preparations can also be beneficial. For moderate to severe disease, generalized disease, or topical treatment failures, options include phototherapy (UVB, PUVA), methotrexate, acitretin, cyclosporine, or the new biologic therapies. Psoriatic arthritis is managed typically with methotrexate and/or biologic agents.

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Case 8

Dark Chest Patch

A 13-year-old female presents with a dark patch over the left side of her chest. It has been present for five to six years.

What is your diagnosis?

- a. Neurofibromatosis type 1
- b. McCune-Albright syndrome
- c. Café-au-lait spot
- d. Becker's nevus
- e. Congenital smooth muscle hamartoma

Answer

Café-au-lait spot (CALs) (**answer c**) are relatively common lesions found in up to 33% of children. They are uniformly hyperpigmented, round, or oval patches measuring up to 20 cm, and they may occur anywhere on the body. CALs appear in infancy and may increase in number throughout early childhood. When present in small numbers, they are usually benign; however, if a child has six or more CALs, neurofibromatosis type 1 or Legius syndrome should be considered.

Neurofibromatosis (NF) type 1 is an autosomal dominant genetic disorder with variable expressivity. NF type 1 is characterized by multiple CALs and cutaneous neurofibromas; other possible clinical manifestations include optic gliomas, iris hamartomas, and bony lesions. However, in NF type 1, pediatric prepubertal patients need to have at least six or more CALs greater than 0.5 cm in size to meet one of seven criteria.

McCune-Albright syndrome is caused by a somatic mutation that leads to inappropriate endocrine stimulation. It consists of a triad of CALs, precocious puberty, and fibrous dysplasia of the bones, with precocious puberty being the most common presenting complaint. CALs often have irregular borders and occur unilaterally on the same side as the skeletal lesions.



Becker's nevi are benign, cutaneous hamartomas that classically involve the shoulder and upper trunk unilaterally. The nevus presents as a hyperpigmented patch with irregular borders, and it may have associated hypertrichosis. It often appears in adolescence and favours males in a 5:1 ratio.

Congenital smooth muscle hamartomas are benign lesions caused by smooth muscle proliferation in the reticular dermis. They present as skin-coloured to slightly hyperpigmented plaques and may have associated hypertrichosis.

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Case 9

Red, Round Spots

This healthy 25-year-old male noted a round spot on his upper flank three weeks ago. It has since spread.

What is your diagnosis?

- a. Tinea corporis
- b. Pityriasis rosea
- c. A drug eruption
- d. Secondary lues
- e. Parapsoriasis

Answer

Pityriasis rosea (**answer b**) is usually an asymptomatic, papulosquamous eruption. It mainly affects healthy, young individuals between 10- and 35-years-of-age, although a much wider age range can be affected. A crawly, itchy sensation may arise in warm temperatures.

In a classic case, such as this one, a herald or mother patch is first seen, often days before other smaller patches appear. At times, there is no recognizable herald patch, and the number of lesions are scant. Lesions are usually distributed from the neck to the knees, following dermal or rib lines in the pattern of a Christmas tree. The eruption spreads over the trunk and extremities for about three weeks and involutes over the same period of time, although a longer healing time is not unusual. There is no scarring. Variants with purpura and fine vesicles do occur.

The cause is unknown, but it is thought to be viral. It is more common in spring and fall. Family breakouts are rare.



As it is a self-limited condition, treatment is not required. In some cases emollients, antihistamines, mid potency steroids, oral erythromycin 250 mg q.i.d. for 10 days, and even ultraviolet B light treatments have been used.

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