

LINES OF BLASCHKO

All the clues given below qualify a congenital or an acquired condition or a genodermatoses that follows the lines of Blaschko.

Identify the condition using the clues provided and complete the crossword [Figure 1].

Enumerate different lines in dermatology?

Table 1 gives a brief description of some of the lines, which are encountered in dermatology.

Clinical signs in this issue

Various clinical signs have been described in this journal issue [Table 2]. Leser Trelat sign and dimple sign are well-known; goat's eye sign in orf or typical features of scarring in sporotrichosis are newer descriptive signs.

Box 1: Clues to crossword puzzle

Across

2. A syndrome characterized by multiple basal cell carcinomas and mutations in the PTCH gene (6,5)
3. Linear variant of an acquired condition characterized by the presence of coronoid lamella (13)
5. Congenital hypopigmentary disorder with serrated irregular borders (5,13)
6. An X linked dominant neurocutaneous syndrome characterized by mutations in the NEMO gene (5,10)
7. Nevoid condition featuring filiform and horn like keratosis with giant comedones (5,12)
9. Self-limiting linear dermatoses that predominantly affects children (6,8)
10. The histopathology of this condition classically shows an effaced epidermis with compact hyperkeratosis, homogenized edematous papillary dermis and a lichenoid infiltrate (6,9)
12. A syndrome characterized by hernia like outpouchings of the fatty tissue and mutation in the PORCN gene (5,6,10)

Down

1. Syndrome characterized by chondrodysplasia punctata, transient ichthyosis and follicular atrophoderma (7,9,6)
4. The other name of disease called keratosis follicularis (6,5)
8. An ichthyosis associated syndrome characterized by a mutation in the NADPH steroid dehydrogenase like protein (5)
11. A syndromic variant of dystrophic epidermolysis bullosa with aplasia cutis congenital (4)

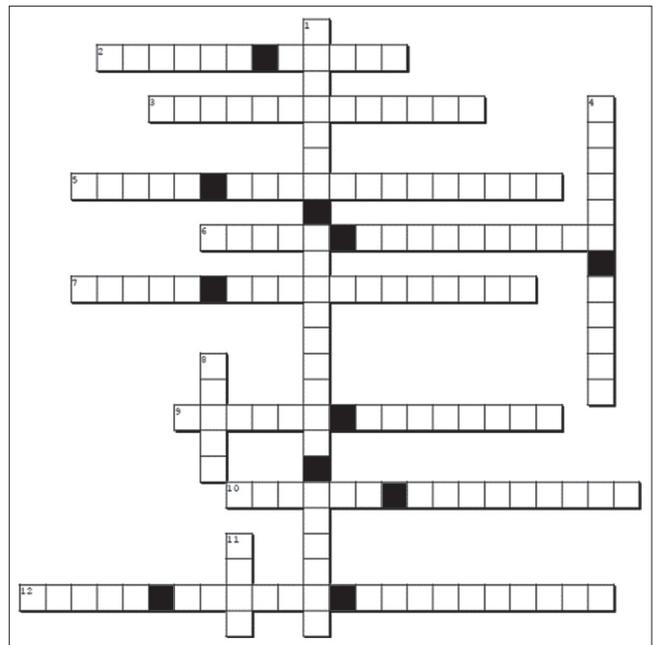


Figure 1: Crossword (conditions which follow the lines of Blaschko)

IMIQUIMOD

What is the mechanism of action of imiquimod?

Imiquimod is an inducer of interferon- γ through the activation of Toll Like Receptor (TLR-7). It is responsible for local antiviral, anti-tumor and immunoregulatory action. It also stimulates the natural killer and B cells and enhances migration of Langerhan's cells. It causes stimulation and release of pro-inflammatory cytokines, including interferon alpha (IFN- α), tumor necrosis factor alpha and interleukin-1, 6, 8, 10 and 12.

What are the indications of imiquimod?

Imiquimod is available as a 5% cream in a sachet and is to be applied overnight thrice a week. The indications are:

- Viral infections: Genital warts, common warts, molluscum contagiosum
- Malignant and premalignant conditions: Basal cell carcinoma, actinic keratosis, Bowen's disease, lentigo maligna, extramammary Paget's disease, Bowenoid papulosis

How to cite this article: Citation will be included before issue gets online***

Received: April, 2015. **Accepted:** April, 2015. **Source of Support:** Nil. **Conflict of Interest:** None declared.

Table 1: Different lines in dermatology

Lines	Brief description
Beau's lines	Deep grooved lines on the nails due to temporary arrest in the growth of the nail matrix
Bunny lines	Subtle crinkly wrinkles on both the sides of the nose
Futcher's lines, Voigt lines, Futcher Voigt lines or Ito lines	Same as pigmentary demarcation lines (PDL). These lines are abrupt transitions from areas of deeper pigmentation to areas of lesser pigmentation. Eight types (A-H) are described
Langer's lines	Also called cleavage lines, they are topographical lines drawn on the map of the human body. They correspond to the natural orientation of the collagen fibers in the dermis and are generally parallel to the orientation of the underlying muscle fibers
Relaxed skin tension lines	Following these lines during elective incision offers best cosmetic results with the narrowest and strongest scar line. These lines are parallel to dermal collagen bundles and perpendicular to the plane of muscle contraction
Lines of Blaschko	Represent a pattern assumed by many different nevoid and acquired skin disorders on the human skin and mucosae. These lines do not correspond to any known nervous, vascular or lymphatic structures but represent the developmental growth pattern of the skin
Lines of Zahn	It is a histopathological hallmark of thrombi where there are visible and microscopic alternating layers of platelets mixed with fibrin, which appear as lighter and darker layers of RBCs
Marionette lines	Curvilinear wrinkles formed because of facial movements and aging process. These extend downwards from the oral commissures
Mee's lines	Also called leukonychia striata. These are non-blanching transverse bands across nails of fingers and toes. Differential diagnosis includes arsenic poisoning, Hodgkin's lymphoma, congestive heart failure, leprosy, malaria, chemotherapy, carbon monoxide poisoning and systemic insults
Muehrcke's lines	Muehrcke's lines are white lines (leukonychia) that extend all the way across the nail and lie parallel to the lunula. They can be seen in hypoalbuminemic states and after chemotherapy
Pastia's lines	Transverse red streaks in skin folds due to capillary fragility in patients with scarlet fever

Al About K, Al About A. Names of 'Lines' in dermatology literature. *Our Dermatol Online* 2013;4:251-3. PDL: Pigmentary demarcation lines, RBCs: Red blood cells

- Other uses: Keloids, hypertrophic scar, morphea, herpes labialis, herpes genitalis.

What are the adverse effects?

Erythema is the most common side-effect; other adverse effects include erosions, irritation, pain, ulceration. Non dermatological side-effects include upper respiratory tract infection, sinusitis, and headache.

Table 2: Clinical signs

Clinical sign	Description of the sign
Rope sign	It refers to the thick, indurated, inflammatory cord-like structure that extends from the lateral trunk to the axillae and said to be a classical finding in interstitial granulomatous dermatitis (Ackerman's syndrome) with arthritis
Floating sign	Seen as a histopathological finding in interstitial granulomatous dermatitis: histiocytic pseudorosettes surround an empty space centred by degenerated collagen fibers
Dimple sign	Squeezing the skin adjacent to a dermatofibroma causes a dimpled appearance on its surface, also termed positive pinch sign
Scarring in sporotrichosis	Tendency of the lesions to become linear when scarring independent of the shape of the lesion or skin tension lines Presence of atrophic areas intermixed with hypertrophic areas Helps in the clinical diagnosis of sporotrichosis
Leser Trelat sign	An association of the acute onset and/or rapid increase in the size and number of multiple seborrheic keratoses with an underlying internal malignancy. Common cancer entities associated with Leser Trelat sign include gastrointestinal adenocarcinomas, lymphoproliferative disorders, neoplasias of the breast, lung, urinary tract and ovarian cancer
Premalatha sign	Cerebriform tongue in pemphigus vegetans
Iris like lesion, bull's eye or goat's eye like lesions	Seen in orf, also known as ecthyma contagiosum or contagious pustular dermatitis caused by epitheliotropic DNA virus from the parapox family

DNA: Deoxy ribonucleic acid

What is resiquimod?

Resiquimod is an imidazoquinolinamine and is a potent inducer of IFN α . It can be administered both topically and orally. It is more potent at inducing *in vitro* cytokine responses than imiquimod but whether this will increase its antiviral spectrum is unknown. It may however be more useful than imiquimod in treating herpes simplex virus type 2 (HSV 2) infection and may also be used in hepatitis C virus infection, in addition to its role in the treatment of human papillomavirus or molluscum contagiosum. Furthermore, it may be a particularly useful agent against HSV-2 either as an agent to prevent recurrence or as a vaccine adjuvant in the presence of HSV glycoproteins.

PARTHENIUM DERMATITIS

What is the most common cause of plant dermatitis in India?

Parthenium hysterophorus is the most common cause of plant dermatitis in India. It was accidentally

introduced in India through imported wheat sent by USA in 1950s; it is also known as congress grass or congress weed. It is an erect annual herb with alternate deeply dissected leaves, growing up to 2 m tall with much branched inflorescences bearing white flower heads. The dermatitis is usually caused by the dried leaves and trichomes (small glandular hair present on the undersurface of leaves and stem). *Sesquiterpene lactones* are the allergens that have been identified in the leaves, stem and waxy coat of the pollen and hence can cause “dermatitis at a distance.” Among the *sesquiterpene lactones*, *parthenin*, *hymenin* and *ambrosin* are the major allergens. Others are *coronopilin* and *tetraneurin A*.

What are the patterns of dermatitis caused by *Parthenium hysterophorus*?

- Air borne contact dermatitis (ABCD)
- Chronic actinic dermatitis (CAD)
- Mixed pattern (combination of ABCD and CAD)
- Exfoliative dermatitis
- Hand and feet dermatitis
- Rare patterns: Photosensitive lichenoid eruption, prurigo nodularis-like, perianal dermatitis, vesicular hand eczema, seborrheic pattern and dermatitis simulating lichen nitidus.

REFERENCE

Sharma VK, Verma P. *Parthenium* dermatitis in India: Past, present and future. Indian J Dermatol Venereol Leprol 2012;78:560-8.

What is weekly azathioprine pulse regimen in management of *parthenium* dermatitis?

Weekly azathioprine pulse is administration of 300 mg azathioprine once a week for an average of 6 months. It has the advantage of decrease in the cost of therapy and increased compliance.

SPOROTRICHOSIS

How is sporotrichosis transmitted?

Sporotrichosis is a subcutaneous mycosis caused by a dimorphic, saprophytic fungus *Sporothrix schenckii*. It affects several animal species including humans and usually occurs after inoculation of the fungus through the skin or mucosa following minor trauma. The infection may be acquired during leisure activities, or occupationally among farmers and gardeners who come in contact with vegetables or soil. Transmission from cats via bites or scratches has also been described.

Describe the clinical features in cutaneous sporotrichosis?

The two chief patterns of cutaneous sporotrichosis are the lymphangitic and fixed forms, but atypical varieties such as mycetoma-like or cellulitic forms may occur.

In the lymphangitic type, at the site of inoculation, a nodule or pustule is initially formed, which may then ulcerate and if untreated there is an involvement of lymphatics resulting in a linear distribution of nodules along the lymphatic vessels.

In the fixed type, the characteristic cutaneous lesion is a gumma, but it may be verrucous, plaque-like, nodular or ulcerated as well.

Enumerate the differential diagnosis of sporotrichosis

Sporotrichosis can simulate other granulomatous infections such as leishmaniasis, chromoblastomycosis, tuberculosis, fish-tank granuloma (*Mycobacterium marinum*) and paracoccidioidomycosis.

OCULOCUTANEOUS TYROSINEMIA

What are the characteristic clinical features of oculocutaneous tyrosinemia?

Oculocutaneous tyrosinemia (tyrosinemia type II, Richner-Hanhart syndrome) is a rare inherited disorder involving tyrosine metabolism. It is characterized by various dermatological, ophthalmological, and neurological findings. The coexistence of painful keratoderma with ocular symptoms is characteristic. Lesions of the skin and eyes are probably caused by deposition of tyrosine crystals leading to an inflammatory response.

Patients usually present with ocular findings such as photophobia and corneal ulcers in the 1st year of life. Mental retardation is a variable feature. Classical cutaneous features are the typical hyperkeratotic lesions of the palmoplantar area, which usually arise as bullae and erosions during childhood and progress to sharply demarcated, yellowish plaques limited to pressure points. Intense pain is an important diagnostic clue.

The disorder can be diagnosed by the detection of a high plasma tyrosine level and a normal plasma phenylalanine level, and can be confirmed by demonstrating a mutation in the tyrosine

aminotransferase gene located on chromosome 16q22.1-q22.3.

DERMATOFIBROMA

Describe the classical clinical and histological features of dermatofibroma

Dermatofibromas usually occurs on the extremities as reddish-brown papules or nodules, which may either be elevated or slightly depressed. Hard lesions that adhere to the epidermis may result in a depression over the nodule producing the classical dimple sign.

Dermatofibromas are characterized as a poorly circumscribed proliferation of spindle-shaped fibroblasts or histiocytes arranged in sheets or interlocking strands with a storiform pattern, entrapment of collagen bundles and patchy lymphocyte infiltrates. Cytologically, the tumors show plump, ovoid to spindle-shaped cells with pale, eosinophilic cytoplasm and bland nuclei with vesicular chromatin. Epidermal hyperplasia and a hyperpigmented basal layer are characteristic epidermal findings.

What are the clinical and histological variants of dermatofibroma?

Variants can be classified into many types according to their clinical and histologic aspects. Clinical variants include atrophic, atypical polypoid, giant, subungual, erosive, lichenoid, ulcerated, and grouped palmo-plantar histiocytomas. Several histologic variants have been described, including cellular, aneurysmal, epithelioid, atypical and myxoid, as well as subcutaneous and deep penetrating types.

EXTRAMAMMARY PAGET'S DISEASE

What is extramammary Paget's disease?

Extramammary Paget's disease is an intraepidermal proliferation of Paget cells and it occurs in sites rich in apocrine glands, such as the vulva, anogenital region and axilla. Clinically and histopathologically it resembles the classic areolar-type mammary Paget's disease.

Extramammary Paget's disease can be divided into primary (intraepithelial adenocarcinoma arising within the epidermis) and secondary disease (intraepithelial spread of a visceral carcinoma). The prognosis of primary extramammary Paget's disease is good but it has a high rate of recurrence after surgery

due to its irregular and multicentric pattern. On the other hand, the prognosis and treatment of secondary extramammary Paget's disease is determined by the nature of the internal malignancy and the presence or absence of metastatic disease.

Describe the clinical features and differential diagnosis of Paget's disease?

Clinical presentation of Paget's disease is often non-specific (erosive, erythematous, eczematous, or circinate lesions) and mimic other dermatoses. However, the plaque usually has a sharp, rounded and slightly raised margin with areas of erosions and crusting, or the surface may be scaly. There may be severe itching along with areas of excoriations, lichenification or hyperpigmentation.

Differential diagnosis includes chronic eczema, psoriasis, Bowen's disease, superficial basal cell carcinoma, leukoplakia and malignant melanoma.

Describe Paget cells

Paget cells are commonly found in the prickle cell layer and may lie singly or in clusters. They are large rounded cells with pale abundant cytoplasm and round, vesicular or hyperchromatic nuclei with prominent nucleoli. There is a high nuclear/cytoplasmic ratio. The cytoplasm is PAS-positive and diastase-resistant indicating the glandular origin of the cells. The cellular pattern is described as a buckshot pattern.

EOSINOPHILIC CELLULITIS

Describe the clinical and histological features of Wells syndrome

Eosinophilic cellulitis, or Wells syndrome, is an uncommon inflammatory dermatosis of unclear pathogenesis. It is characterized by erythematous, edematous plaques that resemble acute bacterial cellulitis or urticaria. Various clinical patterns include papules, morphea-like plaques, nodules, vesicles, and rarely, bullae. There may be single or multiple lesions and any site can be affected. There is gradual resolution of lesions without scarring. There may be recurrences, blood and tissue eosinophilia. There is degranulation of eosinophils in the dermis which results in dermal edema and inflammation. Flame figures are the characteristic findings; these consist of clusters of eosinophils and histiocytes around the collagen bundles and eosinophilic debris.

Vishalakshi Viswanath, Resham Vasani¹

Department of Dermatology, Rajiv Gandhi Medical College, Thane,
¹Department of Dermatology, K J Somaiya Medical College and
 Research Centre, Sion, Mumbai, Maharashtra, India

Address for correspondence: Dr. Vishalakshi Viswanath,
 Department of Dermatology, Rajiv Gandhi Medical College,
 Thane, Maharashtra, India.
 E-mail: visha1967@gmail.com

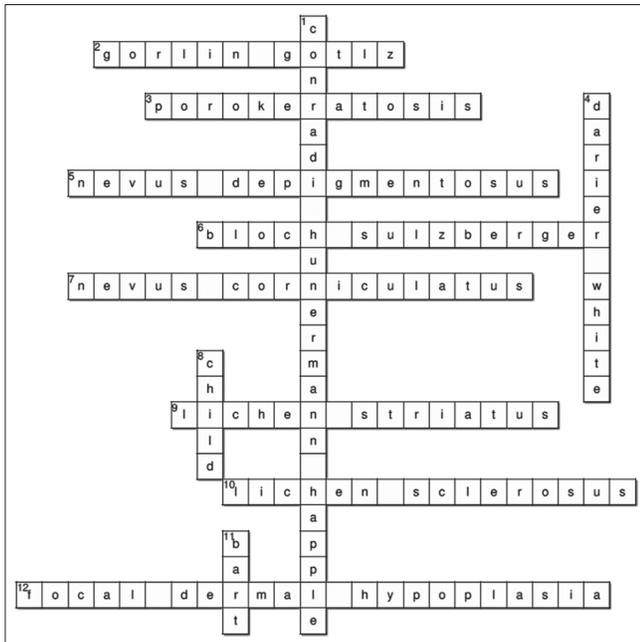


Figure 2: Answers to crossword puzzle

Box 2: Answers to crossword puzzle

Across	Down
2. Gorlin Goltz	1. Conradi Hunermann Happle
3. Porokeratosis	4. Darier White
5. Nevus depigmentosus	8. CHILD
6. Bloch Sulzberger	11. Bart
7. Nevus corniculatus	
9. Lichen striatus	
10. Lichen sclerosus	
12. Focal dermal hypoplasia	