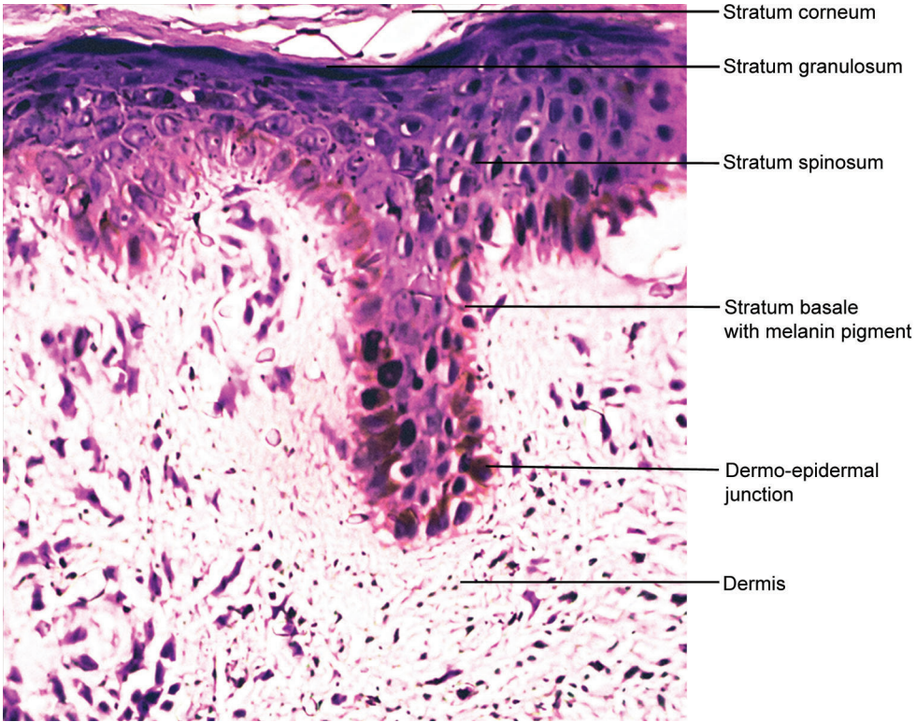


Fig. 1.1: Normal skin

3. *Stratum granulosum*
   - Lined by flattened cells and are filled with keratohyaline granules, which are deeply basophilic
4. *Stratum corneum*
   - Anucleate layer
   - Can show basket-weaving
   - Lowest portion of stratum corneum is called stratum lucidum

Melanocytes (Fig. 1.2)

- Comprise melanin and are present in the basal cell layer of the epidermis
- Can be demonstrated with special stains like Masson-Fontana
- Melanin can be removed from the tissue by melanin bleach, which can be done by using strong oxidizing agents such as hydrogen peroxide or potassium permanganate
- Immunohistochemical stain for their identification is S-100

Merkel Cells

- Present within the basal cell layer of the epidermis
- Cannot be demonstrated by hematoxylin and eosin stain
- Immunohistochemical stain for their identification is cytokeratin-20 (CK-20)

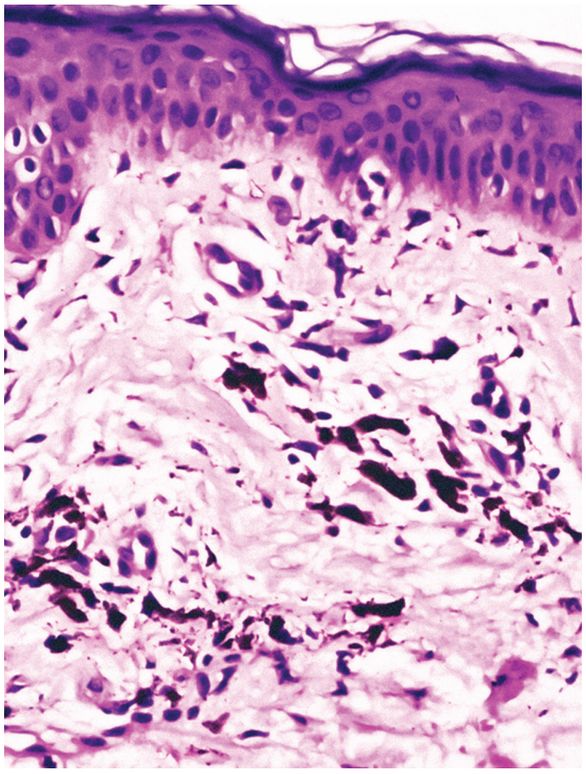


Fig. 1.2: Melanophages in upper dermis

- Fibroblastoma
- Neurofibroma
- Spindle cell lipoma
- Hemangioma
- Angiosarcoma
- Kaposi sarcoma

Negative in

- Dermatofibroma

CD-31

Positive in

- Cutaneous angiosarcoma
- Kaposi sarcoma
- Hemangioendothelioma

Factor XIIIa

Positive in

- Dermatofibroma
- Atypical fibroxanthoma
- Juvenile xanthogranuloma
- Epithelioid cell histiocytoma

C-KIT (CD-117)

Positive in

- Mast cells, melanocytes, hematopoietic stem cells, systemic mastocytosis, gastrointestinal stromal tumor

CD-1a

Positive in

- Langerhans cell histiocytosis

CD-45/ Leucocyte common antigen (LCA)

Positive in

- Granulocytes, lymphocytes, monocytes, macrophages, mast cells, Langerhans cell

Vimentin

Positive in

- Non-Hodgkin lymphoma
- Sarcoma
- Melanoma

Desmin

Positive in

- Leiomyoma
- Leiomyosarcoma

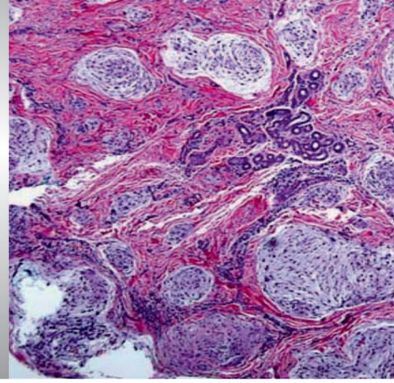
Glial–Fibrillary Acid protein (GFAP)

Positive in

- Neurofibroma
- Schwannoma
- Chondroid syringoma

Use of IHC markers to localize primary cancer site (in unknown cutaneous metastasis)

IHC marker	Primary cancer site (in unknown cutaneous metastasis)
Cytokeratin-7	Adenocarcinoma from breast or lung
Cytokeratin-20	Metastatic small cell carcinoma, gastrointestinal carcinoma, mucinous ovarian carcinoma
Epithelial membrane antigen	Carcinoma breast, lungs, stomach, intestine, prostate, kidney, thyroid
Carcinoembryonic antigen	Carcinoma colon, lung, pancreas, breast
Estrogen receptor protein	Metastatic carcinoma breast
Prostate-specific antigen	Metastasis from carcinoma prostate
Thyroglobulin	Metastatic carcinoma thyroid



Chapter

Commonly used Terms in Dermatopathology

5

Acantholysis
- Loss of adhesion between keratinocytes
- Occurs due to dissolution of intercellular bridges

Acanthosis
- Increase in epidermal thickening (stratum spinosum layer)
- Can be described as regular (rete ridges descend in the papillary dermis at same level) or irregular (rete ridges descend in papillary dermis at different levels)

Apoptosis
- Programmed cell death
- Keratinocyte remnants (i.e. colloid bodies) can be seen in stratum basale and in dermis

Asteroid body
- Stellate shaped intra-cytoplasmic inclusions, present within the giant cells
- Most common associated conditions—Sarcoidosis, Berylliosis, and other granulomatous conditions

Alopecia
- Defined as loss of hair
- Can be of scarring or non-scarring types

Atrophy
- Defined as decrease in epidermal thickening (less than five cell layers thick)

Ballooning degeneration
- Increased intracellular fluid in epidermal keratinocytes with their resultant destruction

Basement membrane
- Defined as a zone on which the epidermis rests and acts as an interface between the epidermis and dermis

Basal cell degeneration
- Appearance of vacuoles in the basal cell layer of epidermis
- Synonyms—vacuolar degeneration or hydropic degeneration or liquefactive degeneration

Cornoid lamella
- Column of parakeratosis, underneath which, there is absence of granular layer

Corps ronds/grains
- Corps ronds—cells with round nucleus and surrounding cytoplasmic halo
- Corps grains—flattened dark blue nucleus with scant cytoplasm

Cowdry-A body
- Also known as the Lipshutz body
- Intra-nuclear eosinophilic inclusions, seen in herpes infection

Cowdry-B body
- Intra-nuclear eosinophilic inclusions, seen in adenovirus and poliovirus infection

Crust
- Stratum corneum showing fluid with inflammatory cells and debris

Donovan body
- Cytoplasm of macrophages, show collections of bacilli
- Seen in granuloma inguinale (donovanosis)

Dutcher body
- Plasma cells with intra-nuclear inclusions of immunoglobulin

Epidermolytic hyperkeratosis
- Irregular hypergranulosis with cell membrane disruption

Epidermotropism
- Lymphocytes are present throughout the dermo-epidermal junction

Exocytosis
- Lymphocytes within the epidermis (migration of lymphocytes from the dermis into the epidermis)

HISTOPATHOLOGY

- Stratum corneum layer on its top shows a crust containing neutrophilic aggregates (that is often centered on a follicle)
- Mild epidermal spongiosis and irregular acanthosis are seen
- Perifollicular parakeratosis (shoulder parakeratosis)
- Exocytosis of lymphocytes
- Superficial dermis shows perivascular lympho-histiocytic infiltrate

DIFFERENTIAL DIAGNOSIS

Psoriasis

- Neutrophilic aggregates in stratum corneum
- Hyperkeratosis and parakeratosis
- Minimal or no spongiosis

ALLERGIC CONTACT DERMATITIS

INTRODUCTION

- Allergen or irritant mediated delayed hypersensitivity reaction
- Common irritants responsible include nickel, uroshiol, perfume, neomycin, formaldehyde

CLINICAL FEATURES (Fig. 6.3)

- Pattern of distribution of the lesion—depends on the area of contact (linear or geometric pattern of eczematous reaction)
- Lesions in initial stage show blisters, erythematous papules and plaques with excoriation

Fig. 6.3: Allergic contact dermatitis to tattoo pigment. Well-demarcated, erythematous, indurated, scaly plaques

- Lesions in later stage shows scaling with post-inflammatory hypo/hyperpigmentation
- Lesions subside within a few days to weeks, after the removal of causative agent.

HISTOPATHOLOGY (Figs 6.4 and 6.5)

Acute Stage

- Epidermal spongiosis
- Exocytosis of lymphocytes

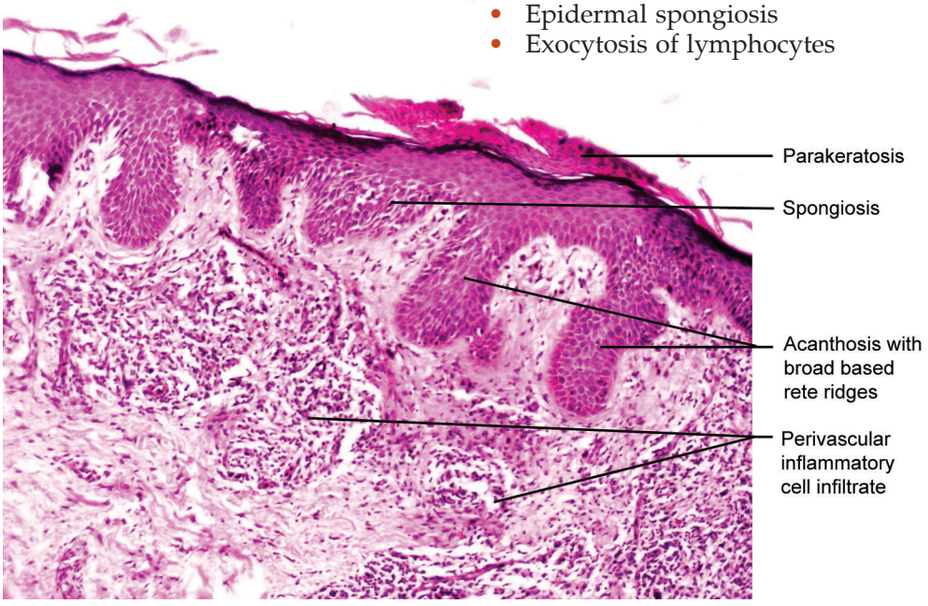


Fig. 6.4: Contact dermatitis