(Dermatopathology).

LAQ-1 :- Diagnosis of ~~vesiculobullous~~ cutaneous lesions by Light microscopy and immunofluorescence technique.

Answer:-

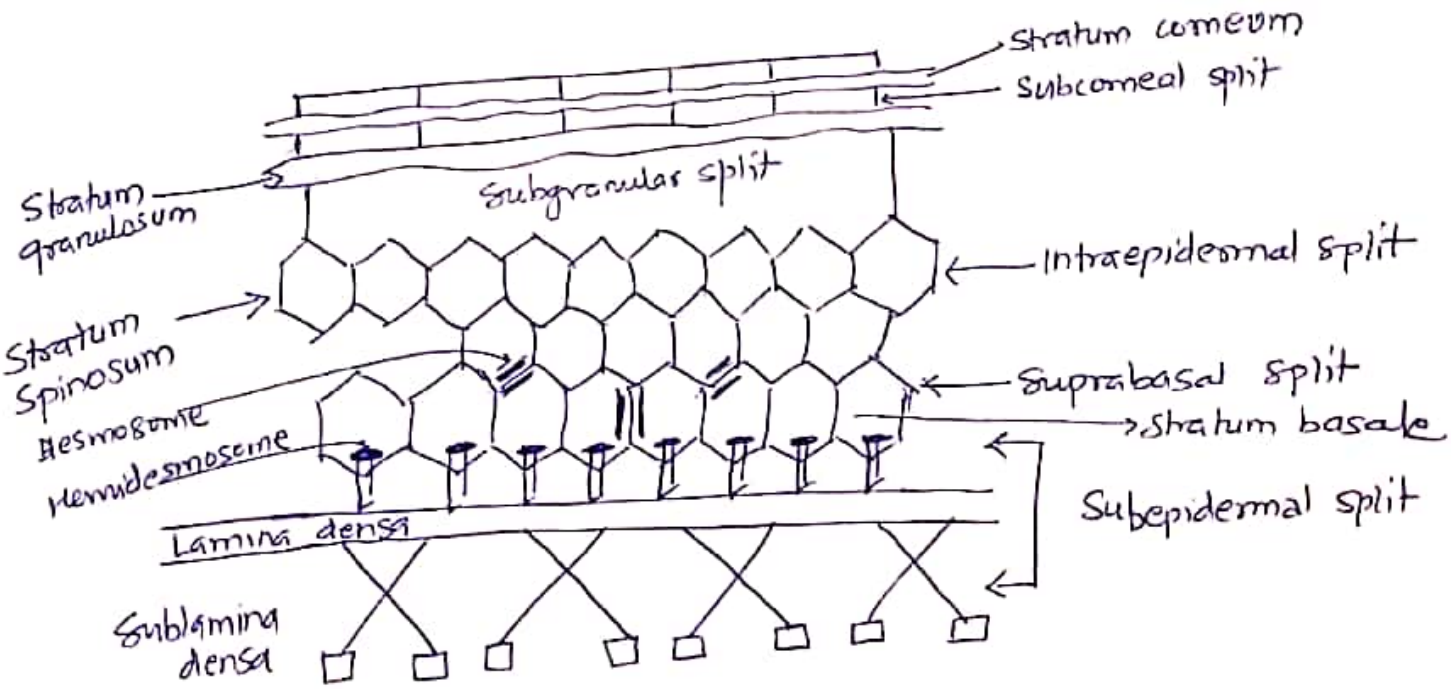
- **Classification of vesiculobullous lesions,**

Intraepidermal Blisters
↓
Thin, Flaccid blisters which Rupture easily
↓
Erosion, scaling, crusting

Subepidermal blisters
↓
Tense bullae
↓
Base Devoid of any pigmentation.

Other factors :-

Scaling, crusting, pustules, Scarring, Hemorrhagic, petechiae



- **Veside**
  - Sick? → yes → systemic illness (Infection / Drug)
  - NO
    - Age? → Neonate / child
      - Family History
      - Distribution? → Localised / Generalised

- Blistering in neonate → mostly a/w Non-infectious transient conditions.

Diagnostic approach in Adults

Distribution (Lesion morphology) Systemic association

- Autoimmune or genetic
- Infections, drugs, systemic diseases metabolic, nutritional

vesicals pustules

- Grouped on erythematous base → Multinucleated giant cells
  - HS, HZ
    - Herpes Simplex
    - Herpes zoster.
- Vesides + Honey coloured crusts → gm+ve bacteria → non-bullous impehgo
- papules + pustules, vesides crust → TS-mng → Varicella
  - -ve → palms & soles → PLEVA
- painful papulovesicles with ulceration → fingers, forearm, face
  - ORF / cow pox

Assignment (3)

(3)

papulovesicles with itching

↓

photodistributed

↓

PLE, or H/o drug / chemical photoallergy

papulovesicles, bullae

↓

Linear exposed sites

↓

phytodermatitis (poison IVY).

Flaccid vesicles with pustules

↓

Flexural areas

↓ TZ-acantholytic cells

Hailey-Hailey disease

Vesicles, pustules, erosions

↓

Eczematous areas widespread

↓ fever, H/O skin diseases.

Kaposi's, varicelliform eruption, eczema herpeticum

Localized vesiculobullous lesions

photodistributed

Vesicle
Bulla
Diarrhea
Dementia

↓

pellagra

Tense bullae c scarring milia

wine porphyria → PCT

pseudoporphyria

Sunburn, erythema, edema, c hyperpigmentation

↓

phototoxic dermatitis.

Erythema Swelling Tenderness, blisters.

↓ Legs

Erysipelas cellulitis.

palpable purpura

↓

Dependent areas

↓ H/P; vasculitis.

CSVV

Deep seated vesicles
itching

↓

palms, fingers, sole

↓ spongiosis

Vesiculobullous
palmoplantar eczema

present over friction sites

↓

friction blisters
EBS
Bullous diabeticorum.

Macules, plaques, bullae

↓ H/o recurrent lesions

Healing with hyperpigmentation

↓

Genital, perioral

↓

FDR

Bulla. with central scarring

↓

face, intertriginous, arms

↓ Gm stain +ve

Bullous Impetigo.

• Generalized vesiculobullous lesions

↓

mucosal lesions
(Nikolsky sign +ve)

↓

TZ; acantholytic cells

↓

Intraepidermal blistering
(pemphigus).

H/o drug intake

↓

SJS, TEN

Tense blisters, scarring & mucosal erosions

Nikolsky -ve

- Elbows, knees, hands, feet → EBA
- Widespread blisters → +ve ANA → BSLE
- Grouped annular lesions → IF / Linear IgA → LABD

Grouped papulovesicles

Itching → Dermatitis Herpitiformis

Tense blisters, grouped

- umbilicus
- pregnancy → pemphigus gestationalis

purpura / necrosis / hemorrhagic bullae

- DIC → Gangrene & meningitis → purpura fulminans
- Infarct lesion eschar erythema → ecthyma gangrenosum
- Joint pain → Disseminated gonococcal infection.

Bulla with Lichen planus

- LP-like lesions → DIF -ve → Bullous LP
- Sudden bulla involved + uninvolved skin → IF +ve → Lichen planus pemphigoides.

Macules | Erythroderma | bulla

↓

with diarrhoea, H/O blood transfusions organ transplatation

↓

Acute GVHD

verrucous bullous lesions

↓

H/o internal malignancy other systemic disease

↓

Neutrophilic dermatoses (paraneoplastic syndrome)

Lab diagnosis → → Tzanck smear
→ Histopathology

Confirmatory → Immunofluroscence
→ Antigen mapping
→ Electron microscopy

Tzanck Smear :- ① Infections

Herpes simplex → Multinucleated giant cells

Bullous impetigo / SSSS → Acantholytic cells.

② Non-infectious conditions

Acantholytic cells → pemphigus Hailey-hailey do.

Eosinophils → ETN / Athropod bites

Neutrophils → Acropustulosis of infancy

Histiocytosis ℃ reniform nucleus → congenital self-healing LCH.

Histopathology

Levels of blisters

Intraepidermal

① Subcorneal + Acanthosis
- PF, PE, IgA pemphigus – eosinophils
- SSSS, BI – neutrophils.

② Spinous layer → viral → Ballooning degeneration

③ Suprabasal layer → pemphigus vulgaris
- ↓ eosinophilic spongiosis.
- Dilipidated brick wall → hailey hailey disease.

④ Basal layer with full thickness epidermal necrosis → TEN.

Subepidermal

minimal inflammatory infiltrate
① PCT: extension of dermal papillae from floor into cavity of bulla.
② EBA, EB.

predominant Eosinophilic infiltrate
→ Bullous pemphigoid

predominantly neutrophilic infiltrate
① DH – neutrophils in dermal papillae
② CBDC – mixed eosinophils & neutrophils
③ Scarring – EBA

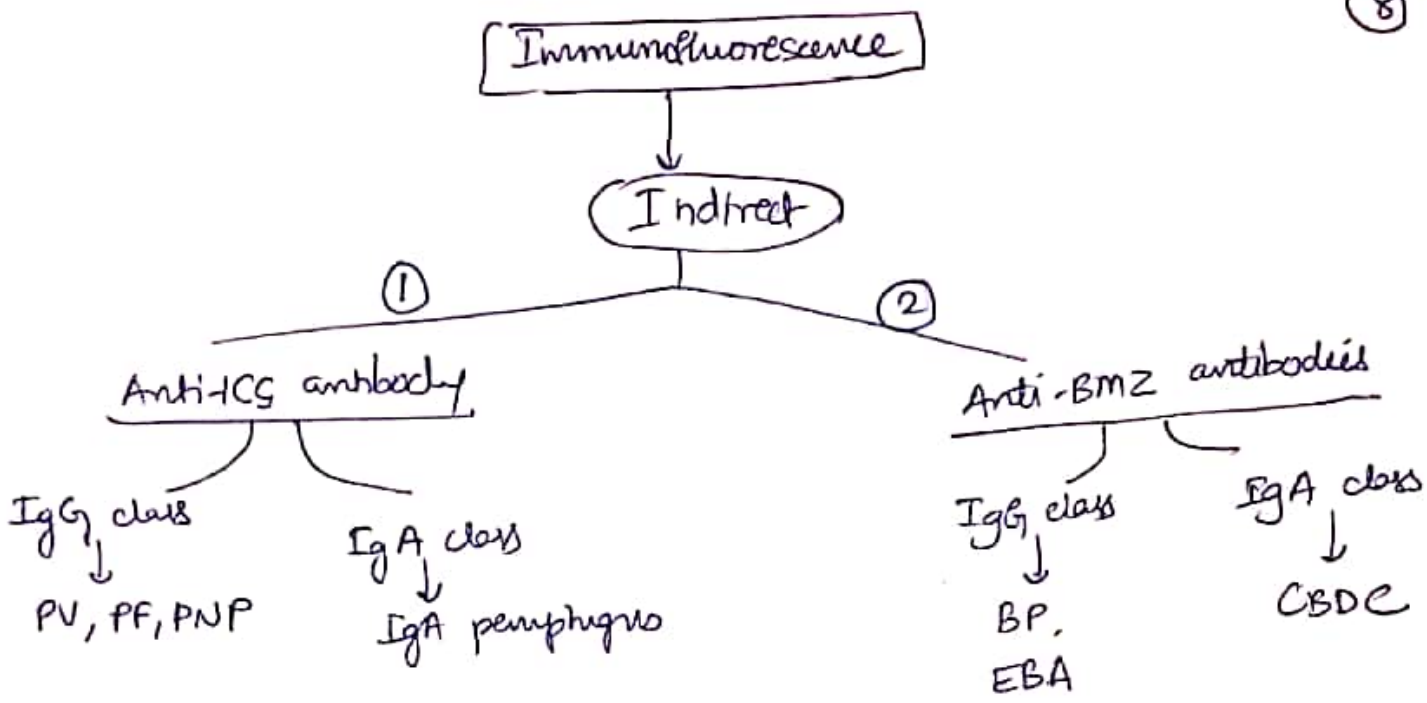
Immunofluorescence

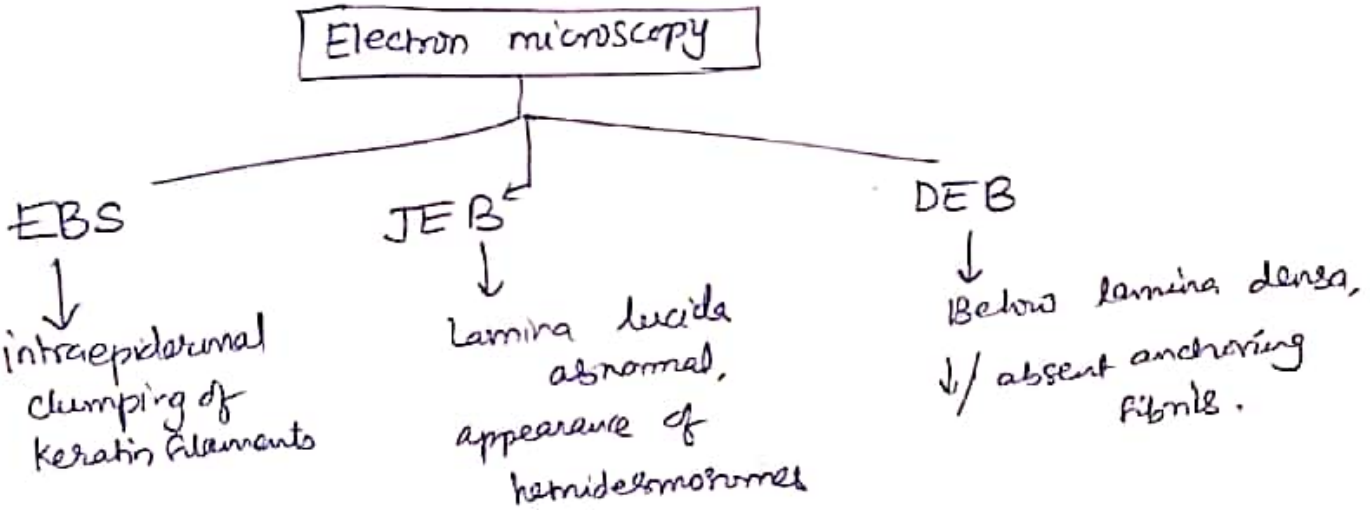
DIF (IgA deposition in ICS only)
- pemphigus vulgaris
- pemphigus foliaceus
- PNP

DIF (IgA deposition in BMZ)
- IgA, C3
  - granular speckled fibrillar dermal papillae → DH
- linear continuous homogenous
  - ↓ CBDC

DIF (IgA deposition in ICS & BMZ)
- ↓ PE

DIF
- ↓ IgG deposition
  - BMZ & vessel wall
    - ↓ IgG + other immunoreactants (IgM's, A1, C3) in homogenous pattern
    - ↓ PCT, EPP
  - BMZ deposition alone.
    - ↓ IgG in linear, wavy, tubular
    - ↓ Bullous pemphigoid





SHORT NOTE ⇒ Q2) Discuss cutaneous lymphoproliferative disorders. (classification & diagnosis) (9)

Answer :→

(I) Classification

- **Primary Lymphomas** → that present in the skin with no evidence of extra cutaneous disease at the time of diagnosis
- **Secondary lymphomas** → Systemic lymphomas that secondarily involve the skin

- **WHO / EORTC classification**

A) Cutaneous T-cell & NK-cell Lymphomas

1. mycosis fungoides (MF)
2. mycosis fungoides variants & subtypes
   - folliculotropic MF
   - Pagetoid reticulosis
   - Granulomatous slack skin.
3. Sezary syndrome
4. Adult - T- cell lymphoma
5. primary cutaneous CD30 + Lymphoproliferative disorders
   - 1° cutaneous anaplastic large cell lymphoma
   - Lymphomatoid papulosis
6. Subcutaneous panniculitis like T-cell lymphoma
7. Extranodal NK/T-cell lymphoma, nasal type
8. primary cutaneous peripheral T-cell lymphoma, unspecified
   - 1° cutaneous Aggressive Epidermotropic CD8+ T-cell lympho
   - cutaneous γ/δ- T-cell lymphoma
   - 1° cutaneous CD4 + small / medium sized pleomorphic T-cell - lymphoma.

B] Cutaneous B-cell Lymphomas

- 1° cutaneous follicle centre lymphoma (1° CFCL)
- primary cutaneous marginal zone B-cell lymphoma (PCMZBL)
- 1° cutaneous diffuse large-B-cell lymphoma, leg type (1° CD LBCL)
- 1° cutaneous diffuse large B-cell lymphoma, other (1° CD LBCL, O)
- Intravascular large-B-cell lymphoma (ILBCL)

C] Precursor Hematologic Neoplasm

CD4 / CD56+ hematodermic neoplasm (blastic NK-cell lymphoma)

(11)

Diagnostic features →

(1) mycosis fungoides (MF)

M/F → Cerebriform nuclei
→ Pautrier microabscesses.

Immunophenotyping → CD2+, CD3+, CD5+, CD4+, CD8-, CD7- & usually CD30-

(2) Folliculotropic mycosis fungoides

M/F → Folliculocentric infiltrate with mucinous expansion of the follicle
→ monomorphic containing cerebriform CD4+ lymphocytes

(3) pagetoid Reticulosis (Woringer - Kolopp disease)

→ Solitary / Acral lesion
→ M/F → Exclusive epidermal infiltration.
→ mononuclear convoluted T-cells
→ pagetoid pattern with / without intraepidermal nests
→ Epidermal hyperplasia
→ Hyperkeratosis.

④ Sezary syndrome → Diffuse skin erythema & lymphadenopathy ⑪

→ M/F → band-like papillary dermal lymphoid infiltrate
→ lack epidermotropism
→ more monomorphic cells.
→ dense perivascular + superficial.

→ P.B.S → atypical lymphocytes ⇒ Lutzner cells (smaller) & classical sezary cells (larger).

⑤ 1° cutaneous CD30+ LP. Disorders :-

- 1° CALCL → solitary nodules, >/ 2cm, ulcerated, red brown tumours.
  → M/F → sheets of cohesive CD30+ atypical cells.
- Lymphomatoid papulosis → type of self-healing skin eruption of erythematous papules.

⑥ 1° cutaneous aggressive epidermotropic CD8+ cytotoxic T-cell lymphoma.

M/F → medium to large pleomorphic cells.
→ Epidermis → ulcerated + necrotic keratinocytes + spongiosis.

⑦ Adult-T cell Leukemia / lymphoma.

→ A superficial / diffuse infiltrate of pleomorphic multinucleate T-lymphocytes & prominent epidermotropism is seen

⑧ Extra nodal NK/T-cell lymphoma, nasal type:

M/F → medium sized pleomorphic lymphocytic infiltrates are present in dermis & subcutis & show prominent localization & destruction of blood vessels.

⑨ Cutaneous B-cell lymphoma

⑨ 1° CFCL → one to several red to plum coloured plaques, nodules, tumours.
→ M/F → cutaneous infiltrates are nodular or diffuse, usually sparing the epidermis.

⑩ 1° CDLBCL (Leg) → Red & blue nodules on leg
→ M/F → Diffuse dense non-epidemotropic monotonous infiltrates of predominantly medium to large cells & round nuclei, frequent mitoses resembling centroblasts, large centrocytes & immunoblasts.

(11) 1° CMZBCL → Nodular / Diffuse infiltrates of small lymphoplasmacytoid cells, small lymphocytes, & plasma cells (+).

(12) ILBCL → violet patches / plaques on the legs / trunk
→ M/F → dermal & subcutaneous blood vessels are dilated & stuffed ē tumour cells that are somewhat pleomorphic.

(13) Mantle-cell lymphoma → rare in skin.

Assignment (3)

Short note Q3 :→

L, Premalignant lesions of skin.

Answer:→ (1) Actinic keratosis :→

→ Excessive exposure to sunlight over many years & inadequate protection against it are predisposing factors
→ < 1cm diameter, Erythematous.
→ Can develop into Squamous cell carcinoma. (But doesn't metastasize)

(2) Oral Leukoplakia →

→ White patch / plaque
→ Etiology is chemical chronic irritation through tobacco (or) through dental stumps.
→ Slightly elevated / sharply demarcated with an irregular outline.
→ Out of 100% oral leukoplakia

- 80% Benign
- 20% malignant
  - 17% (Dysplasia) Carc. in situ
  - 3% Infiltrating SCC

→ M/S → Squamous epithelium is hyperkeratotic & acanthotic

(3) Bowens disease:→

→ Solitary, & can form lesions of Epidermodysplasia verruciformis caused by HPV-5
→ M/S → Epidermis is irregularly thickened. The (N) maturation pattern is effaced.

(4) Erythroplasia of Queyrat →

→ Seen exclusively on uncircumscribed men
→ Asymptomatic, sharply demarcated, bright red, shiny.
→ progression into squamous cell carcinoma
↓
30% patients
(20% merastasize).

(5) Bowenoid papulosis →

→ Penile shaft / multicentric
→ papules coalesce to form plaques that resemble Condyloma acuminata.
→ Varying degrees of hyperkeratosis / parakeratosis / Viregular acanthosis & papillomatosis

(6) Arsenical keratosis → Cutaneous Carcinomas (+) < SCC / BCC
→ verrucous papules without surrounding inflammation.

(7) Marjolin's ulcer → An aggressive ulcerating SCC presenting in an area of previously traumatized, chronically inflammed / scarred skin.

(8) Paget's disease (of breast) → Epidermis is permeated with numerous paget cells lying singly & in groups.
→ There is no invasion of dermis by paget cells.

(9) Xeroderma pigmentosum → Autosomal Recessive
→ Nucleotide excision repair enzyme are mutated
→ Sq. cell. C, basal cell epithelioma, & rarely fibrosarcoma & malignant melanoma.

(10) **Spitz Nevus** → Benign Juvenile melanoma & Spindle & epitheloid cell nevus.

mc'in → Lower extremeties & face.

→ Dome-shaped, hairless, small pink nodule.

M/S → prominent intraepidermal component composed of spindle cells, epitheloid cells or an admixture of both.

→ Reed nevus (malignant)

(11) **Dysplastic Nevus** → Compound nevi exhibiting marked lentiginous proliferation of melanocytes at the dermoepidermal junction.