

DERMATOLOGY HIGH-YIELD

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She did her MBBS from Kasturba Medical College, Manipal University and secured **3rd rank with distinction**.

She topped NEET PG with **AIR 261** and chose Dermatology as her speciality, since then she has achieved various milestones in the field of Dermatology, which includes publishing more than 10 articles in various indexed national and international dermatology journals, she is a co-author in one of the chapter in VERY RENOWNED DERMATOLOGY TEXTBOOK. She had recently recieved the best original article 2018 award in an National conference held in Bangalore

DERMATOLOGY HIGH-YIELD by Chesta Ma'am focusses on the key concepts in dermatology which is high-yield in PGMEET, she has explained complete dermatology in an easy to read manner and have been hand-crafted with an obsessive attention to details, with aim of capturing the course's content in a way that's right for you. More than 150+ real case pictures and visual explanations are included to prepare you for the **NeXT Pattern**. **The notes are equally beneficial for PG Prep, FMGE Clearance and University Exams.**

“Good thing comes in small packets” - Master the short subjects to bag a good rank



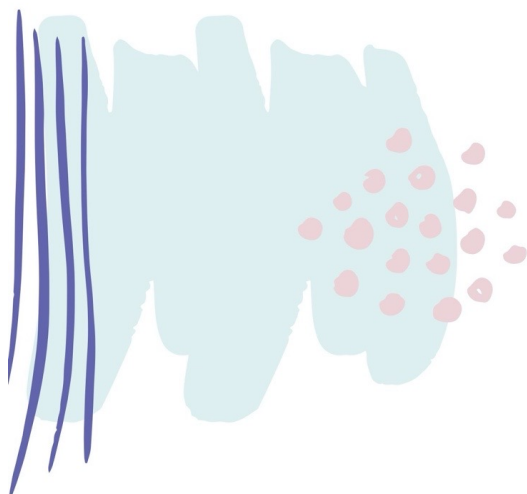
DERMATOLOGY
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- High-Yield points for quick recap
- 150+ clinical images
- NeXT pattern based
- Visual representation of concepts



Basics of Dermatology

SKIN consist of a unique three layered structured

1. EPIDERMIS

2. DERMIS

3. SUBCUTANEOUS TISSUE

MUST KNOW POINTS

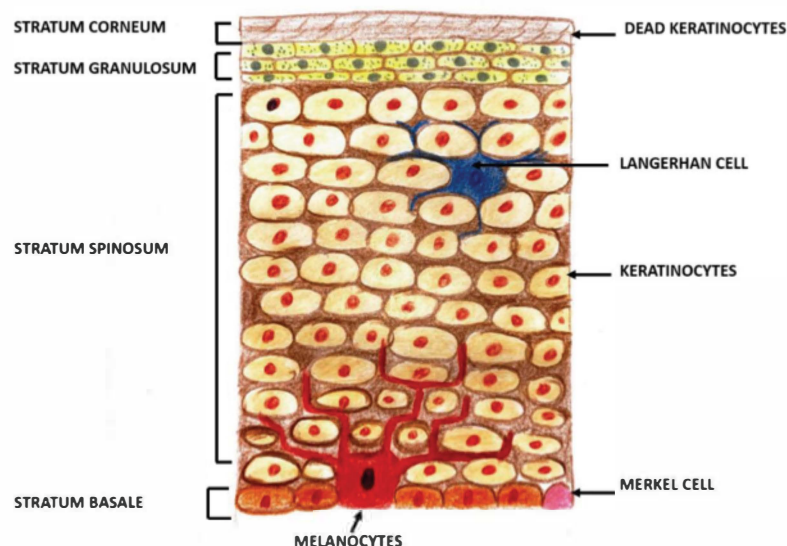
- Epidermis is made up of **STRATIFIED SQUAMOUS EPITHELIUM**
- Epidermis is **THINNEST** over **EYELIDS** and **THICKEST** over **PALMS and SOLES**.
- Surface area of Skin - **2m²**
- Weight of skin - **4 Kg**

EPIDERMIS

- Cellular layer (**KERATINOCYTES, MELANOCYTES, MERKEL CELL and LANGERHANS CELL**)

LAYERS OF EPIDERMIS

- Epidermis consist of distinct cellular layers which have been delineated from bottom upward as shown in Figure below -



STRATUM BASALE (STRATUM GERMINATIVUM)

- Lowermost layer that rest directly on **BASEMENT MEMBRANE ZONE**
- Consist of one layer thick nucleated keratinocytes (**COLUMNAR SHAPE**)^Q
- Capacity to divide [cell cycle time : **18-20 days (300Hr)**]
- **EPIDERMAL TURN OVER TIME** : The migration of keratinocytes from basal layer to the outmost layer (**52-75 days**)^Q.

STRATUM SPINOSUM (PRICKLE CELL LAYER)

- Consist of **polygonal, nucleated** keratinocytes
- Consist of **8-10 layers**
- connect by intercellular bridge called as **DESMOSOMES**^Q

MUST KNOW POINTS

- Cell cycle time is reduced to **30hrs** and Epidermal turnover time reduce to **4 DAYS** in **PSORIASIS**.
- In **PEMPHIGUS AUTOANTIBODIES** are formed against **DESMOSOMAL Components (DESMOGLEIN)**^Q
- **DESMOSOME** is made up of **DESMOGLEIN, DESMOCOLLIN, Plakin group of Proteins**
- **ACANTHOLYTIC CELLS** : Keratinocytes of STRATUM SPINOSUM

STRATUM GRANULOSUM

- consist of **KERATOHYALINE GRANULES**
- It consist of
 1. **FILAGGRIN** (KERATIN FILAMENT AGGREGATING PROTEIN)
 2. **ODLAND BODIES / MEMBRANE COATING GRANULES / LAMELLAR GRANULES** (consist of Lipids)

STRATUM LUCIDUM (CLEAR CELL LAYER)

- Translucent cell due to presence of Refractile granules (ELEIDIN)
- Present only in Palm and Sole

STRATUM CORNEUM (HORNEY CELL LAYER)

- Outermost cell layer
- Anucleated^Q and Flattened Cell^Q
- Forms the skin barrier^Q
- Last layer to develop and that is why in premature infants stratum corneum may be absent.^Q

MUST KNOW POINTS

1. Deficiency of FILAGGRIN : ICTHYOSIS VULGARIS
2. Deficiency of ODLAND BODIES : ASTEATOTIC ECZEMA
3. STRATUM MALPHIGII : The bottom 3 layers, viz. BASAL, SPINOUS, and sometimes granular layers are clubbed together.

CELLS OF EPIDERMIS

- | | |
|------------------|---------------------|
| 1. KERATINOCYTES | 3. LANGERHAN'S CELL |
| 2. MELANOCYTES | 4. MERKEL CELLS |

KERATINOCYTES

- constitutes 80% of Total cells of EPIDERMIS
- Presence of Keratin filament (HALLMARK)
- Origin: ECTODERM^Q

MELANOCYTES (PIGMENT FORMING CELLS)

- DENDRITIC Cells
- Present in STRATUM BASALE^Q

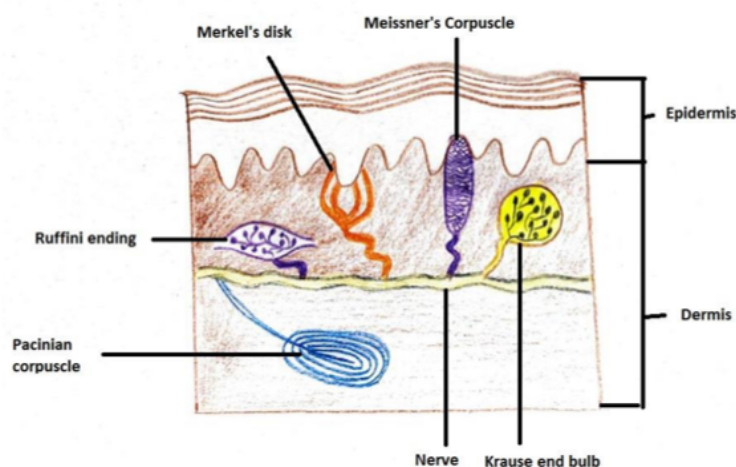
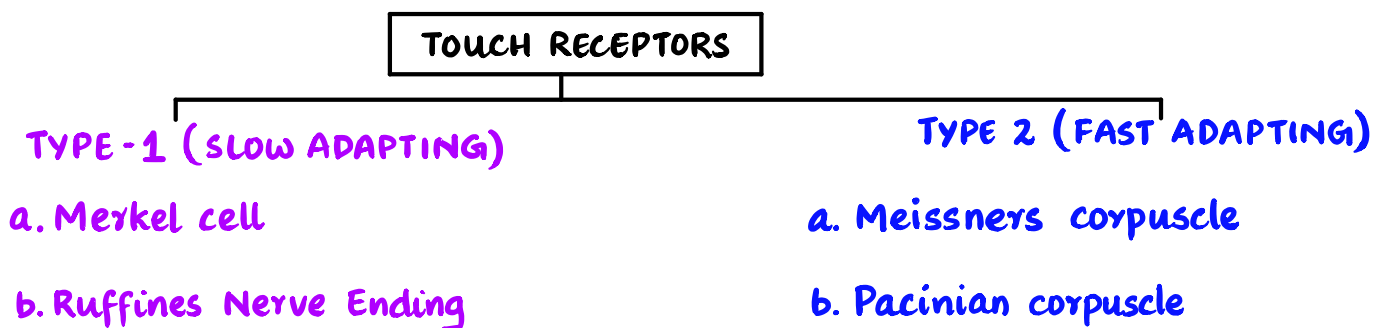
- Immigrant cells (Derived from **NEURAL CREST**)^Q
- Contain **MELANOSOMES** (Pigment containing organelles)
- **EPIDERMAL - MELANIN UNIT** : One melanocyte distributes pigment to 36 keratinocytes.

MUST KNOW POINTS

- **KERATIN** : present in form of **HETERODIMERS** (**TYPE 1** [ACIDIC No. 1-8] and **TYPE 2** [BASIC No. 9-19])
- Different shades of skin is due to
 - a. Difference in number, size and distribution of melanosomes
 - b. Difference in proportion of **EUMELANIN : PHEOMELANIN**
- Number of Melanocytes per square cm of skin is equal in all Normal individuals

MERKEL CELLS (SLOW ADAPTING TOUCH RECEPTOR)

- Present in **STRATUM BASALE (RETE RIDGES)**^Q
- Derived from **ECTODERM**



LANGERHAN'S CELL (ANTIGEN PRESENTING CELLS)

- Dendritic cell^Q
- Present in **STRATUM SPINOSUM**^Q
- Derived from **MESODERM (BONE MARROW)**^Q
- Consist of TENNIS RACQUET SHAPE / ROD SHAPED GRANULE - **BIRBECK GRANULES**
- MARKER : **CD1a, CD 207 (LANGRIN)**^Q, **S100**

CONDITION WHERE LANGERHAN CELL DECREASES :

- PSORIASIS
- SARCOIDOSIS
- CONTACT DERMATITIS

CONDITION WHERE LANGERHAN CELL INCREASES :

- LANGERHAN CELL HISTIOCYTOSIS

MUST KNOW POINTS

LANGERHANS CELL HISTIOCYTOSIS or HISTIOCYTOSIS - X

Subtypes :

1. EOSINOPHILIC GRANULOMA : Age < 8yrs

- Clinical features : Disease Localised to Bone (**Skull - (MC)**)

2. HAND SCHULLER CHRISTIAN DISEASE : Age < 5yrs

- TRIAD : Multiple Bone Cyst, Diabetes insipidus, Exophthalmos

3. LITTLER'S SIWE DISEASE : Age < 2yrs

- Generalised / Fulminant Course
- 80% Bone lesion
- 50% Skin lesions (SEBORRHEIC DISTRIBUTION)
- 30% Hepatosplenomegaly

4. HASHIMOTO PRITZKER DISEASE

- Present at the time of Birth
- Rare and Self limiting

HISTOLOGICAL TERMINOLOGIES

PARAKERATOSIS : Retention of Nucleus in cells of Stratum corneum^Q

- Examples :
- 1. Psoriasis
 - 2. Eczema
 - 3. Actinic keratosis
 - 4. Seborrhoeic dermatitis
 - 5. Squamous Cell Carcinoma

HYPERKERATOSIS : Increase in thickness of Stratum corneum

- Example :
- 1. Psoriasis
 - 2. Lichen Simplex Chronicus

DYSKERATOSIS : Abnormal keratinization

- Example :
- 1. Benign Conditions : **DARIER'S DISEASE**^Q, **HAILEY-HAILEY DISEASE**^Q
 - 2. Pre-Malignant conditions : **BOWEN'S DISEASE**^Q, **SOLAR/ACTINIC ELASTOSIS**^Q
 - 3. Malignant disease : **SQUAMOUS CELL CARCINOMA**

SPONGIOSIS : Extracellular oedema in Stratum spinosum

- Example : Acute Eczema

ACANTHOSIS : Thickening of stratum spinosum

- Example :
- 1. Psoriasis
 - 2. Chronic Eczema
 - 3. Lichen planus

HYPERGRANULOSIS : Increase in thickness of Stratum granulosum

- Example : **Lichen planus (WEDGE SHAPE)**^Q

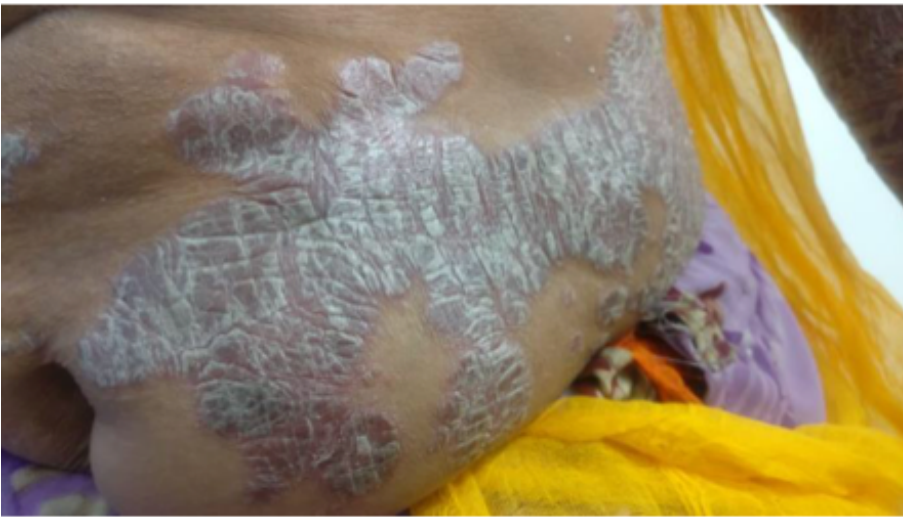
HYPOGRANULOSIS : Decrease / Absent Granular cell layer

- Example :
- 1. Psoriasis
 - 2. Ichthyosis vulgaris

WORONROFF'S RING - Hypopigmented rim surrounding the plaque
(Decrease in $PGI\ E_2$)

Site : **EXTENSORS** (Elbow, Knee, Lower back, gluteal cleft, **SCALP**^Q,
Palm and soles)

KOEBNER'S Phenomenon^Q seen (psoriatic plaque occurring at the site
of trauma)



MUST KNOW POINTS

- Psoriasis never involve **CENTRAL NERVOUS SYSTEM**^Q
- Never affect **MUCOSA**^Q (can cause
Geographic tongue/ Benign Migratory Glossitis)
- **NO ITCHING**^Q
- **ALOPECIA NOT SEEN**^Q

2. GUTTATE PSORIASIS : more frequent in **children**^Q

Clinical features :

- Abrupt onset, multiple small, coin shaped, **RAIN DROP**^Q like papules and plaques.

- Associated with upper respiratory tract infection (URTI)

Treatment :

- a. Self Resolving
- b. Antibiotics to eradicate the streptococcal carriage



GUTTATE PSORIASIS

3. INVERSE PSORIASIS

- Lesions over the flexures like axilla, groin etc
- NO SCALES^Q

4. PUSTULAR PSORIASIS

- On sudden withdrawal of SYSTEMIC STEROIDS^Q
- Sterile pustules at SUBCORNEAL LEVEL^Q
- Generalized pustules fuse to form LAKES OF PUS^Q or sheets of pus.

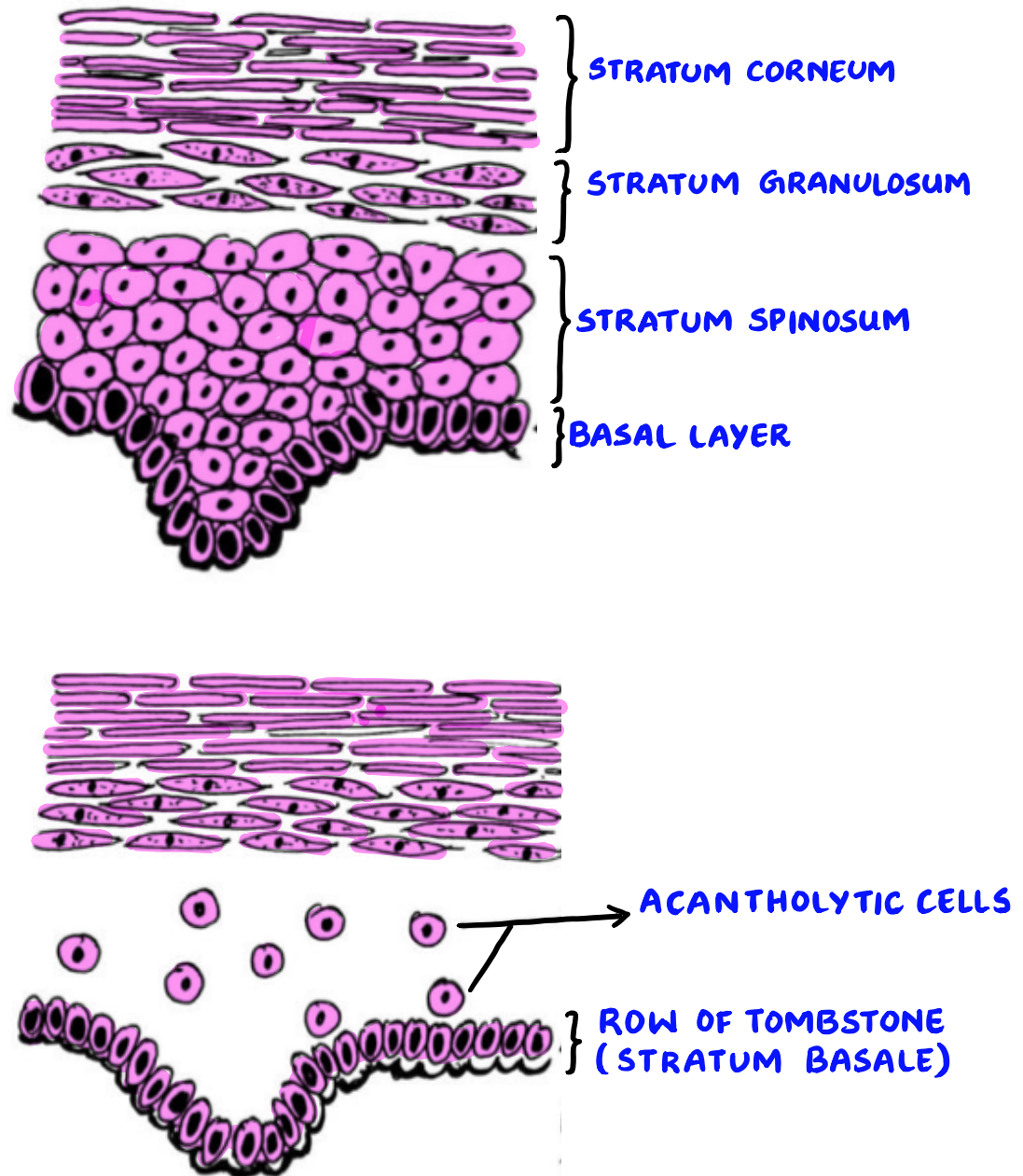


Generalized Pustular Psoriasis

ACQUIRED BLISTERING DISORDERS

A. PEMPHIGUS VULGARIS :

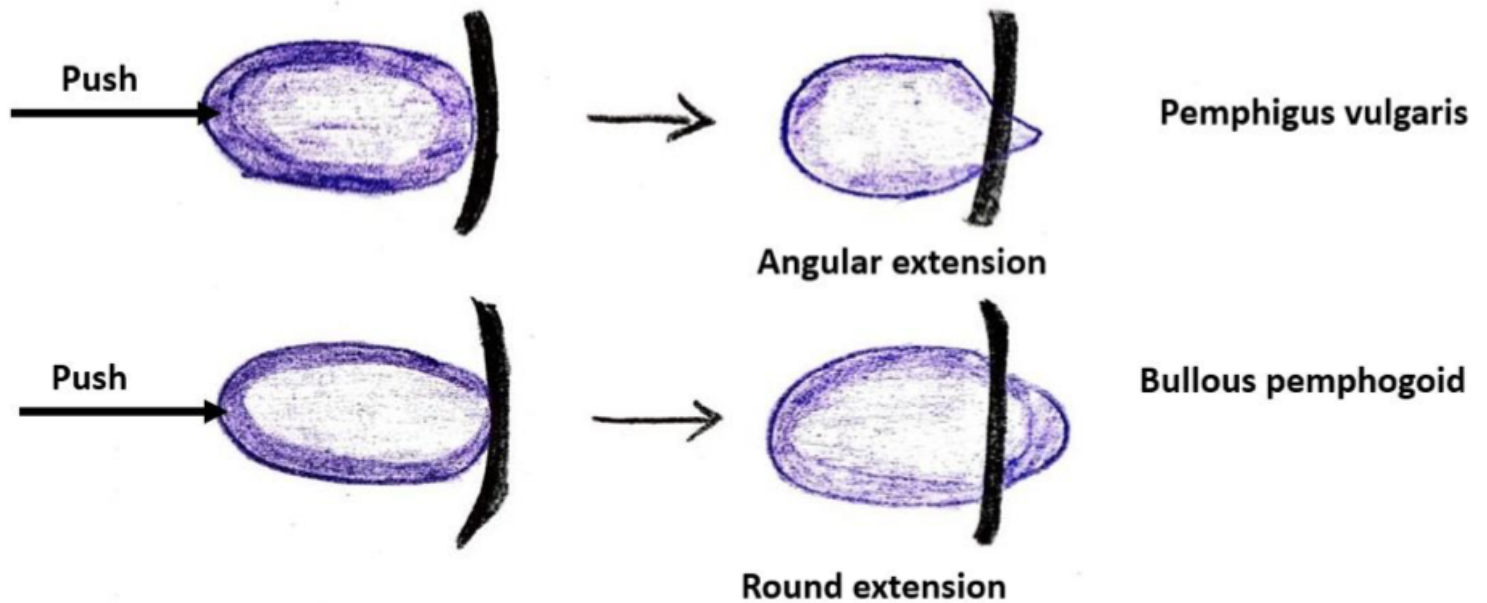
- Autoimmune Blistering Disorders
- Antibodies (IgG) against Desmosome (intercellular adhesion substance) leading to separation of cells (ACANTHOLYSIS)



TYPES OF PEMPHIGUS

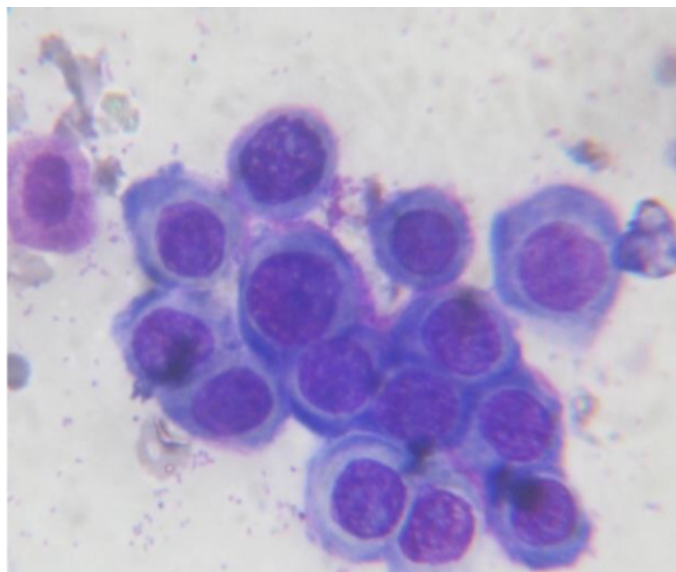
1. PEMPHIGUS VULGARIS (PV): Most common

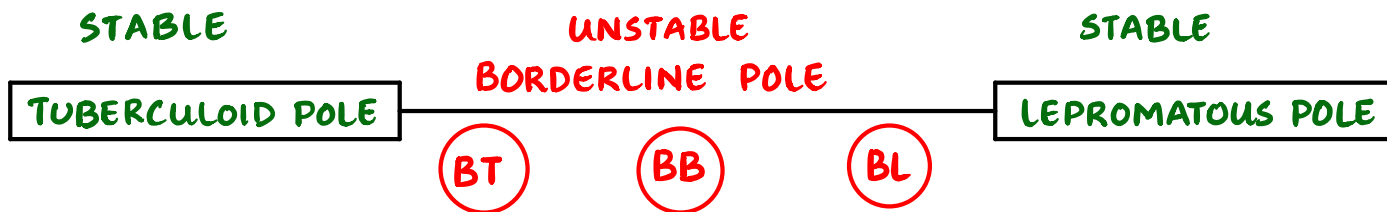
- Autoantibodies against DESMOGLEIN (Anti Dsg 3 >> Anti Dsg 1)



DIAGNOSIS -

- **TZANCK SMEAR** -
- Scrap the base
- Stain with giemsa stain
- **ACANTHOLYTIC CELLS^Q** (Round keratinocyte with large hyperchromic nucleus and perinuclear halo)





- GOOD CMI
- No/LOW AFB
(Paucibacillary)
- Slit Skin Smear (Negative)
- Lepromin Test (Negative)

- POOR CMI
- HIGH AFB
(Multibacillary)
- Slit Skin Smear (Positive)
- Lepromin Test (Positive)



TT LEPROSY



Infiltration of Ear Lobe: LL Type



Borderline leprosy : Punch out lesion