

---

*Apollo College of Veterinary Medicine, Jaipur*

---

**SKIN AND ITS APPENDAGE**

1. **Papule:** *It is a small, circumscribed, cone shaped solid elevation of skin resulting from an infiltration of the deep corium.*
2. **Vesicle:** *It is a cavity in epidermis containing fluid and covered by a thin layer of epidermis elevated above the surface of skin.*
3. **Pustule:** *A vesicle filled with pus.*
4. **Bulla/bleb:** *It is a space, containing fluid situated intra- epidermal or sub epidermal. These are larger than vesicles.*
5. **Erosion (excoriation):** *It is superficial loss of epithelium.*
6. **Ulcer:** *A break in the continuity of the epidermis exposing dermis and it is deeper than erosion.*
7. **Urticaria (Wheal):** *A circumscribed, flat area of swelling/ oedema of the skin. It is seen in allergic conditions.*
8. **Acanthosis:** *Thickening of epidermis due to hyperplasia of cells of Malpighian layer.*
9. **Hyperkeratosis:** *It is thickening of the stratum corneum (the outer most layer of the epidermis) often associated with presence of an abnormal quantity of keratin and also accompanied by an increase in the granular layer.*
10. **Parakeratosis:** *It is a mode of keratinization characterized by the retention of nuclei in the stratum corneum.*
11. **Dyskeratosis:** *It is a faulty development in which cells of Malpighian layer undergo abnormal, premature imperfect keratinization. It suggests developing malignancy.*
12. **Fissure (Rhagades):** *It is a linear defect in epidermis, which may often extend into the dermis.*
13. **Lichenification:** *Thickening of skin in irregular areas with exaggerated markings of the skin is known as lichenification. It is seen in chronic dermatitis.*
14. **Pachyderma:** *Thickening of skin involving all the layers is called pachyderma (Elephantiasis). Here individual cells are normal.*
15. **Spongiosis:** *Intercellular edema of the epidermis is called spongiosis.*
16. **Black mole:** *It is a hyperpigmented spot in the skin.*

17. **Makula:** It is a discoloured spot of skin due to focal hyperaemia or haemorrhage. It is not elevated above the surface of skin.
18. **Albinism:** It is complete absence of melanin pigment in the skin (white skin).
19. **Boil/ Furuncle:** It is a small suppurative inflammation (Abscess) of skin involving a hair follicle or sebaceous gland.
20. **Carbuncle:** A cluster of boils situated close to each other. They open onto the skin through several pores.
21. **Abscess:** A circumscribed cavity filled with pus.
22. **Proud flesh:** If irritant, movement or trauma prevents healing of wounds then excessive granulation tissue is produced and is known as proud flesh.
23. **Keloid:** It is a connective tissue proliferation below the scar. It may recur after excision. It is not a true tumour.
24. **Folliculitis:** Inflammation hair follicle is called folliculitis.
25. **Acne:** Inflammation of sebaceous gland is called acne.
26. **Scar:** It is a healed skin defect having neither hair follicle nor sweat gland.
27. **Epitheliogenesis Imperfecta:** It indicates a condition wherein the skin fails to develop around nose, ear and feet.
28. **Congenital ichthyosis:** It is scaly epidermis which resembles with skin of fish and occurs due to a simple autosomal recessive homozygous gene in calves. This condition is characterized by scaly, horny, thick epidermis divided into plates by deep fissures. Microscopically, there is thick keratin layer over the epidermis.
29. **Acanthosis Nigricans:** This is increased amount of melanin in skin along with hyperkeratosis. This condition commonly occurs in dogs, at ventral abdomen and medial surface of legs.

#### **Etiology-**

- Hormonal imbalance
- Tumors of testicles and pituitary gland

#### **Macroscopic and microscopic features-**

- Colour of skin becomes black
- Dry and scaly skin due to hyperkeratosis
- Proliferation of melanocytes and melanoblast.
- Black/ brown colour pigment intracellular/ extracellular.
- Cells appear as black or brown globular mass.
- Melanin granules are minute, dirty brown in colour and spherical in shape.

- Hyperkeratinization

**DERMATITIS:** Dermatitis is the inflammation of skin characterized by hyperemia, erythema, serous exudation and infiltration of neutrophils and mononuclear cells.

### **Etiology**

- Bacteria, Viruses, Chemicals, Allergy, Trauma, Fungi and their toxins.

### **Types of dermatitis-Based on nature of exudates**

- Serous dermatitis
- Vesicular dermatitis
- Parasitic dermatitis
- Allergic dermatitis
- Necrotic/ Gangrenous dermatitis

### **Macroscopic and microscopic features**

- Erythematous patches on skin
- Swelling of skin, itching sensation leads to damage/ scratch due to rubbing.
- Loss of hairs, patches on skin, alopecia.
- Hyperemia
- Serous exudate
- Infiltration of neutrophils and mononuclear cells.
- Presence of fungus in skin scrapings.

**A. Serous dermatitis:** Serous dermatitis is a mildest type of dermatitis and the exudate is serous in nature.

### **Macroscopic and microscopic features**

- Skin is red and raised due to spongirosis.
- Sweat and sebum are secreted in large quantity ( Seborrhoea )
- Microscopically, hyperemia, edema and Infiltration by a few leucocytes are seen.

**B. Vesicular dermatitis:** It is an acute type of dermatitis characterized by excessive accumulation of clear fluid in dermis and epidermis leading to vesicle/ blisters formation. It is also known as hydropic dermatitis.

### **Etiology**

- Intense Sunburn and photosensitization

- Heat
- Foot and Mouth Disease virus
- Pox virus

**Macroscopic and microscopic features**

- Erythema and swelling of the affected skin due to edema leads to formation of vesicles or blebs which contains clear fluid. If the roof of the vesicle dies the vesicle may rupture revealing a red base.
- Microscopically, there is hyperemia with edema in the dermis and infiltration by leucocytes. There is accumulation of clear fluid in epidermis and dermis, which is characterized by clear spaces or takes light pink stain of eosin.
- Prickle cells undergo hydropic degeneration which may rupture to form vesicle and bullae. The roof of vesicles is formed by stratum corneum.
- Presence of leucocytes in vesicles changes them to pustules.
- Later the pustules may rupture and crust is formed.

**C. Parasitic dermatitis:** It is caused by mites and characterized by hyperkeratosis and inflammation of skin leading to itching, rubbing and scratching.

**Macroscopic and microscopic features**

- Hyperkeratosis of skin, dry and scaly appearance of skin.
- Hemorrhage/ trauma due to rubbing/ scratching as a result of intense itching.
- Absence of hairs on lesions.
- Hyperemia and infiltration of neutrophils, lymphocytes, macrophages, eosinophils.
- Presence of mites at the site of lesions

**D. Allergic dermatitis:** This is the inflammation of skin sensitized to certain substances, known as allergens. Such inflammation can be seen as a result of delayed type hypersensitivity (DTH) reaction.

**Macroscopic and microscopic features**

- Hyperemia with infiltration of eosinophils and mononuclear cells, Erythema
- Edematous/ nodular swelling, hard to touch, hot and painful.
- Vesicular rash, pruritus, serous exudate.

**E. Gangrenous dermatitis:** Gangrenous dermatitis is the inflammation of skin along with formation of gangrene caused by fungal toxins and characterized by sloughing of skin, dry gangrene with break in epidermis.

#### **Macroscopic and microscopic features**

- Presence of gangrenous inflammation on extremities such as legs, udder, ears, tail, scrotum.
- Sloughing of skin leaving raw surface.
- Sloughing of hoofs with haemorrhages
- Inflammation of skin and invasion by saprophytes causing dissolution of cells/ tissue
- Infiltration of mononuclear cells at the periphery of the lesion.

**31. Eczema:** Eczema is a form of allergic dermatitis of obscure etiology and characterized by erythema, vesicular rash, serous exudate, watery discharge and pruritus.

#### **It is of two types-**

- Acute or Moist Eczema
- Chronic or Dry Eczema

Acute or Moist Eczema-Initially, vesicles and bullae are formed which may be infected to produce pustule. Later pustule may dry forming scabs. Microscopically, spongiosis, edema and cellular infiltration in the dermis may be seen.

Chronic or Dry Eczema-Scratching and rubbing of skin lead to thickening of skin with formation of scale, scabs/crusts and fissure. Microscopically, there is hyperkeratosis, acanthosis and infiltration by lymphocytes.

**32. Laminitis (Founder):** Laminitis is inflammation of sensitive laminae of hoof.

**33. Pachyderma** is thickening of the skin, all the layer of which are affected along with individual cells are normal. This condition is due to nonspecific dermatitis. There may be hyperplasia of the connective tissue. These conditions are seen in hind limb of horse and scrotum of old dogs.

**34 Impetigo** is pustular dermatitis usually caused by staphylococci and rarely by streptococci.

**35. Seborrhoea:** It is increased secretion of sebum and usually found in dermatitis.

**36. Sudoriferous cyst:** Occlusion of the ducts of sweat glands gives rise to cysts which have a thin capsule, lined by a single layer of columnar or cuboidal epithelium and containing watery fluid.