



Practical approach of cutaneous vasculitis

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Cutaneous vasculitis

- Vasculitis: inflammation and destruction of blood vessels



isolated finding

Skin vasculitis



sign of systemic vasculitis



manifestation of important disease

- CTD: SLE, Sjogren syndromr, RA, Dermatomyositis
- Infection, malignacy

Cutaneous vasculitis

- ACR 1990: *Hypersensitivity vasculitis*
- *Cutaneous leukocytoclastic vasculitis*
- CHCC 2012 : *cutaneous leukocytoclastic angitis*
- *(base of size, not special features)*

Cutaneous small vessel vasculitis CSVV

Collaborative effort are still needed to share classification and diagnostic criteria*

* Un update on nomenclature for cutaneous vasculitis- **Current Opin Rheum 2019**

Cutaneous small vessel vasculitis CSVV

- CSVV must be considered initially a symptoms
- *M*ust first R/O potential systemic manifestations
- *M*ust rule out underlying causes
- May start with skin but develop over time
- *M*ust follow up carefully

Skin lesions suspicious to vasculitis

- Many Pt first visited by GP or Dermatologist
- Consult rheumatologist
- Definite case of CVD: RA, SLE, Sjogren

General approach to vasculitis presenting in skin

- Careful clinical examination
- Histology

Clinical manifestations depend on size of vessel

Classification selected vasculitides by vessel size

<i>Affected vessel</i>	<i>classification</i>	<i>subclassification</i>
<i>Small</i>	<i>cutaneous small vessel</i>	<i>idiopathic</i>
		<i>infection</i>
		<i>medical exposure</i>
		<i>underlying CTD</i>
	<i>small vessel special type</i>	<i>IgA vasculitis (HSP)</i>
<i>Small and medium</i>	<i>urticaria vasculitis</i>	
	<i>type II, III</i>	
<i>Medium</i>	<i>Cryoglobulinemic</i>	<i>GPA, EGPA, microscopic PA</i>
	<i>ANCA-associated</i>	
	<i>Polyarteritis nodosa(PAN)</i>	<i>benign cutaneous form</i>
<i>Large</i>		<i>systemic form</i>
	<i>Temporal arteritis</i>	
	<i>Takayasu arteritis</i>	

- *Small vessel* vasculitis affects: arterioles, capillaries, post-capillary venoules located mainly superficial dermis (papules, purpura, macular purpura, urticarial papules)
- Livedo reticularis, retiform purpura, nodules and ulcer: *Medium size*

Initial evaluation

Skin lesion suspicious to vasculitis:



answer three basic question?

- 1- Are the lesion due to vasculitis?
- 2- Are other organ system involve?
- 3- Are the findings help establish a definite diagnosis

Diagnostic approach to patients with suspected skin vasculitis

- *History*
- *Physical examination*
- *Laboratory and Paraclinic*
- *Histology*

Cutaneous examination: small vessel

- Lesions may be coalesce into large purpuric
- Symptoms: burn, itch, pain
- IC depend on gravity

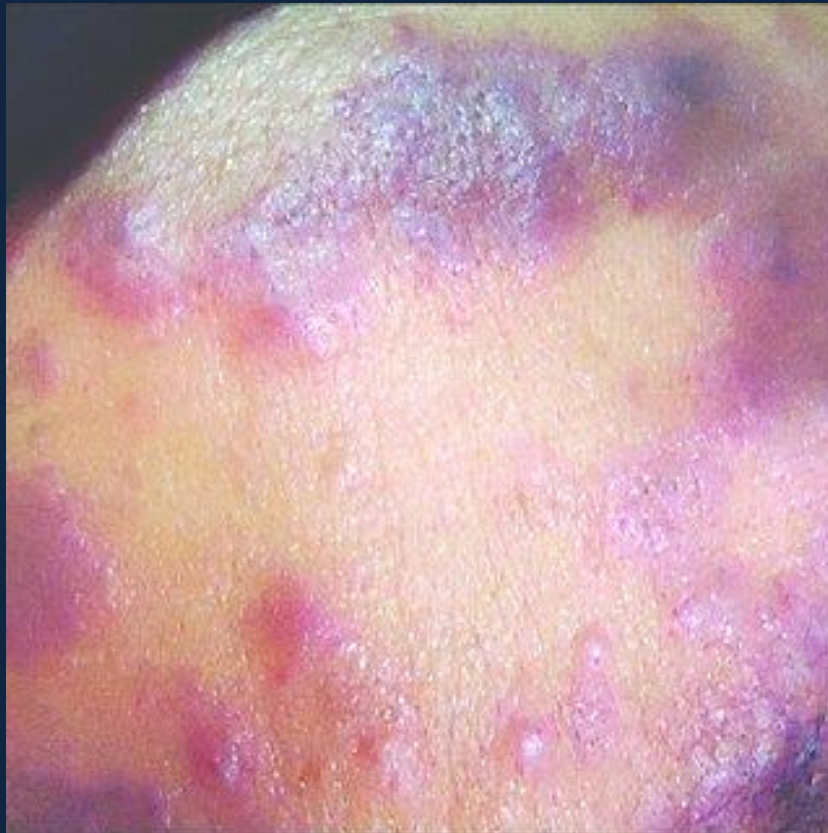
Cutaneous examination

- CSVV: purpuric macula



Cutaneous examination

- papules



Cutaneous examination

- Urticarial lesions:
- Wheals lasting more than 24 hours, burning, residual hyperpigmentation
- Urticarial vasculitis showing fixed, erythematous, urticarial plaques with blanching halos
- For instance, presentation suggestive of urticarial vasculitis should prompt immediate biopsy



Cutaneous examination

- petechiae



Cutaneous examination

- Hemorrhagic vesicles





Cutaneous examination: medium size

- Deep dermal or subcuticular vessel, lesions typically larger, more destructive, irregularly shaped
- Overlap small-medium size cryoglobulinemic, PAN, ANCA associated

Cutaneous examination

- Rounded ulcers





Review of systems and medical history

- Hx and review of system should be performed
- Specific attention to:
 - fever and sweat
 - weight loss
 - arthralgia or arthritis
 - Paresthesia
 - weakness
 - limb drop
 - sinusitis or rhinitis
 - cough, dyspnea, hemoptysis
 - Lab data: hematuria and proteinuria

history

- Arthralgia common in flares
- Frank synovitis or arthritis is rare suggest systemic disease
- Question about preceding infection, ingestion any kind of drug
- Hallmark IgA vasculitis: addition to typical cutaneous, GI symptoms (pain, bleeding) 65%, arthralgia –arthritis with priarthicular swelling 63%, renal 40%, trigger by infection

When biopsy needed in skin vasculitis?

- when confirmation of a clinical diagnosis is required
- Specific diagnosis is hampered by overlapping clinical features

Diagnostic approach to patients with suspected skin vasculitis

- Vasculitis “mimics” should be excluded first
- Possible secondary causes of vasculitis should be excluded

Skin biopsy

- Help to answer this question:

ARE THE LESIONS DUE TO VASCULITIS??

Vasculitis mimicker

- APS
- TTP
- Sick cell
- Embolisation from atrial myxoma
- Amyloidosis
- Vasospasm due to ergot
- IgG4 related disease

Secondary causes

- Infections often coexist with vasculitis, and some infections such as hepatitis B and C, HIV, infective endocarditis, and tuberculosis are an important secondary cause of vasculitis
- RA, SLE, Sjogren syndrome
- Drugs: Hydralazin, PTU, Montelukast
- Malignancy : Lymphoproliferative;MM

Multiple myeloma

- Purpuric lesions showing central necrosis and bulla
- Nonhealing ulcer on the left leg filled with pus and pale granulation tissue



IgG4-Related Disease

History of Illness

The patient's clinical presentation occurred over a decade and included various symptoms including diffuse lymphadenopathy with salivary gland involvement along with left submandibular sialadenitis.

Skin disease initially presented as diffuse itch and was histologically diagnosed as lichenoid dermatitis on the extremities and face (Figure 1). This progressed to infiltrated pruritic papulonodules on the arms, buttocks, neck and face. Subsequent skin biopsy demonstrated a nodular, moderately dense and predominantly deep mixed cell lymphoproliferative infiltrate (Figure 2) suggestive of pseudolymphoma or lymphomatoid papulosis.



Figure 2. A. Infiltrated pruritic papulonodules on the face along with chronic, persistent cervical lymphadenopathy B. Infiltrated pruritic papulonodules on the extensor arm initially diagnosed as pseudolymphoma and C. Pruritic papules on the buttock diagnosed as lichenoid dermatitis.

Drug induced hemorrhagic vesicle



Retiform purpura in drug abuser



HCV infection



APSSs

Medscape



Source: Dermatol Nurs © 2010 Jannetti Publications, Inc.

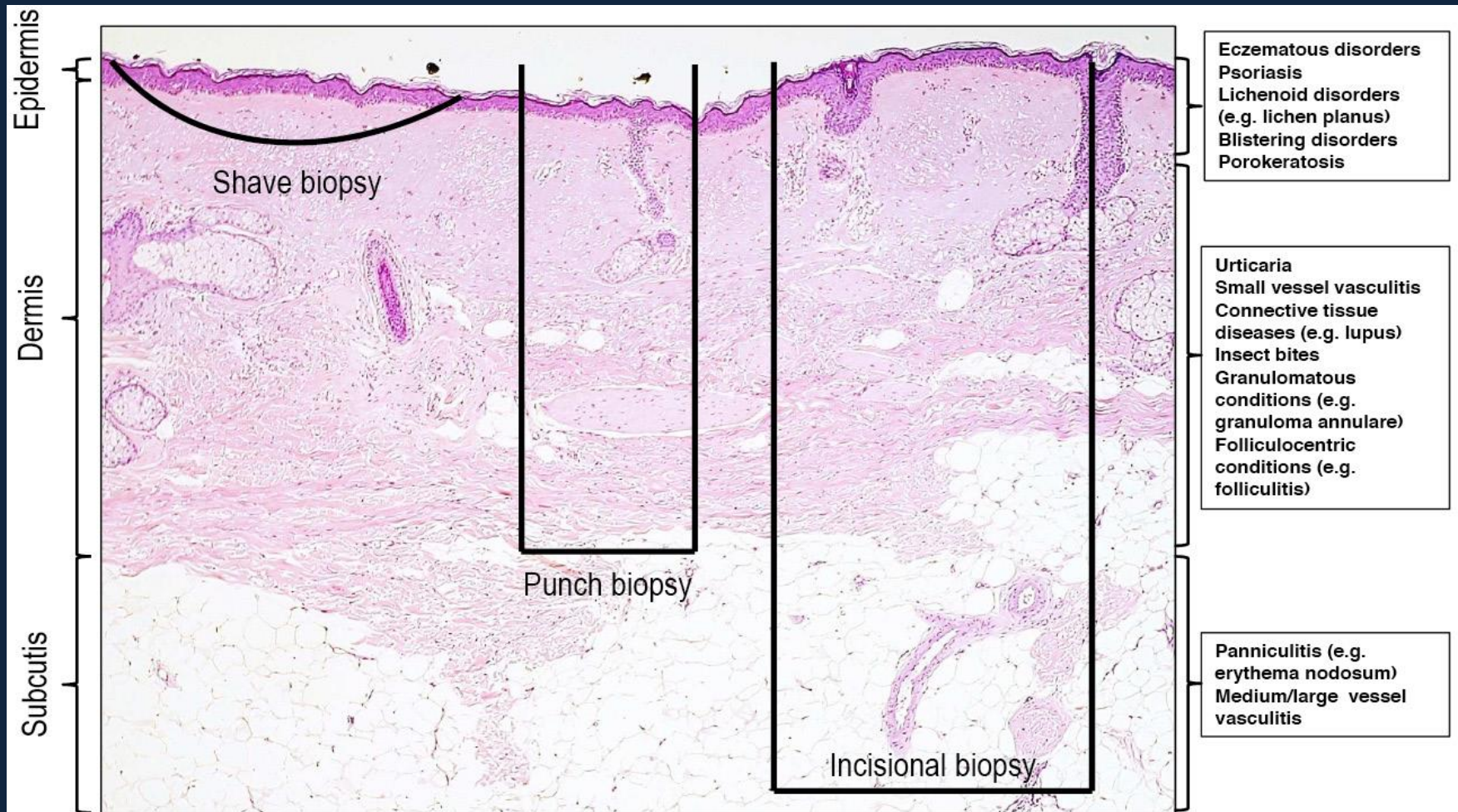
Biopsy and histologic findings

- Adequate and timely sampling: accurate established diagnosis
- Experienced clinician can be fooled by vasculitis mimics
- Biopsy: confirm diagnosis and guided further mangment
- D&D: vasculopathy/coagulopathy, arthropod bites, trauma, skin fragility, Plt dysfunction, pigmented purpuric dermatosis, livedoid vasculopathy, septic emboli, cryoglobulinemic vasculitis

Skin biopsy: lesions are dynamic change with age

- Well-established , not old (1-2 days), adequate size and depth to prevent false negative
- 24-48 h old
- for IF lesion 8-24 h
- In CSVV : a standard 4-mm punch biopsy
- In medium size vessel: incisional biopsy, deep punch biopsy, telescopic punch biopsy or double terphin technique

Skin biopsy

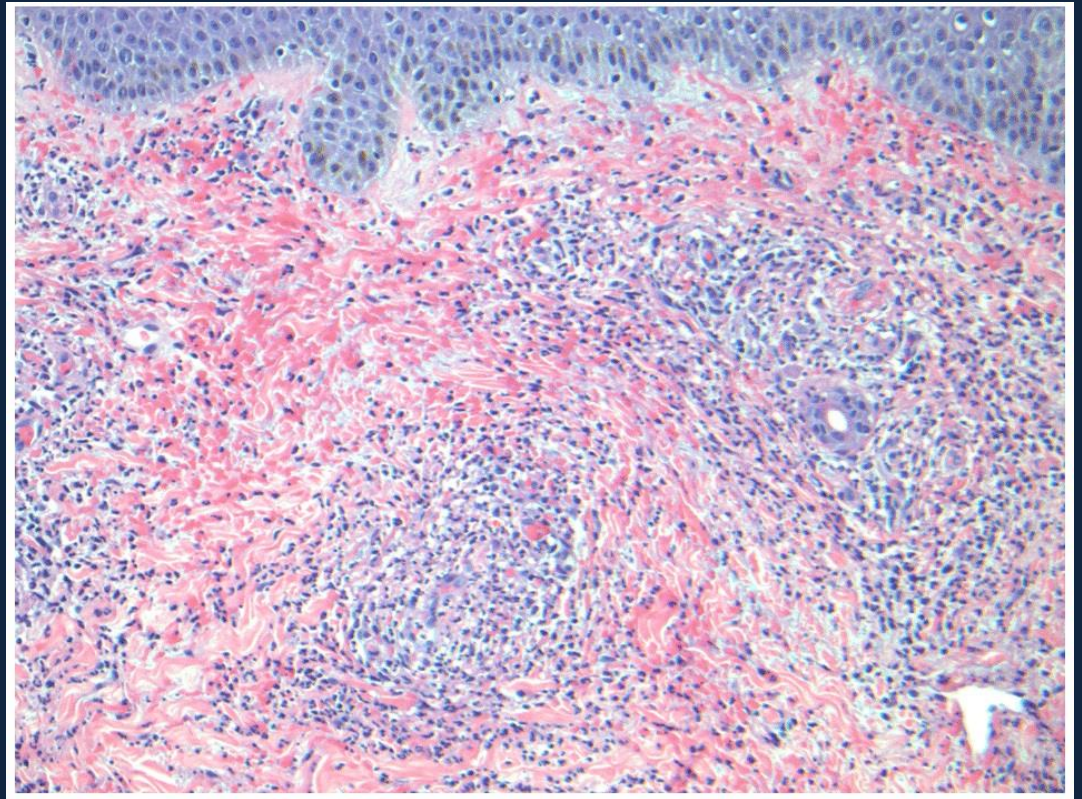
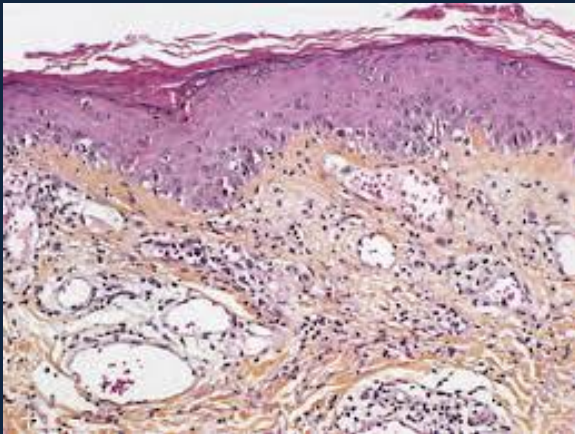


Histopathologic features of leukocytoclastic vasculitis

- Neutrophil invading the vessel wall
- Fibrinoid necrosis
- Nuclear dust (leukocytoclasia)
- Extravagated erythrocyte
- Perivascular inflammatory cell infiltration
- Endothelial swelling

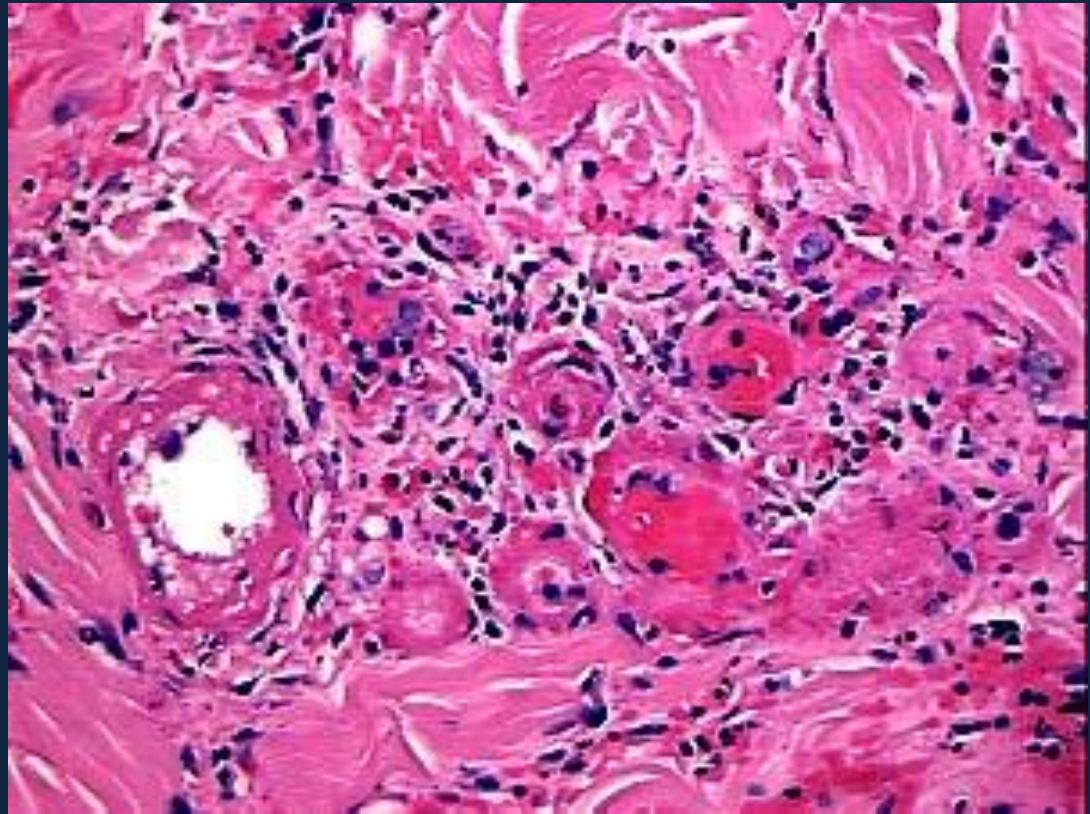
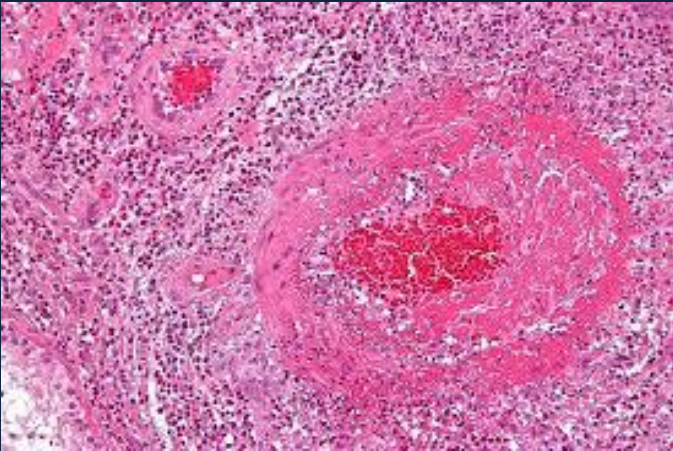
Histology

- Neutrophilic infiltration, granulocytic debris and nuclear dust



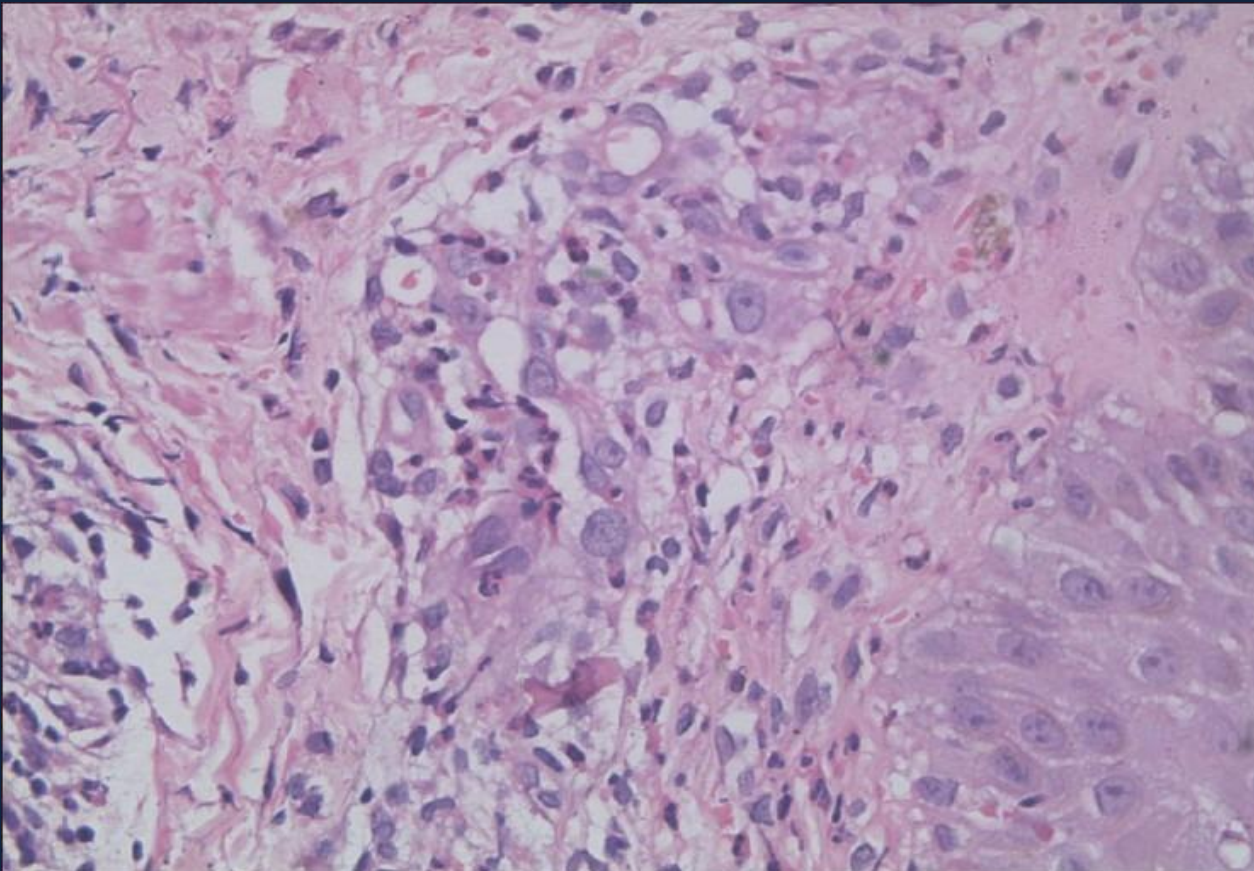
Histology

- Fibrinoid necrosis



Histology

- Extravasation RBC

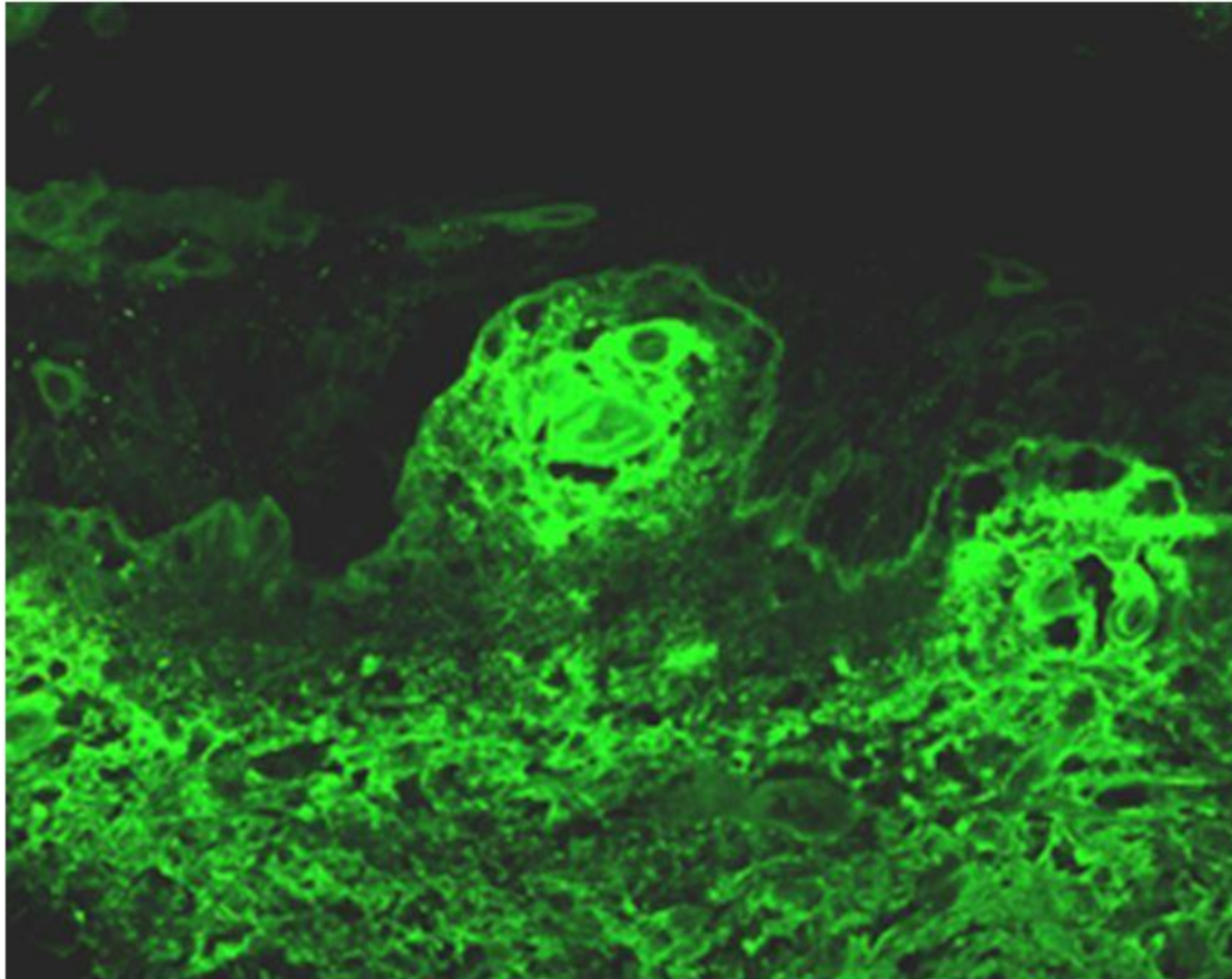


Biopsy for direct immunofluorescence

- Whenever possible second biopsy
- Direct immunofluorescence study
- Prognostic significant
- Suspected IgA vasculitis: IgA deposit
- Hypocomplementic urticarial vasculitis: deposit C3 and IgG at epidermal junction
- may be SLE
- Samples should be placed in N/S

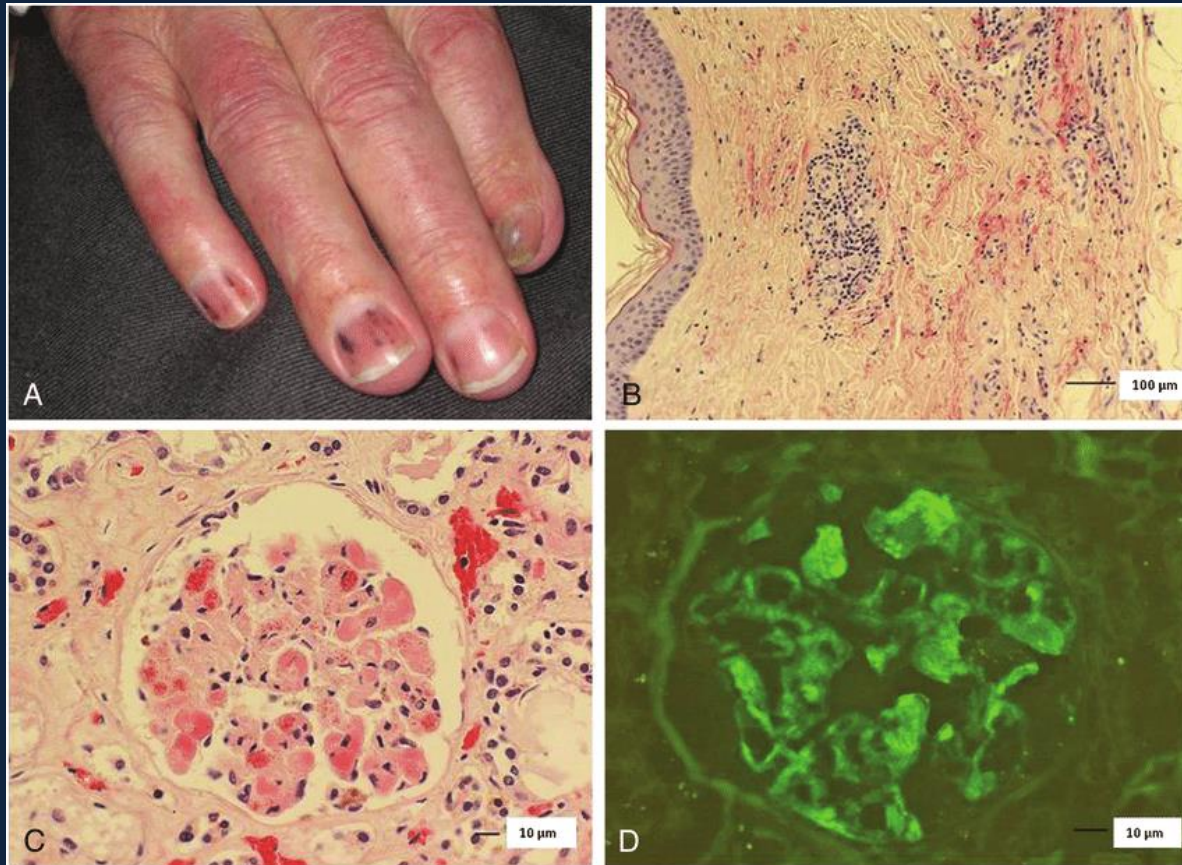
Direct Immunofluorescence of Cutaneous Vasculitis

Fibrinogen blood vessels (vessels may also stain for IgG, IgM, IgA and C3; IgA vascular staining is characteristic of Henoch Schönlein purpura)



IF in cryoglobulinemic

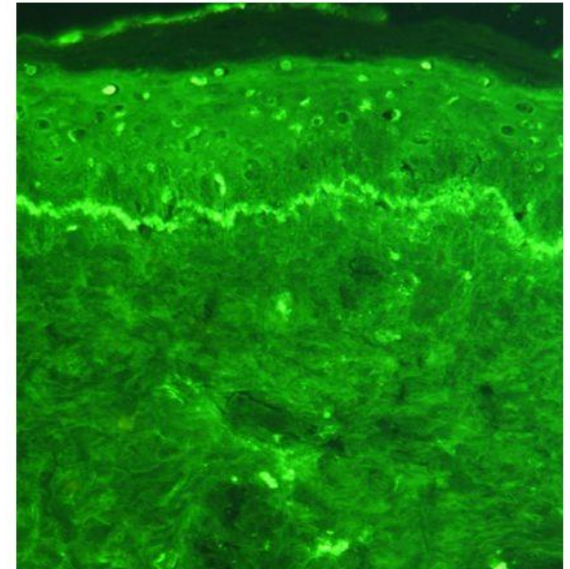
- Deposition IgM



- Continuous band of C3 and IgG at dermoepidermal junction: suggest hypocomplementemic urticarial vasculitis underlay SLE

Lupus Band Test for Lupus erythematosus

- Direct IMF performed on lesional and non-lesional sun-protected skin
- Band-like deposition of IgG, IgM & C3 at dermoepidermal junction in lesional skin
- Epidermal nuclear IgG in small percentage



Laboratory studies

- Base on Hx, RS, PE and biopsy findings  suspicious diagnosis
- Targeted laboratory evaluation
- No standard protocol
- Additional workup may result confuse or false-negative

Laboratory studies

- When presentation* is straightforward as initial episode cutaneous vasculitis no underlying



CBC, ESR

basic metabolic panel

(LFT, creatinine)

urinalysis*

Laboratory studies

- Suspecious to syetemic, chronic or recurrent vasculitis:
- Hepatitis B, C, HIV, ASO
- ANA, RF, anti CCP, anti SSA/SSB
- C3, C4, CH50
- Cryoglobulins
- ANCAs
- Serum protein electrophoresis

Laboratory studies

- Additional laboratory test:
- Abdominal pain or other prominent GI manifestations: Fecal OB
- Cough or dyspnea: Chest X-ray or CT of chest
- Suspicious to PAN: CT angiogram looks for aneurysmal or dilation

Conclusion

- Although cutaneous vasculitis is frequently skin limited but:

May be an important clue to serious underlying diseases

- ★ Confirm diagnosis through clinicopathologic correlation
- ★ Assess for underlying disease, exclude systemic
- ★ Collaboration with interest Dermatologist/pathologist

Thanks for your attention

Cutaneous examination: medium size

- livedoreticularis

Cutaneous examination: medium size

- Retiform purpura

Cutaneous examination: medium size

- Subcutaneous nodules

Cutaneous examination: medium size

- Jagged ulcers

Cutaneous examination: medium size

- Digital necrosis