occassional eosinphils
Case 28: Summary

- Spongiotic: Acute vesicular
- Perivascular lymphocytes
- Occasional eosinophils
A vase-like shape characterizes the epidermal-mononuclear cell collections seen in spongiotic dermatitis.

LeBoit PE, Epstein BA.

Summary Histology

- Vase like collections of mononuclear cells with associated spongiosis
- Moderately dense superficial perivascular lymphocytic infiltrate
- Occasional eosinophils

Diagnosis: Clinicopathological correlation
Favours spongiotic drug reaction
Drug Eruptions: General 1

- Diverse clinical & histological
- Vary from single patch or plaque to erythroderma
- Virtually every histological pattern
  - Perivascular dermatitis
  - Nodular and diffuse dermatitis
  - Vasculitis
  - Vesicular dermatitis (intra- and sub-epidermal)
  - Pustular dermatitis
  - Peri-infundibulitis and perifolliculitis
  - Fibrosing dermatitis
  - Panniculitis
Drug Eruptions: General 2

- Occasionally characteristic clinically & histologically
  - Fixed drug eruption
- May closely simulate authentic dermatoses
  - Lichen planus
  - Pityriasis rosea
  - Measles
Clues to Drug Reaction

CLINICAL
• Widespread, bilateral, symmetrical distribution
• Do not correspond to any well-defined disease

HISTOLOGICAL
• Do not correspond to any well-defined disease
• Eosinophils are often present
• Eosinophils may be abent: e.g. erythema multiforme
• MIXED PATTERNS CONSIDER
  – Drugs
  – Syphilis
  – Mycosis Fungoides
Differential for BSD Workshop

- Drug reaction
- Pityriasis rosea
- Allergic contact dermatitis
- Pityriasis lichenoides
- Mycosis fungoides
Pityriasis Rosea

- More generalised eruption follows over 7 to 14 days
- Pink scaly lesion ~ 1cm
- Blaschko line distribution (fir tree)
- Progresses in distribution over 2 – 3 weeks, lesions persist for 2 – 3 weeks, then fade over 2 – 4 weeks
- Variants: Papular, vesicular, bullous, urticarial, haemorrhagic
Pityriasis Rosea

- 10 to 35 years
- Aetiology: probably infection/viral
- Acute onset oval papulosquamous lesions
- Herald patch usually (48 hrs)

Clinical Image removed from Presentation
Pityriasis Rosea: Histology

- Non-specific subacute dermatitis
- Focal hyperkeratosis
- Angulated (lens shaped) parakeratosis (absent granular layer)
- Mild spongiosis (vesicles rare)
- Slight acanthosis
- Intraepidermal cytoid bodies (50%)
- Lymphohistiocytic superficial perivascular infiltrate
- Extravasated RBC common
- +/- Scattered eosinophils
F42. ??lupus, ?psoriasis, ?pityriasis rosea, ?reticulate atrophic pigmentation
c/w Pityriasis Rosea
Pityriasis Rosea: Differentials

- Eczematous Group: Acute/Subacute
- Guttate psoriasis (neutrophils in stratum corneum)
- Drug reactions (long list)
- Erythema annulare centrifugum (indistinguishable histologically)
‘Types’ of parakeratosis - Weedon

- **Mound-like**
  - Pityriasis rosea, erythema annulare centrifugum
- **Confluent, thick zones**
  - Psoriasis, pityriasis lichenoides, glucagonoma, deficiency states, granular parakeratosis
- **With neutrophils**
  - Psoriasis, dermatophyte, secondary bacterial infection
- **Overlying orthokeratosis**
  - Healing lesion or intermittent activity
- **Alternating with orthokeratosis**
  - ILVEN; horizontal plane only
  - PRP; horizontal and vertical
- **Perifollicular lipping**
  - Seborrhoeic dermatitis, PRP (follicular lesions), facial spongiotic processes or facial psoriasis
- **Cornoid lamella**
  - Porokeratosis
Differential for BSD Workshop

- Drug reaction
- Pityriasis rosea
- **Allergic contact dermatitis**
- Pityriasis lichenoides
- Mycosis fungoides
Contact Dermatitis

Suggested by history, distribution & enquiry occupational exposure

- Allergic (eosinophils)
  - Cell mediated hypersensitivity reaction
  - Metals, synthetic rubber, plants/vegetation, topical medicines
  - Patch testing

- Irritant (neutrophils)
  - More common
  - Physical/chemical damage
  - Acute: potent irritant e.g. Acid/alkali
  - Chroinic: cummulative effect of mild irritant e.g. soap
Differential for BSD Workshop

- Drug reaction
- Pityriasis rosea
- Allergic contact dermatitis
- Pityriasis lichenoides
- Mycosis fungoides
Pityriasis Lichenoides

• Uncommon
• ?hypersensitivity reaction to infections
  – Adenovirus, toxoplasmosis, EBV, Mycoplasma pneumoniae, HIV
  – Parvovirus B19 DNA (30%)
    • Tomasini et al J Cutan Pathol 2004
• Acute ulceronecrotic form:
  – Pityriasis lichenoides et varioliformis acuta (PLEVA) aka Mucha Haberman Disease
• Chronic scaly papular form
  – Pityriasis lichenoides chronica (PLC)
Pityriasis Lichenoides

- M:F ratio 3:1
- Late childhood to young adults
- Arms, Legs, Trunk & Buttocks
- Asymptomatic or mild itching/burning
- Onsent usually insidious and episodic “crops” of lesions
- Duration variable from months to years
- Seasonal variation (worse in winter)
Pityriasis lichenoides: Acute Lesions

- Crops of pink papules
- May form vesicles or be haemorrhagic
- Ulcerate with necrosis
- Heal with superficial “varioliform” scars
- Depigmentation common
- Lesions are polymorphic (different stages)
  - Cf guttate psoriasis & lichen planus
- May have pyrexia and lymphadenopathy
- Rare febrile ulceronecrotic variant (with systemic manifestations)
PLEVA Histology

- Marked inter- and intra-cellular oedema
- Keratinocyte necrosis
- Interface changes
- Vesiculation/ulcerations
- Prominent exocytosis of lymphocytes
- Red cell extravasation (intra-epidermal)
- Oedematous upper dermis with chronic inflammatory cell infiltrate sparse to dense, typically “wedge-shaped” (established lesions)
- Dilated and congested superficial vessels
- Rarely fibrinoid necrosis in vessels
Pityriasis Lichenoides: Chronic Lesions

- Numerous, lichenoid, brown/red scaly papules
- 3 to 10mm
- Scale accentuated peripherally “mica”
- Usually heal without scarring
- May be associated with depigmentation
PLC Histology

- Parakeratosis sometimes with collections of lymphocytes
- Slight acanthosis
- Occasional necrotic keratinocytes
- Interface lymphocytic infiltrate
- +/- Spongiosis
- Perivascular lymphocytic infiltrate
- +/- RBC extravasation
Definitions: Spongiotic

- Intercellular oedema (epidermis &/or epithelial structures of adnexa)
- Separation of spinous cells
- Intercellular bridges conspicuous
- Sprinkling of inflammatory cells
  - Usually lymphocytes
  - +/- Eosinophils
  - +/- Neutrophils
Spongiotic: Superficial Perivascular Lymphocytes with Eosinophils

- Allergic contact / Discoid eczema / Pompholyx / Id Reaction
- Arthropod
- Drug reactions

- Pruritic urticarial papules and plaques of pregnancy (PUPPP)
- Bullous pemphigoid / Pemphigoid gestationis
- Pemphigus vulgaris (urticarial)
- Incontinentia pigmenti
- Toxic erythema of the newborn
General (Algorithmic) Approach

Dr A. Bernard Akerman
c/o Richard Perry/The New York Times
Ackerman: Algorithmic Approach

- Identify one of the (nine) patterns
- Refer to the algorithm for that pattern
- Follow the branches of the algorithm to a specific diagnosis
- Read up the features of the diagnosis and correlate with clinical and histological details of the case.
- If the diagnostic criteria are not fulfilled, go back to the algorithm and start again.
Drug reaction

Drug reaction
Eczematous (Spongiotic) Dermatitis

- Clinical group characterised by
  - Pruritic vesicles,
  - Rupture forming crusts
  - Erythematous base
  - Become “lichenified” in chronic cases

Clinical Image removed from Presentation
# Eczema “aetiological” Groups

<table>
<thead>
<tr>
<th>ENDOGENOUS</th>
<th>EXOGENOUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Atopic dermatitis</td>
<td>- Allergic contact</td>
</tr>
<tr>
<td>- Seborrhoeic dermatitis</td>
<td>- Irritant contact</td>
</tr>
<tr>
<td>- Discoid (nummular) dermatitis</td>
<td>- Infective (S. aureas)</td>
</tr>
<tr>
<td>- Hand eczema (dishidrotic, pompholyx)</td>
<td>- Asteatotic eczema</td>
</tr>
<tr>
<td>- Autosensitization (Id) reaction</td>
<td></td>
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</tbody>
</table>
Eczematous (Spongiotic) Dermatitis: Histological Subclassification

- **Acute**
  - Vesiculation and bullae
- **Subacute**
  - Acanthosis, spongiosis and vesicles common
- **Chronic**
  - Spongiosis (subtle), vesicles uncommon
  - Psoriasiform epidermal acanthosis
Spongiosis

Vesicle (Acute)

- Accumulation of fluid within the epidermis leads to a vesicle
Subacute/Chronic Spongiotic Psoriasiform (Lichenified “eczematous”)

RAC3254
Spongiotic Dermatitis: Late

- Chronic rubbing and scratching leads to scaly and thickened lesions
  - Lichenification dominates
  - Psoriasiform pattern with minimal spongiosis

Clinical Image removed from Presentation
Other Conditions with Spongiosis

- Pityriasis rosea
- Erythema annulare centrifugum
- **Superficial fungal infection** (dermatophytosis)
- Bullous pemphigoid/Herpes gestationis (early)
- Pruritic urticarial papules and plaques of pregnancy

- **Erthema multiforme**
- Miliaria rubra
- Guttate parapsoriasis
- Acral papular eruption of childhood
- Lichen striatus
- Insect-bite reaction
- Prurigo nodularis
- Grover’s Disease
- Mycosis fungoides
- Psoriasis
When to Do PAS

- Clinical suspicion
- Spongiotic
- Psoriasiform
- Mucocutaneous (including lichenoid)
- Neutrophils in cornified layer
- Invisible dermatosis (tinea)
- Pustulating granulomas
- ?Lupus, dermatomyositis, Lichen Sclerosus
  - Basement membrane
Learning Points: Report Style

- **Consise description**
  - Pattern and cells
  - Specific features top to bottom
- **Special stains**
  - List and results
- **Offer suggestions in order of probability**
- **Suggest clinicopathological correlation**
- **Clinical investigations or follow-up often clinch the final diagnosis**
Differential for BSD Workshop

- Drug reaction
- Pityriasis rosea
- Allergic contact dermatitis
- Pityriasis lichenoides
- Mycosis fungoides
  - See presentation for Case 26