Derma Team 436

Cutaneous Manifestation of Systemic disease

Objectives: Not given

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Revised by:
Template designed by Group B

Before you start.. CHECK THE EDITING FILE

Sources: doctor's slides and notes

[Color index: Important | doctor notes | Extra]

Part 1

Introduction

Cutaneous manifestations of:

- Endocrine disorders
- Metabolic disorders (Hyperlipoproteinemias)
- GIT disorders
- Liver cirrhosis
- Renal failure

Cutaneous manifestations of endocrine disorders

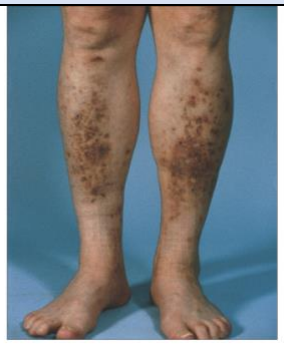
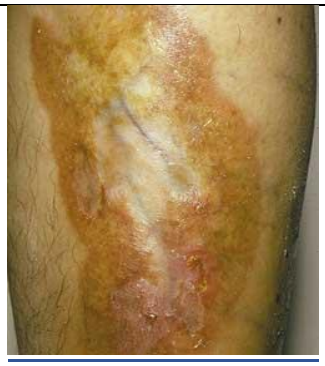
Cutaneous Manifestation of:

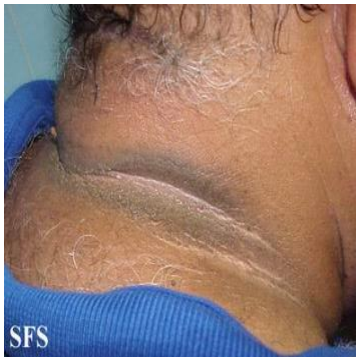
- Diabetes Mellitus
- Hypothyroidism
- Hyperthyroidism
- Addison's disease
- Cushing syndrome

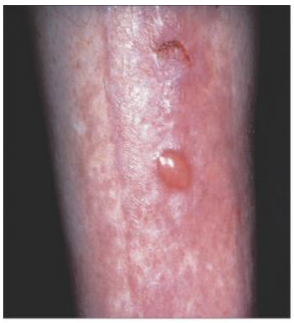
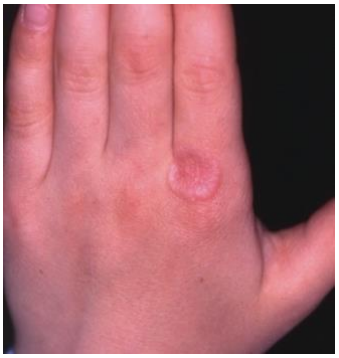
Cutaneous manifestations of diabetes mellitus:

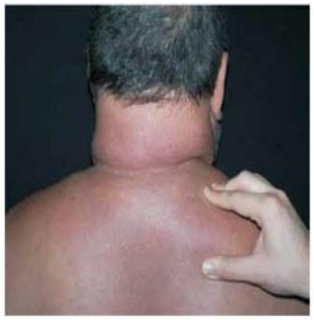
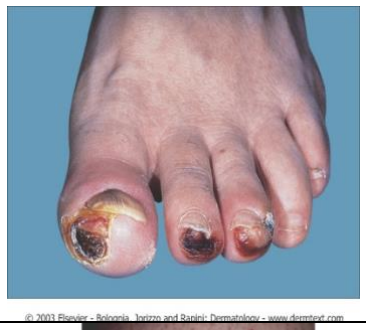
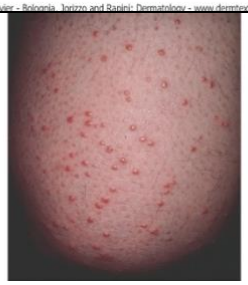
- Diabetic dermopathy
- Necrobiosis Lipoidica
- Acanthosis nigricans
- Bullous diabeticorum
- Generalised granuloma annulare
- Scleredema Diabeticorum
- Bacterial and fungal infections
- OTHER: Perforating dermatosis, Skin tags, eruptive xanthomas, neuropathic ulcers
- There are many cutaneous manifestation of diabetes mellitus some of them occur before and some afterword ,

.

Cutaneous manifestations of diabetes mellitus		
1-Diabetic Dermopathy or "Shin Spots"	• Most common cutaneous manifestation of diabetes; M > F, males over age 50 years with long standing diabetes • Possibly related to diabetic neuropathy and vasculopathy • There are bilateral asymptomatic red-brown atrophic macules on shins • There is no effective treatment. Even tight control of diabetes wont improve it . • Describe the lesion : Start from outside to inside , so have bilateral . asymmetrical (symmetrical means mirror like) , primary lesion is flat and small lesion'' macule ''. so this is one the communist cutaneous manifestation of DM . and this is one of the commonest sites.	
2-Necrobiosis Lipoidica diabeticorum (NLD)	-From the name: Necrobiosis: it's a necrosis of the collagen. Lipoidica : lipid deposition in the dermis. diabeticorum :because its caused by DM. • Patients classically present with single or multiple red-brown papules, which progress to sharply demarcated yellow-brown /orange atrophic, telangiectatic plaques with a violaceous, irregular border. and commonly they developed secondary erosion or ulcers. • Common sites include shins followed by ankles, calves, thighs and feet. So we have two entities in DM that they commonly occurs in the shin . • Ulceration occurs in about 35% of cases. • Cutaneous anesthesia, hypohidrosis and partial alopecia can be found • **Pathology:** Palisading granulomas containing degenerating collagen (necrobiosis). • Approximately 60% of NLD patients have diabetes & 20% have glucose intolerance. Conversely, up to 3% of diabetics have NLD. So not very common	

	• Women are more affected than men. • **Pathogenesis** is thought to involve the nonenzymatic glycosylation of dermal collagen and elastin • **Treatment**: Ulcer prevention, No impact of tight glucose control on likelihood of developing NLD. - Intralesional steroids - Aspirin - Antiplatelet - Pentoxyfylline. - Preilesional heparin injection .to improve vasculopathy	
3-Acanthosis Nigricans	• Its thinking of the epidermal in the flexures area. do you think that the hyperpigmentation is due to increase melanin? No its due to thickening . So, if someone comes to the clinic using bleaching agent it wont work here. • **Causes:** ▪ Obesity & insulin resistance & endocrinopathy ▪ (DM, acromegaly, cushing syndrome, hypothyroidisim & hyperandrogenic state as HAIRAN syndrome (hyperandrogen, insulin resistance, acanthosis nigricans). ▪ Malignancy (esp. GIT, Lung & Breast CA) paraneoplastic, they usually have it very extensive effecting the eyelid , knuckles and palms (Tripe **palms)**.like the lining of the sheep stomach its very thickened . ▪ Medications (nicotinic acid, niacinamide, testosterone, OCP & Glucocorticoid) • **Pathogenesis involves:** ▪ Genetic sensitivity of the skin to hyperinsulinemia ▪ Aberrant keratinocyte and fibroblast proliferation stimulated by excess growth factor (e.g., Insulin like growth factor) • **Treatment:** Treat the underlying cause:	 **Clinical picture:** Hyperpigmented velvety plaques of the flexures. The face, external genitalia, medial thighs, dorsal joints, lips and umbilicus can be involved in extensive cases. Skin tag :has the same causes / pathogenesis as acanthosis nigricans due to obesity and insulin resistance

	▪ Tight blood glucose control, ▪ Treatment of underlying malignancy, ▪ Weight control if obese ▪ Discontinuation of offending agent We can give keratolytic agent to reduce the thickness of the skin.	
4-Diabetic Bullae or Bullae Diabeticorum	● Rarest cutaneous complications of diabetes; M > F, long standing diabetics. ● Trauma and microangiopathy may play a role ● **Clinical**: Rapid onset overnight ,of painless usually tense blisters on the hands and feet ● **Pathology**: Intraepidermal and/or subepidermal split without acantholysis. DIF '' direct immune florescence'' is negative (to differentiate it from other type of bullae) ● **Treatment**: Spontaneous healing without scarring or treatment	**What type of bullae is this(tense vs faccid)** ?  © 2003 Elsevier - Bolognia, Jorizzo and Rapini: Dermatology - www.dermtext.com Its tense bullae ,Usually faccid wont present to you at the clinic they will rupture and will present with erosions so you will be lucky if you see one at the clinic.
5-Granuloma Annulare	● Why its called '' granuloma annulare '' ? because its annular and in biopsy we will see granuloma. ● Association between granuloma annulare and diabetes is controversial. ● Generalized form of GA is the most closely associated with DM. not the solitary ones. ● It has a chronic and relapsing course ● **Treatment**: ▪ IL steroid ▪ Systemic steroid ▪ PUVA .'' phototherapy''	 Asymptomatic erythematous red-purple dome shaped papules arranged in annular configuration

6-Scleredema Diabeticorum	• Its Thickening of the skin of the upper of the neck and the back .Its irreversible . • due to deposition of myosin in the dermis. • Occurs diabetics with poorly controlled, long-standing disease, and obese men • Painless, symmetric woody “peau d’orange” induration the upper back and neck. • No specific treatment is available • Control of hyperglycemia afterward does not improve the scleredema	 **Figura 1.** Nítida infiltração cutânea.
7-Cutaneous Infections	Diabetic patients are predisposed to develop cutaneous infections due to poor microcirculation ▪ Bacterial ▪ Fungal	
Other manifestation of DM:	▪ Diabetic neuropathy (peripheral), Neuropathic ulcers ▪ What are the type of ulcers? Arterial ,neourpathic,venous.	
	▪ Eruptive Xanthomas	

○ Cutaneous Manifestation of Thyroid disease:

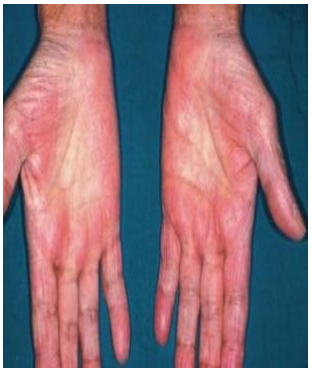
Table 53.5 Dermatologic manifestations of hyperthyroidism.

DERMATOLOGIC MANIFESTATIONS OF HYPERTHYROIDISM	
Cutaneous changes	Fine, velvety, or smooth skin Warm, moist skin due to increased sweating Hyperpigmentation – localized or generalized
Cutaneous diseases	Vitiligo Urticaria, dermatographism Pretibial myxedema and thyroid acropachy
Hair changes	Fine, thin Mild, diffuse alopecia
Hair disease	Alopecia areata
Nail changes	Onycholysis Koilonychia Clubbing from thyroid acropachy

Non-specific Manifestations of Hyperthyroidism:

Skin

- Warm, and moist
- Palmar erythema
- Flushing of head/neck, trunk
- Other immune disease like vitiligo , urticaria, alopecia areata (since its autoimmune disease)



Hair

- hair and nail growth will be increase and opposite with hypothyroidism .
- Soft/fine/straight
- Diffuse reversible alopecia (Telogen effluvium) increase hair shedding

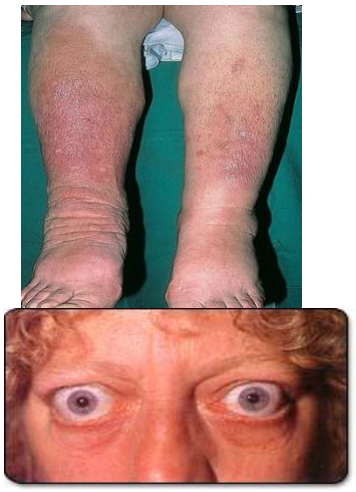
Nails

- Faster rate of growth
- Onycholysis .separation of nail from the nail from nail bed.
- Koilonychia, ''spoon shape'' they may present with Clubbing due to **Thyroid acropachy**.
- What is thyroid acropachy ? clubbing and thickening of distal phalanx. also called Plummer nails .
- Plummer nails: concave deformity with distal onycholysis

Pigmentation

- Focal or generalized hyperpigmentation
- Vitiligo

Thyroid dermopathy (Pretibial Myxedema):

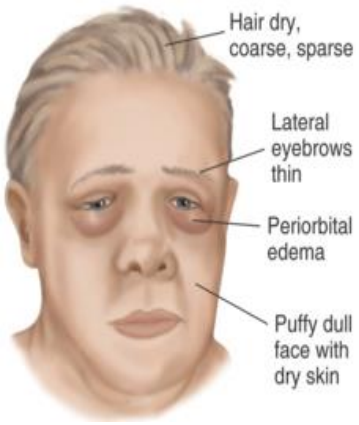


What are the manifestation of graves disease? Pretibial myxedema , goiter and exophthalmos.

- Bilateral, non-pitting yellowish-brown to red waxy papules, nodules and plaques on the shins 'pretibial area' . Due to deposition of myosin as in **Scleredema Diabeticorum.**
- Occur in Graves' disease.
- The clinical findings are due to an increase in hyaluronic acid in dermis.
- Treatment regimens include high potency topical steroids & intralesional steroid.

Non-specific Manifestations of Hypothyroidism:

Skin



- Cool, dry, pale
- Xerosis ''dryness of the skin''
- pruritus; itching of the skin
- Hypohidrosis
- Yellowish hue secondary to carotenemia
- Generalized myxedema: swollen waxy appearance
- Swollen lips, broad nose, buffy dull face , macroglossia
- Purpura secondary to impaired wound healing
- periorbital edema
- slow growth of the nails

Hair

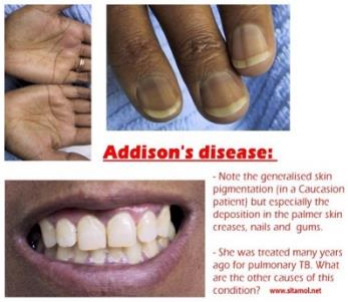
- Dry, brittle, coarse hair
- Diffuse alopecia, Telogen effluvium
- Loss of lateral third of eyebrow (madarosis).
- May be associated with other immune disease such as alopecia aleata and vitiligo .

Table 53.6 Dermatologic manifestations of hypothyroidism.

DERMATOLOGIC MANIFESTATIONS OF HYPOTHYROIDISM	
Skin changes	Dry, rough, or coarse; cold and pale, boggy and edematous (myxedema) Yellow discoloration as a result of carotenemia Easy bruising (capillary fragility)
Cutaneous diseases	Ichthyosis and palmoplantar keratoderma Eruptive and/or tuberous xanthomas
Hair changes	Dull, coarse, and brittle Slow growth (increase in telogen hair phase) Alopecia of the lateral third of the eyebrows
Nail changes	Thin, brittle, striated Slow growth Onycholysis (rare)

So both hypo and hyper can have loss of hair and pruritus.

○ Hypocorticism (Addison disease): primary adrenal inefficiency .



- Generalized hyperpigmentation that is more prominent in light exposed areas, scars, genitalia, palmar and finger creases, and under the nails. The pigmentation characteristically affects the mucous membranes.
- Loss of pubic and axillary hair in females. Adrenal synthesize androgen
- Improvement of acne Adrenal synthesize androgen
- So if patient presented with those you should suspect Addison disease. What laps you would like to order? 1- cortisol levels 2- electrolyte (for hyponatremia) .

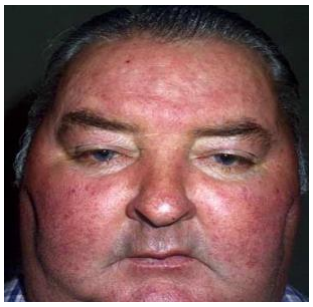
Table 53.8 Selected dermatologic manifestations of Addison's disease.
MSH, melanocyte-stimulating hormone.

SELECTED DERMATOLOGIC MANIFESTATIONS OF ADDISON'S DISEASE

• Hyperpigmentation (MSH-like effect due to secretion of ACTH)
  • Diffuse with sun-exposed accentuation
  • Sites of trauma
  • Axillary, perineum, and nipples
  • Palmar creases
  • Nevi
  • Mucous membranes
  • Hair
  • Nails
• Loss of ambisexual hair in postpubertal women
• Fibrosis and calcification of cartilage including the ear (rare)
• Vitiligo
• Chronic mucocutaneous candidiasis

○ Cushing syndrome:

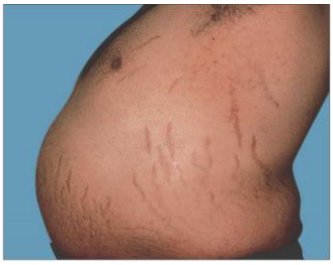
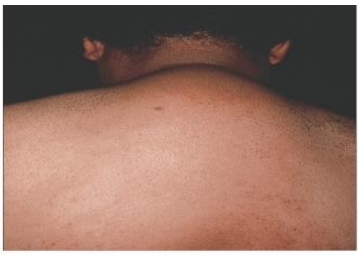
- endogenous or exogenous(as side effect of steroid)
- Deposition of fat over the clavicles and back of the neck" Buffalo hump"
- rounded erythematosus face with telangiectasia "Moon face"
- Trunkal /central obesity with slender wasting limbs.
- dermal atrophy in form of Striae rubra distensae .
- Hirsutism, acneform rash, rosacea , androgenetic alopecia.
- Easy bruising of the skin on simple trauma.
- Purpura due to delayed wound healing .



What do we call this type of erythema ? steroid induced rosacea

Table 53.7 Dermatologic manifestations of Cushing's disease (syndrome). *This same change is indicative of insulin resistance and occurs in HIV-associated lipodystrophy.

DERMATOLOGIC MANIFESTATIONS OF CUSHING'S DISEASE (SYNDROME)
Altered subcutaneous fat distribution*
• Rounded facies • Fullness of the cheeks ('moon' facies) • Dorsal cervical vertebral fat deposits (buffalo hump) (Fig. 53.20) • Pelvic girdle fat deposition • Reduced fat in the arms and legs
Skin atrophy
• Global atrophy with epidermal and dermal components affected • Multiple striae on abdominal flanks, arms, and thighs (Fig. 53.21) • Cutaneous fragility and prolonged wound healing • Purpura with minor trauma due to reduced connective tissue support
Cutaneous infections
• Pityriasis (tinea) versicolor • Dermatophytosis and onychomycosis • Candidiasis
Appendageal effects
• Corticosteroid-related acne • Hirsutism

Striae distensae	Buffalo hump
 	

Hyperlipoproteinemia not important I put it just of revision

The doctor only said :

-Type I&V : mainly triglyceride

-Type II& IV : mainly cholesterol

Type I • Familial lipoprotein lipase deficiency (AR) or apoprotein CII deficiency • Increased chylomicrons • Associated with hepatomegaly, pancreatitis
Type IIa •Familial hypercholesterolemia, common hypercholesterolemia (AD) • Increased LDL
Type IIb • Familial hypercholesterolemia (AD) • Increased LDL and VLDL
Type III • Familial Dysbetalipoproteinemia (AR) • Increased IDL

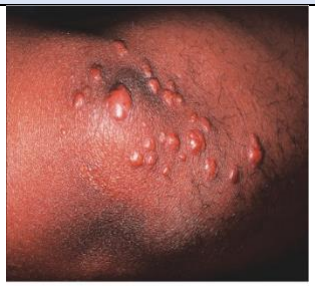
	Type IV • Familial hypertriglyceridemia (AD) • Increased VLDL
	Type V • Familial type V hyperlipoproteinemia, familial lipoprotein lipase deficiency (AD) • Increased chylomicrons and VLDL

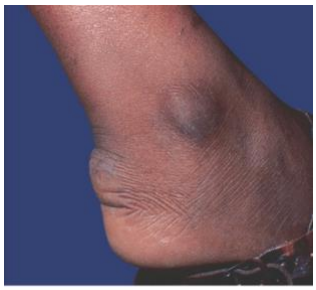
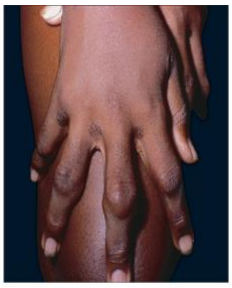
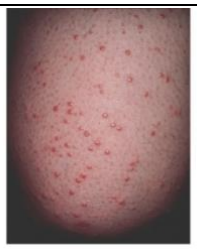
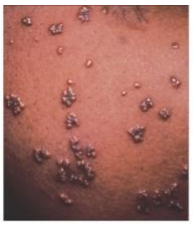
Xanthomatosis:

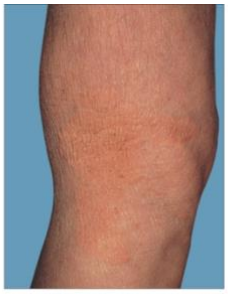
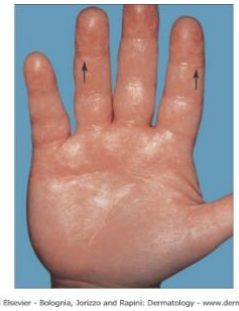
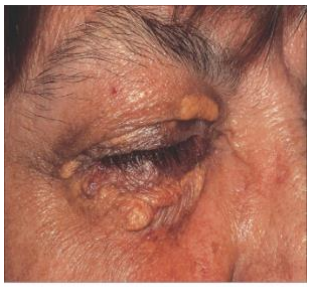
6 Clinical Types:

Tuberous Xanthoma
Tendinous Xanthoma
Eruptive Xanthoma
Planar Xanthoma
Palmar Xanthoma
Xanthelasma

-How do they present? they are due to fat deposit in the skin so they will have yellowish / orangish color

Xanthomatosis		
1-Tuberous Xanthoma=joints	• Flat or elevated, rounded, grouped, yellowish-orange nodules over joints (particularly elbows and knees) • May be associated with : • Types II, III, and IV • Biliary cirrhosis	 Tuberous xanthomas of the knee. Note the yellowish hue.

2-Tendinous Xanthoma=tendons	• Papules or nodules over tendons (extensor tendons on dorsum of hands, feet, and achilles) • Types II, III	 Tendinous xanthoma. Linear swelling of the Achilles area representing a tendinous xanthoma in a patient with dysbetalipoproteinemia.  Tendinous xanthomas of the fingers in a patient with homozygous familial hypercholesterolemia.
3-Eruptive Xanthoma	• what does eruptive means? multiple lesions in a very short duration. • Small yellow/orange/red papules appearing in crops over entire body → buttocks, flexor surfaces, arms, thighs, knees, oral mucosa and may koebnerize • Associated with markedly elevated or abrupt increase in triglycerides (elevated chylomicrons) • Associated with: • Types I, III , IV , and V • Diabetes, obesity, pancreatitis, chronic renal failure, hypothyroidism, estrogen therapy, corticosteroids, isotretinoin (increases triglyceride), acitretin.	  Eruptive xanthomas. Note the yellowish hue

4-Planar Xanthoma	• Flat macules or slightly elevated plaques, yellow/tan color • Associated with biliary cirrhosis, biliary atresia, myeloma, monoclonal gammopathy, lymphoma. • Characteristically around eyelids, neck, trunk, shoulders, or axillae • Types ll,lll	Plane  xanthoma in a patient with a monoclonal IgG gammopathy Plane xanthomas of the palmar  creases in a patient with dysbetalipoprotenemia (arrows).
5-Palmar Xanthoma	• Nodules and irregular plaques on palms and flexural surfaces of fingers • Type III	
6-Xanthelasma	• Most common type of xanthoma • Eyelids • Usually present without any other disease, but can occur in types II and III • Common among women with hepatic or biliary disorders /cirrhosis , also seen in myxedema, diabetes • Best treated with surgical excision. Or laser • can occur with normal lipid profile (lipid metabolism).so it can occur with any other disease. • if patient present with xanthelasma what is the first step to do ? lipid profile . • you also have to review their medication if you suspect biliary atresia you have to do liver profile. Or if you suspect myeloma you have to do electrophoresis.	 Xanthelasma palpebrarum with typical yellowish hue.

Cutaneous manifestations of gastrointestinal disorders:

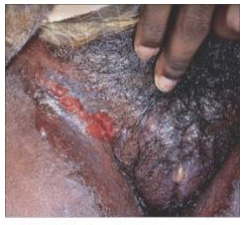
Manifestations of Inflammatory Bowel Disease (IBD):

if you memorize this table it will be enough , it summarize all the features of CD& UC

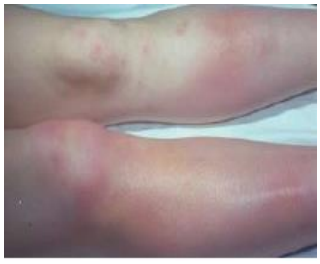
	Association	Cutaneous Findings
Fissures and Fistulas	CD > UC	Commonly involves perineum and groin area associated with edema and inflammation
Oral Crohn's	CD	Edema, cobblestone, ulcerations, nodules
Metastatic Crohn's	CD	Nodules, plaques, ulcerations; commonly on extremities or intertrigenous regions mimics Erythema Nodosum Its cutaneous finding but the histopathology is granuloma.the main things when you do biopsy you will find finding similar to intestinal crohn's disease.
Erythema nodosum	UC>CD	Tender red nodules on anterior lower legs; precedes or occurs simultaneous with IBD flare
Pyoderma Gangrenosum (PG)	UC>CD	Papules, pustules, hemorrhagic blisters → enlarge, ulcerate with dusky undermined edges; exacerbated by trauma; frequently on legs
Pyoderma Vegetans	UC	Vegetating plaques, vesiculopustules of intertrigenous areas; heal with hyperpigmentation; when process involves mucosa =Pyostomatits vegetans
Chronic Apthous Ulcers	UC>CD	Identical to common aphthous ulcers; develop with IBD flares
▪ Other less common manifestation: Epidermolysis bullosa acquisita, erythema multiforme, urticaria, clubbing, psoriasis, vitiligo. Note: CD = Crohn's disease, UC = Ulcerative Colitis		

Metastatic crohns disease

when you do biopsy you will find finding similar to intestinal crohn's disease.



○ Erythema Nodosum:



- Erythematous, tender subcutaneous nodules on commonly anterior shins; also seen on thighs, lateral aspects of lower legs, arms, and face, bilateral, symmetrical.

very painful by history and very tender by examination

- Often accompanied by fever, chills, malaise, and leukocytosis
- 70% have associated arthropathy of the adjacent joint .
- Occurs at any age, but most prevalent between 20 and 30 years of age

Usually in teenagers and early twenties.If you work with pediatric you will see it there a lot .

Causes:

The commonest cause is streptococcal infection .it may be precede it .but can occur with other disease such as ulcerative colitis .

MNEMONIC: **SHOUT BCG**
S=Sarcoid, Sulfa drugs, Strept.
H=Histoplasmosis
O=Oral contraceptives, pregnancy
U=Ulcerative colitis
T=TB
B=Bechet's
C=Crohns
G=GI (Yersinia, salmonella)

So if you have a patient with erythema nodusum in the ER . how would you evaluate him ?what is your next step ?

- For strep (cbc, throat swab for culture , ASO titre)
- Chest x-ray to rule out TB and sarcoidosis

Work up:

- Hx (exclude drugs , hx of infection & GI symptoms)
- CBC,diff.
- ESR
- Throat swab
- ASO titre
- CXR
- PPD
- Stool for occult blood
- Very deep skin biopsy . because its inflammation of the subcutaneous tissue .

Histology:
Septal panniculitis without vasculitis

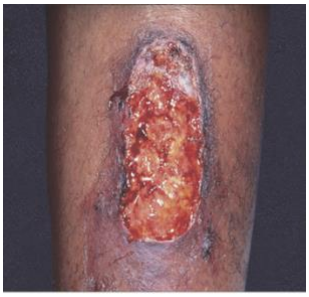
Treatment

- bed rest , Spontaneous resolution usually occurs within three to six weeks without scarring
- NSAIDs such as indomethacin or naproxen
- Systemic steroids effective in severe cases and resistant and can be dangerous if infection is etiology
- Potassium iodide

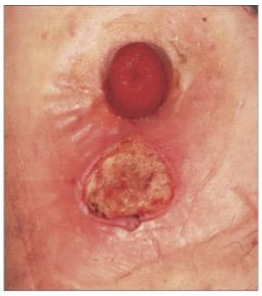
○ Pyoderma gangrenosum (PG)

- 1.5-5% of patients with IBD develop PG .so whenever you see PG you have to consider IBD.
- Associated with leukemia, myeloma, monoclonaL gammopathy (IgA),

polycythemia, chronic active hepatitis, HCV, HIV , SLE & pregnancy
• Associated with PAPA syndrome → pyogenic arthritis, pyoderma gangrenosum, severe cystic acne
• May be associated with arthritis



Distinct rolled undermined edges and show satellite violaceous papules that break down and fuse with central ulcer



Patient with stoma adjacent to it there is Peristomal Pyoderma Gangrenosum

Four Types:

Ulcerative	Pustular	Bullous	Vegetative . over the flexures it has vegetative / thick surface

Most of the times pustular and bullous end up with ulceration .

Histology

• Massive dermal edema with epidermal neutrophilic abscesses. Not specific . so its diagnosis of exclusion you have to exclude all other causes of ulcers like infections and malignancy .

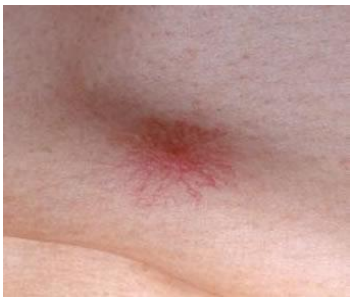
Treatment

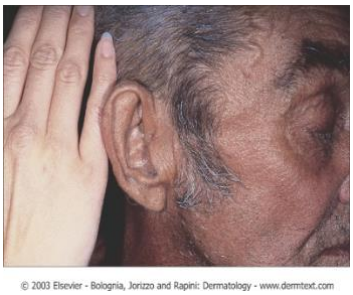
Treat underlying cause
• Potent topical steroids or IL steroids
• Topical tacrolimus
• Systemic steroids
• Cyclosporine ,Sulfapyridine, sulfasalzine, and dapsone
• Infliximab
• Other agents: thalidomide, SSKI, azathioprine, cyclophosphamide, chlorambucil

Patient with PG have one finding called pathergy sign or test . it means they may devolep PG at the site of trauma or surgery . so we have to do this test to make sure they don't have the sign and develop it at the site of the trauma .

Cutaneous manifestation of liver diseases .

- Pruritus: generalized itching especially in the presence of biliary obstruction or jaundice.
- Jaundice.
- Spider naevi: small telangeictatic blood vessels especially on the face and upper chest.
- Palmar erythema.
- Thinning of the hair and sometime loss of sexual hair in the axillae and pubic areas. because liver usually metabolize estrogen it wont be metabolized . these areas are androgen dependent and those patients will have high estrogen.
- Porphyria cutana tarda.
- Xanthoma





Diffuse bronzing of the skin in Hemochromatosis
its inherited disorder with impaired iron metabolism so they have iron overload resulting is liver cirrhosis and darkening of the skin

Cutaneous manifestations of renal disease

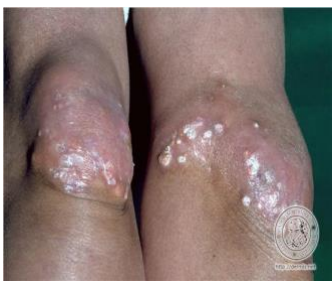
End Stage Renal Disease (ESRD) and Dialysis:

1- **Pruritus:** the most common cutaneous manifestation of ESRD.
So if patient present with pruritus' keep in mind to do renal profile .

2- **Half and half (Lindsay's) nails** result from edema of the nail bed and capillary network and give the proximal half of the nail an opaque white appearance and redness of the distal part.

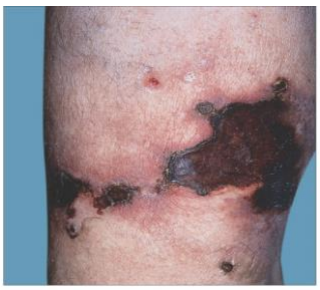
3- Metastatic Calcification:

• Deposition of calcium within tissue secondary to abnormal calcium and or phosphate metabolism.
Patient with ESRD can develop secondary and tertiary hyperparathyroidism.
• It can manifest in the skin as benign nodular calcifications (calcinosis cutis) or as a more serious condition (calciphylaxis) with an associated mortality rate between 60-80%



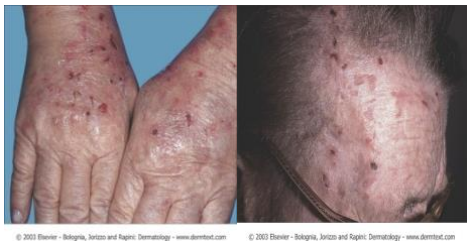
calcinosis cutis

4- Calciphylaxis:



• Calciphylaxis presents as painful purpuric plaques and retiform pupura with progression to ulceration and necrosis.
If you get a call form the dialysis ward with picture of necrosis you have to think of calciphylaxis.its a serious disease up to 60% mortality rate due to secondary staph infection ,
You have to take deep biopsy and it will show calcification of the media of the blood vessels.
Distribution of the lesions may predict prognosis; patients with acral lesions have a better outcome that those with proximally located lesions
• Histological finding of medial calcification/intimal hyperplasia of small arteries and arterioles
• Management of these patients includes total or subtotal parathyroidectomy (if PTH levels are elevated), wound care, and avoidance or precipitating factors. Mortality is related to Staphylococcal super infection of ulcers with resultant sepsis

5-Porphyria Cutanea Tarda (PCT):



• The pathogenesis may be related to the suboptimal clearance of uroporhyrins (product of heme synthesis pathway) from the circulation which is a photosensitizer.. Porhyrins accumulate in the blood
• Patients when exposed to sun may present with photodistributed , blisters, bullae, skin fragility, hyperpigmentation and hypertrichosis.
-Usually it Is inherited disease but can be a accrued as in renal and liver failure.

-The vampire therapy is based on this ,the patient when they go to the sun the develop severe cutaneous finding and need frequent blood transfusion because they have defective heme synthesis pathway .just a way to remember , they go out and night and look for blood .

6-Pseudo-PCT:

• Similar clinical and histological findings of PCT, in setting of normal porphyrin profile
• Usually due to certain medications such as furosemide, naproxen, tetracycline, nalidixic acid, or amiodarone or renal disease.

Generalized Pruritus:

- Generalised pruritus in the absence of a rash requires investigation and exclusion of an underlying systemic disorder . they don't have primary or secondary lesion that helps in diagnosing the disease .
- It is important to distinguish these from an underlying primary skin disease such as scabies or eczema

Conditions that Cause Pruritis:

1- Chronic Renal Disease
2- Cholestasis

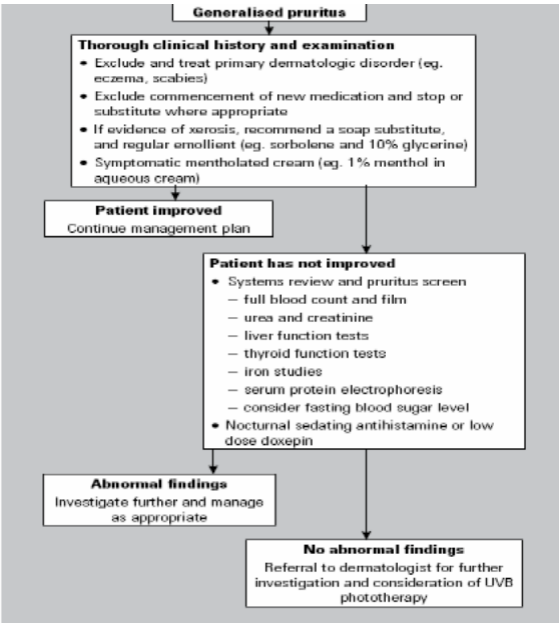
3- Endocrine Disease
   - Thyrotoxicosis – often due to increased skin blood flow which raises skin temperature
   - Hypothyroidism – pruritus secondary to the dry skin

4- Malignancy
   - Most common association: Hodgkin's disease and polycythemia rubra vera. Even solid malignancy as para-neoplastic syndrome.

5- HIV Infection

6- Iron deficiency anemia

7- Chronic infection,Parasetic infection

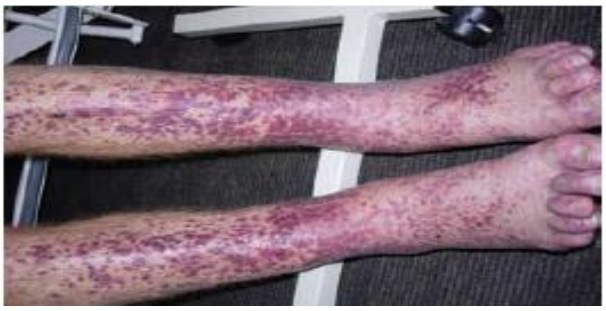


Workup of Generalized Pruritus:

- History and Physical exam.
  Ask for symptoms of Thyroid, renal, and liver disease .
- CBC, diff, Blood film to rule out hematological malignancy
- Stool for O&P 'ova and parasite', occult blood
- CXR
- Thyroid, renal, and liver function tests

Part 2

Purpura and vasculitis



Definition:

Visible hemorrhage into the skin or mucous membrane subdivided as a follow:

- Petechiae less than or equal 4 mm
- Purpura (>4mm - < 1cm), which can be either Palpable or non-palpable(macular)
- Ecchymoses > or equal to 1 cm
- What we care about here is palpable purpura .

Purpura:

I don't care about those what I **care** about is purpura caused by inflammation (vasculitis)

Causes:

- Platelet disease
- Coagulation defect
- Blood vessel wall pathology

1-Platelet Disorders

- Thrombocytopenia
- Platelet Dysfunction

2-Coagulation Factor Deficiency

- **Congenital**
  - Factor VIII Deficiency
  - Factor IX Deficiency
  - Von Willebrands disease
- **Acquired**
  - Disseminated Intravascular Coagulopathy
  - Liver disease
  - Uremia
  - Vitamin K deficincy

3-Vascular Factors

- **Congenital**
  - Hereditary Hemorrhagic Telangectasia
  - Ehlers-Danlos Syndrome (Type IV)
- **Acquired:**
  - Inflammation (Vasculitis)
  - Trauma
  - Vitamin c deficiency (scurvy)
  -

Vasculitis:

Definition:

A clinicopathologic process characterized by inflammatory destruction of blood vessels that results in occlusion or destruction of the vessel and ischemia of the tissues supplied by that vessel.

Classification:

Table 26.2 Chapel Hill consensus classification.

CHAPEL HILL CONSENSUS CLASSIFICATION
Large-vessel vasculitis
• Giant cell arteritis • Takayasu's arteritis
Medium-vessel vasculitis
• Classic polyarteritis nodosa • Kawasaki disease
Small-vessel vasculitis
• Wegener's granulomatosis • Churg–Strauss syndrome • Microscopic polyangiitis (polyarteritis) • Henoch–Schönlein purpura • Essential cryoglobulinemia • Cutaneous leukocytoclastic vasculitis

- **Large-vessel vasculitis** **we don't care about it they don't present to dermatologist**
  Aorta and the great vessels (subclavian, carotid)
  Claudication, blindness, stroke
- **Medium-vessel vasculitis** **they don't present to dermatologist.**
  Arteries with muscular wall organ blood vessels like renal arteries
  Mononeuritis multiplex (wrist/foot drop), mesenteric ischemia, cutaneous ulcers
- **Small-vessel vasculitis** **what we care about and present to us**
  Capillaries, arterioles, venules
  Palpable purpura, glomerulonephritis, pulmonary hemorrhage

Cutaneous small vessel vasculitis

Is the most common type of vasculitis and it primarily affect post-capillary venules in the skin

Pathogenesis:

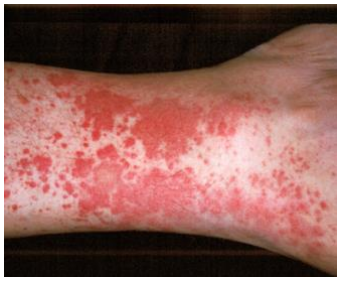
- Many forms of small-vessel vasculitis are felt to be caused by circulating immune complexes type 3 immune reaction.
- These lodge in vessel walls and activate compliment

The doctor went through them

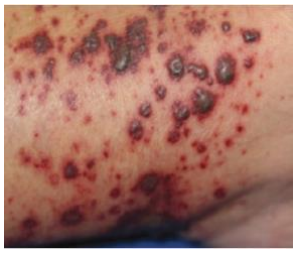
Table 3. Causes of cutaneous vasculitis[5,6]

Infections	
Bacterial	• Streptococcal, meningococcal, urinary tract infections
Viral	• Hepatitis B and C, HIV
Mycobacterial	• Tuberculosis
Connective tissue disorders	• SLE and related conditions • Rheumatoid arthritis • Systemic sclerosis, Sjogren syndrome • Dermatomyositis • Medium vessel vasculitides (Wegener granulomatosis, polyarteritis nodosa, Churg-Strauss syndrome)
Malignancy	• Haematologic – myeloproliferative – lymphoma – monoclonal gammopathy – multiple myeloma
Drugs	Including antibiotics, antihypertensives
Idiopathic	Henoch-Schonlein purpura

- Palpable purpura is the hallmark
- Pinpoint to several centimeters not the size of the lesion it means the involved area.
- The commonest cause esp in pediatric is post Streptococcal infection
- Early on lesion may not be palpable, Papulonodular, vascular, bullous, pustular or ulcerated forms may develop
- Predominate on the ankles and lower legs i.e dependent areas
- Mild pruritis, fever, malaise, arthralgia and/or myalgia may occur



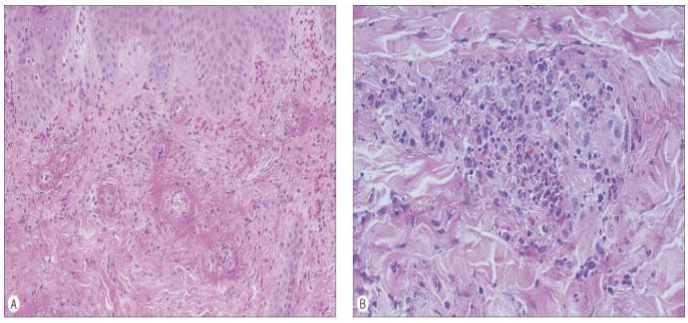
- Typically resolve in 3 to 4 weeks
- Residual post-inflammatory hyperpigmentation may be seen
- Self-limiting
- May recur or become chronic
- Hemorrhagic vesicles or bullae may develop
- May be localized to the skin or may manifest in other organs.
- The internal organs affected most commonly include the joints, GIT, and the kidneys.
- Renal involvement present as glomerulonephritis
- The prognosis is good in the absence of internal involvement.



Describe this lesion : multiple dusky , red papule And blood fluid vesicle and haemorrhagic bulla. You can simply say its palpable purpura instead of dusky red papule .

Histology:

• Agiocentric segmental inflammation, endothelial cell swelling, fibrinoid necrosis of blood vessel walls and a cellular infiltrate composed of neutrophil with RBC extravasation.



Work up:

- Detailed history and physical examination
- History should focus on possible infectious disorders, prior associated diseases, drugs ingested, and a thorough review of systems
- CBC, strep throat culture or ASO titer, Hep B & C serologies and ANA are a reasonable initial screen, renal profile
- URINALYSIS FOR RBC, PROTIEN & CAST

If 12 years old patient present with purpura in the ER .what will you do?

Ask about history of infection , review medication like antibiotic .all the features of CTD (joint pain).

What is your next step after history and examination ?

We need to two set of investigation :

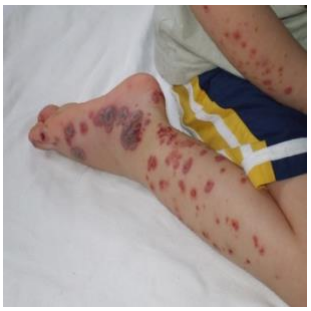
1-to know the cause: CBC, strep throat culture or ASO titer, Hep B & C serologies and ANA

2-to look for complication (small vessels are also present in organs): renal profile and urine analysis , if kidney is effected they will present RBC cast .
then take biopsy (2 biopsy)one for histology and one for immune-florescence'' from fresh lesion with 48 hours for (to rule out Henoch-schonlein purpura, they will have **IGA**).
Even if urine analysis comes negative don't release the patient they may develop cast later on .let then come after one month and repeat the analysis .

Treatment:

- Treatment of cause.
- Symptomatic treatment (if skin is only involved): rest, NSAIDS ,Antihistamine,topical steroid
- Severe visceral involvement may require high doses of corticosteroids with or without an immunosuppressive agent
- Immunosuppressive agents for rapidly progressive course and severe systemic involvement
- Referral for nephrology or pediatrics

Henoch-Schönlein purpura((HSP)

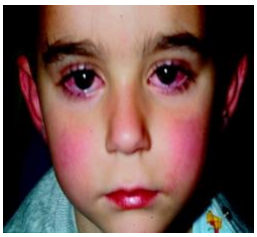


- Primarily occurs in male children
- One of the forms of idiopathic Small vessels vasculitis
- peak age 4-8 years
- Adults may be affected
- A viral infection or streptococcal pharyngitis are the usual triggering event
- In about 40 % of the cases the cutaneous manifestations are preceded by mild fever, headache, joint symptoms, and abdominal pain for up to 2 weeks
- Characterized by intermittent purpura, arthralgia, abdominal pain, and renal disease
- Typically, purpura appears on the extensor surfaces of the extremities dependent area
- Become hemorrhagic within a day and fades in 5 days
- New crops appear over a few weeks

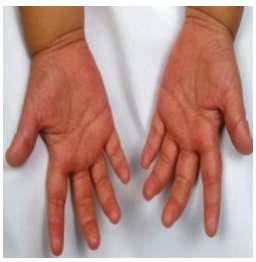
- **May be associated with:**
  - pulmonary hemorrhage
  - Abdominal pain and GI bleeding
- GI radiographs may show "cobblestone" appearance
- Renal manifestations may occur in 25% or more but only 5% end up with ESRD
- The long-term prognosis in children with gross hematuria is very good; however, progressive glomerular disease and renal failure may develop in a small percentage
- **Add up the investigation** :IgA, C3 and fibrin depositions have been demonstrated in biopsies of both involved and uninvolved skin by immunofluorescence techniques. You have to do chest x-ray rule out pulmonary hemorrhage and GI radiographs to rule out GI involvement

Mucocutaneous lymph node syndrome (Kawasaki's disease).

- Its not vasculitis its mentioned here because they do have coronary artery disease.you are the one will inform pediatrician about it.
- Predominantly seen in children less than 5 years of age.
- Occurs most often in Japan .but I have seen it here
- To make the diagnosis a patient should have a fever above 38.3 C for 5 days plus 4 of the 5 following criteria:
- Edema of hands and feet
- Polymorphous exanthem
- Nonpurulent bilateral conjunctival injection
- Changes in the lips and oral cavity shap
- Acute, nonpurulent cervical adenopathy



- Coronary arterial disease occurs and thrombocythemia may occur
- In combination vessel occlusion may occur and the subsequent MI, which occur as the child is recovering from the acute illness



Treatment:

- IVIG is the cornerstone of treatment
- Antiplatelet therapy with aspirin in high doses is recommended

Questions:

1) Which of the following skin rashes is associated with diabetes mellitus?
a) Acanthosis nigricans
b) Palpable purpura
c) Pretibial myxedema
d) Striae

2) A Henoch-Schönlein purpura scenario, which type of reaction?
a) type 1
b) type 2
c) type 3
d) type 4

3) What is the pathognomonic sign for small vessel vasculitis:
a) Vesicles
b) Bulla
c) Scars
d) Purpura

4) **Which of the following is the most common site of Henoch schonlein purpura?**
   a) Face and scalp
   b) Extensor surface of limb and back
   c) Palms and soles
   d) Flexor surface of limbs

5) **A 6-year old boy presented with palpable purpuric papules and plaques over the shins and buttoks for 5 days associated with abdominal pain. If you send skin biopsy for direct immunofluorescence, which of the following is typical for this disease?**
   a) C2 and C4 Deposition
   b) IgG and IgM deposition
   c) IgG deposition
   d) IgA and C3 deposition

6) **A 15-year-old boy presented to the emergency department with purpuric papules and plaques over the shins for one day associated with pain of the ankle joints, there symptoms were preceded by upper respiratory tract infection. Which of the following investigation is helpful to rule out internal organ involvement by vasculitis?**
   a) Urine analysis for RBC casts
   b) Renal function test
   c) Chest X-rays
   d) CBC

7) **What is the best treatment for cutaneous small vessel vasculitis without systemic involvement?**
   a) Bed rest
   b) Methotrexate
   c) steroid

8) **Pruritis:**
   a) Could indicate thyroid anomaly
   b) Pure cutaneous
   c) Always treated with topical steroids
   d) Not due to underlying disease

9) **14- Erythema nodosum lesion is**
   a) It is subcutaneous nodules
   b) Affect men more than women
   c) Most commonly involved the upper back
   d) Internal malignancy

1	2	3	4	5	6	7	8	9
A	C	D	B	D	B	A	A	A