Scleroderma Spectrum Disease

Objectives:

- Background
- Scleroderma
- Sjogren's Syndrome
- Inflammatory Myopathies

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Resources: 435 team + Davidson + kumar + Recall questions step up to medicine.

- Editing file
- Feedback

Scleroderma Spectrum Diseases

- Scleroderma Spectrum diseases are: a group of **heterogeneous** diseases that have a predominant feature and share other common features.
- They are rare, difficult to treat & associated with significant morbidity and mortality.

Predominant features:

systemic sclerosis : skin thickness

sjogren syndrome : exocrine gland involvement and dysfunction

myosotis : muscle inflammation and weakness

1- Scleroderma or Systemic Sclerosis (SSc):

-SSc is **characterized** by **skin thickening**, **vasculopathy** (Raynaud's Phenomenon) and **autoantibody production**

The pathway of scleroderma consists of 3 components:

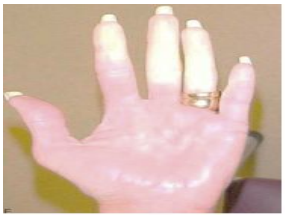
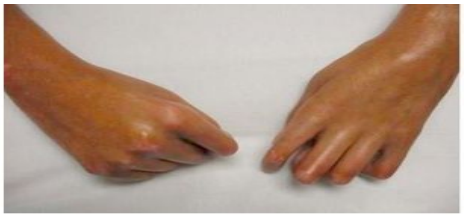
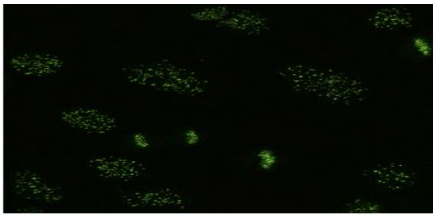
1- fibroblast activation : collagen deposition (mainly affecting skin, lung ,heart).

2-vasculopathy : NOT vasculitis ,initial inflammation then vascular hyperplasia which leads to narrowing of the lumen > reduction of blood flow .

(Main features Reynaud phenomena ,Pulmonary arterial hypertension , renal crisis)

3- Inflammatory component: t-cells, b-cells, macrophage all activated.

(Includes early stages of lung , skin changes ,pure inflammatory manifestation like arthritis myositis and vasculitis)

- Types are classified *based on* ***cutaneous involvement*** into:

(There is third type " since " They have antibodies and organ involvement but skin is normal it accounts for 1 % rare)

(Face can be involved in both types)

Diffuse (30% of cases)	Limited (70% of cases)
• Associated with more **internal organ** involvement • **Worse** prognosis.	• Often **more indolent** Has a higher risk of **pulmonary hypertension** The affected parts are distal to the elbows and knees with face involvement.
Anti-topoisomerase / RNA polymerase III antibodies	**Anti-centromere antibodies**

Clinical features: • The skin changes develop more rapidly. • Early involvement of other organ: • GIT involvement • Renal involvement • Lung disease • (mentioned below)	**Clinical features:** Usually starts with Raynaud's Phenomenon many years before any skin changes happen. • The skin is thickened, bound down to underlying structure and the fingers taper (sclerodactyly). • *Characteristic* facial appearance: 'beaking' of the nose, radial furrowing of the lips and limitation of mouth opening. • Known as CREST Syndrome (**C**alcinosis, **R**aynaud's, **E**sophageal dysmotility, **S**clerodactyly, **T**elangiectasia)

Autoantibodies:

Scl-70 (anti-topoisomerase) Most specific test	Associated with diffuse subset, Interstitial Lung Disease (ILD) , Reduced risk of Pulmonary Arterial Hypertension (PAH).
Anti-centromere	Associated with limited subset, PAH, and Digital Ulcer (DU). (Extremely specific for CREST Syndrome) ,less interstitial lung disease "opposite of scl-70"
RNA polymerase III	Associated with scleroderma renal crisis (SRC), malignancy associated SSc and mortality. with diffuse subset
Scl-PM polymyositis	Associated with **myositis** overlap. where two connective tissue diseases occur at the same time.
ANA	positive in 85% to 90%, but nonspecific.

but in real life there can be different so there are just predictors not 100%specific or sensitive

2013 Criteria for the Classification of Systemic Sclerosis.

Table 1. The American College of Rheumatology/European League Against Rheumatism criteria for the classification of systemic sclerosis (SSc)*

Item	Sub-item(s)	Weight/score†
Skin thickening of the fingers of both hands extending proximal to the metacarpophalangeal joints *(sufficient criterion)*	–	9
Skin thickening of the fingers *(only count the higher score)*	Puffy fingers	2
	Sclerodactyly of the fingers (distal to the metacarpophalangeal joints but proximal to the proximal interphalangeal joints)	4
Fingertip lesions *(only count the higher score)*	Digital tip ulcers	2
	Fingertip pitting scars	3
Telangiectasia	–	2
Abnormal nailfold capillaries	–	2
Pulmonary arterial hypertension and/or interstitial lung disease *(maximum score is 2)*	Pulmonary arterial hypertension	2
	Interstitial lung disease	2
Raynaud's phenomenon	–	3
SSc-related autoantibodies (anticentromere, anti–topoisomerase I [anti–Scl-70], anti–RNA polymerase III) *(maximum score is 3)*	Anticentromere	3
	Anti–topoisomerase I	
	Anti–RNA polymerase III	

- First item in criteria whether the sub-type is diffused or limited the score remains 9, but you have to eliminate any other causes that might imitate scleroderma such as Nephrogenic Systemic Fibrosis (allergic reaction to Gadolinium with MRI in patients with renal failure) or Graft Versus Host Disease (Post bone marrow transplantation they have severe GI and skin manifestations)
- skin thickening of the fingers extending to the palm is enough to diagnose SSc (or a total score of 9 or higher)
- If we wanted to screen the whole population for SSc we'd use the first criteria with a score of 9.

Most of the times Diagnosis is based on clinical and laboratory finding :

In the past If you have 3 out of 4 or 2 out of six you have the diagnosis,Now there is a criteria based on a scoring system that is based on those methodology used in those criteria and see the most specific finding and gave them a higher weight.

Sufficient criterion: means you can diagnose systemic sclerosis based on it so I use it in screening the population

If the sum of the others reach nice then its sufficient criterion adequate to diagnose someone.However, classification criteria Is not diagnostic you have to be careful.If the patient has something that's explains the thickness then don't use it.Those are called " scleroderma mincers "

Organ involvement in SSc:

- SSc is a disease that is difficult to evaluate, treat, and monitor.
- It's very **heterogeneous** and is usually diagnosed late. (One size doesn't fit all in SSc)
- There is **no** single drug that treats everything. The treatment would depend on what the patient needed.
- Pathogenesis in each organ involved is not the same: it could be Neurovascular, Fibroproliferative, or Inflammatory.
- A strategy should be adopted to evaluate each manifestation and organ involved on a regular basis.

and there is no single drug that treat everything

Skin involvement:

- **Skin** is the largest and most important organ involved in SSc.
- Skin involvement has been considered a reflection of internal organ involvement.
- The level of skin involvement predicts severe disease and mortality. the more skin involved the higher the chance that internal organs are involved and so the more severe the disease
- It always starts in the fingers and toes and extends ***proximally.*** Contracture of the fingers and disability are preventable with stretching exercise. Patients are advised to use emollients and creams at all times. the hand are the first to be involved and the last to be improving .
- Skin loosening occurs 5 years after the onset of the disease. patients seem as though they are imprisoned in their own skin, due to their tightened faces they can't open their mouth and their hands thicken and flex.
- The diagnosis of scleroderma is primarily based upon the presence of characteristic skin changes.
- **Treatment** is usually initiated when active skin inflammation is apparent or progressive skin thickening.

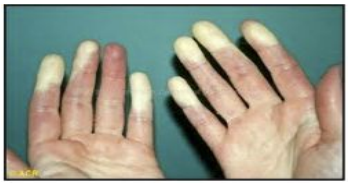
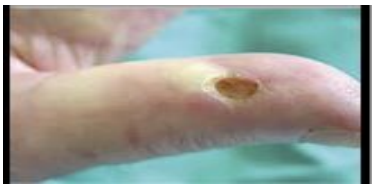
main treatment are Emollients and creams all the times, like eczema patient اخلي البيشنت يستخدم لوشن 5-6 مرات باليوم
their skin is so dry(due to ineffective sebaceous glands) and thickened,وفازلين بعد الوضوء او الاستحمام
if its significant or progressive skin involvement I'll use the following medications

1.Methotrexate (if no ILD *Because it causes pneumonitis lung toxicity and can lead to pulmonary fibrosis* or renal failure) it slows the underlying process of limited scleroderma.	4.Rituximab
2.Mycophenolate	5.Some Steroids small doses only
3.Cyclophosphamide	

Raynaud's Phenomenon (RP) & Digital Ulcers (DU):

(the patient will have exaggerated response to temperature changes and the symptoms are: discoloration, paresthesia, and pain.
The exaggerated response may be precipitated by cold weather or stress that will cause significant vasoconstriction > ischemia > and subsequent discoloration of the tips of finger or toes
all of us will have vasoconstriction when we are exposed to cold its normal mechanism cause body has priorities of the body "trunk" periphery is not important
triphasic classical raynaud's :
at first it turns **pale** due to decrease blood flow , then **blue** due to deoxygenated blood then **red** due to vasodilatation
patient may have one or two phages only
one of the complication of raynaud's phenomenon is ulcers and gangrene thats mean the vasoconstriction is so severe that it has crossed the ischemic line " actual ischemia"
it can be very mild discoloration numbness and pain .but , it can be very severe like "infarction of the finger" cuz if i have pain it will cause more vasoconstriction leading to vicious circle so I must treat adequately

- **RP and DU are 2 faces of the same coin**. There is some differences between the underlying pathogenesis of both conditions.
- 95% second most common and 50% of SSc have RP and DU respectively.
- RP tends to occur years before the diagnosis of SSc. RP is a risk factor for scleroderma, the colour of the skin changes from pale > blue > red .so if I want to look for ssc I will use puffy hands and raynaud's phenomenon.
- DU usually occurs in the first 5 years after the development of the non-RP manifestation.
- **Treatment modalities in:**

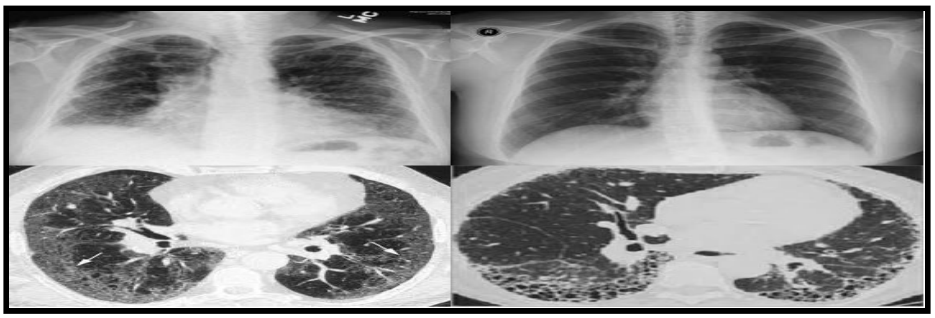
Secondary Raynaud's Phenomenon	Digital Ulcer (usually secondary to RP)
• Never underestimate non-pharmacological treatment. RP may become a vicious cycle of pain ischemia and then ulcer. • Treat pain adequately. with opiod (codeine, morphine ,tramadol) with severe pain and ulcers • **Calcium channel blockers (CCB) (**amlodipine ,nifedipine) are effective in treating RP with the cost of side effects and intolerance. or in combination with prostaglandin • **Prazosin** *does not* work well. • Efficacy of oral and IV prostaglandins. • **IV iloprost** is better than nifedipine. 	• **Aim of treatment** includes: healing and prevention of new ulcers at the end of the study. • **CCB** are commonly used but no evidence in healing DU. • **Endothelin receptor antagonist (bosentan)** has been shown to prevent new ulcers and is believed to be a disease modifying agent for SSc. Endothelin-1 is a vasoconstrictor of pulmonary vessels mainly and that's why it's antagonist is used in Pulmonary Hypertension. • **Phosphodiesterase inhibitors** have a positive effect on healing and preventing ulcers. • **Prostacyclin** has been shown to heal DU and prevent new ulcers. 

Interstitial Lung Disease (ILD):

it usually starts with inflammation "pneumonitis" leading to fibroblasts deviation and then fibrosis

- ILD is defined as a specific form of chronic, progressive fibrosing interstitial pneumonia leading to progressive loss of pulmonary function and respiratory failure.
- It usually affects the bases of the lungs.
- Diagnosis is made by a combination of imaging and pulmonary function test (PFT). The best imaging for the interstitial parts of the lung would be HRCT.
- EVERYBODY should be screened for ILD. Since ILD is the leading cause of death in SSc patients they should ALL be screened for it.
- diagnosis is made by CT "x-ray is not very sensitive "& pulmonary function test.

Clinical Findings in ILD non-specific	PFT in ILD shows
• Tachypnea • Tachycardia • Cyanosis • Clubbing • Reduced chest expansion • Fine early inspiratory crackles	• Low FVC • Low FEV1 • Normal or high FEV1/FVC ratio • Low diffusion capacity of carbon monoxide (DLCO) • The PFT indicates a restrictive pattern with low DLCO.



Treatment:

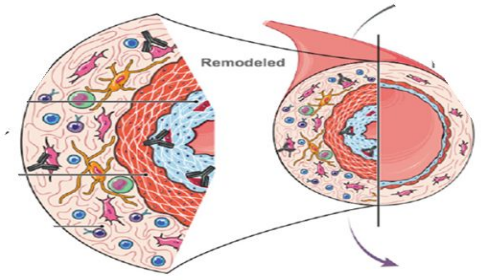
- **Cyclophosphamide** is the standard of care used as treatment induction in ILD up to this day. (improves dyspnea and PFTs)
- Alternative could be: **MMF** or **rituximab**. after 6 months of induction I'll start maintenance
- Maintenance includes: **MMF**, **AZA** and **RTX**.
- **Steroids** are a part of induction and maintenance.

Pulmonary Arterial Hypertension (PAH): comes late in the disease

- PAH is defined as PAP ≥ 25mmHg with a pulmonary wedge pressure ≤ 15 mmHg.
- PAH has become a very important cause of mortality along with ILD; they cause 33% of death.
- Affects 8-13% of SSc (RHC Criteria)
- Remember, you can have Pulmonary HTN secondary to ILD which makes diagnosis and management more complex.

Table 1 Primary causes of death in 234 patients with SSc

	N	%
All death cases	234	100
SSc-related death cases	128	55
Pulmonary	78	33
Pulmonary fibrosis	45	19
Isolated PAH	33	14
Myocardial	33	14
Arrhythmia	14	6
Left heart failure	8	3
Right heart failure	5	2
Biventricular heart failure	4	2
Pericarditis (constriction and/or tamponade)	2	1
Renal	10	4
Renal crisis	10	4
Gastrointestinal	7	3



- PAH can be alone 'isolated' called pulmonary arterial hypertension that is caused by arterial hyperplasia or secondary to ILD.
- there will be inflammation > hyperplasia> significant narrowing

Solutions to Reduce PAH-related Mortality & Morbidity.

- Early detection
- Aggressive treatment similar to RP but without CCB
- Early referral for lung transplant. The transplant may also be a heart-lung transplant since they want the pulmonary arteries.

How to Diagnose PAH in SSc

- 🔰 **The first investigation** to order is **Echocardiography.**
- 📍 **The gold diagnostic** tool is **Right sided heart catheterization.**
- PFT may show isolated low DLCO

Clinical Findings in PAH	Treatment of PAH like reynaud but without Calcium channel blockers
• Desaturation • Tachycardia • Tachypnea • Syncope • Palpable P2 and parasternal heave. • Loud 2nd heart sound. • Signs of right sided heart failure. very late	• **Endothelin Receptor Antagonist:** • - **Bosentan** • - Ambrisentan • - Macitentan • **Phosphodiesterase Inhibitors** • **Prostacyclins**

Gastrointestinal System Involvement: not lethal but affects quality of life

- GIT is the most common internal organ to be involved (95-99%).
- It affects the whole tract:

• **Esophagus** → Dysmotility and reflux leading to stricture. • **Stomach**→ gastroparesis , watermelon appearance gastric antral vascular ectasia (GAVE) with telangiectasia.	**Treatment of both includes:** • lifestyle modification. • Proton pump inhibitors. • Iron deficiency anemia treatment.
• **Small bowel** → blind loop syndrome (a lazy part of small bowel) complicated by bacterial overgrowth manifesting as chronic diarrhea and malabsorption. (very thin patients	**Primary treatment:** • sequential antibiotics. **Advanced case:** • Stomas and TPN can be offered in advanced case
• **Large bowel** → Chronic constipation, fish mouth diverticula. Meaning that the diverticula has a wide neck. and can be complicated with diverticulitis.	**Treatment includes:** • Laxatives.

- **Anorectal**→ Fecal incontinence.

Devastating complication and difficult to manage but one option could be to **clear bowel frequently before going out**. by giving laxative in the morning

Kidney Involvement:

Scleroderma Renal Crisis (SRC):

- Patients with SSc usually have low BP, once you see ***high BP*** suspect SRC. Patients have a massive activation of RAS. The patient's usual systolic BP is 95 so even if systolic BP is considered normal at 140 for SSc patients it'd be considered VERY high.
- The **primary histopathologic changes** in the kidney are localized in the small arcuate, interlobular arteries and the glomeruli.
- The **characteristic** finding is intimal proliferation and thickening that leads to narrowing and obliteration of the vascular lumen, with concentric ***Onion skin*** hypertrophy. leading to the activation of the Aldosterone-renin-angiotensin pathway.
- Precipitating factors include: high dose aldosterone , cyclosporine, and pregnancy.
- Anemia in SSc is usually iron deficiency, once you see ***microangiopathic hemolytic anemia*** suspect SRC. it is the breakdown of RBC's in small BV due to them being inflamed and narrowed.

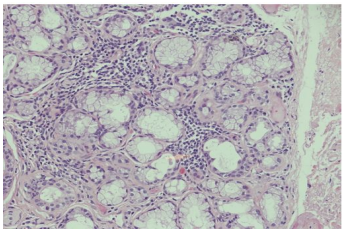
Clinical Findings	Treatment
• Any new onset HTN with a BP of > 150/85 or 20 mmHg increase from baseline is critical to recognize. • Normotensive renal crisis can occur. • Urinalysis might show proteinuria and hematuria **but no RBC cast**. proteinuria would indicate leakage whereas RBC casts indicate inflamed tubules of the kidney as seen in glomerulonephritis. • High creatinine is almost universal. • Anemia with positive hemolytic workup points to microangiopathic hemolytic anemia.	• Control BP by reducing it 10 mmHg every 24h • Best and ONLY drug ACEI. Some patients were given aggressive ACEI treatment and had subsequently gotten off dialysis! • if the patient is allergic use **ARBs.** however, the result is not guaranteed • Even if it progressed to ESKD 40% might recover and get back to near normal function.

Other Manifestations:

- **Cardiac** → Myocardial fibrosis leading to conduction abnormalities, cardiomyopathy, and accelerated coronary artery disease. Two patients had presented in the ER with complete heart block.
- **Arthritis**→ similar to RA with erosions and joint destruction.
- **Myositis**→ manifested by weakness with no pain and high muscle enzymes.

2- Sjogren's Syndrome (SS):

- It is a systemic chronic inflammatory disorder characterized by lymphocytic infiltrates(T&B lymphocytes) in **exocrine organs** & has extra-exocrine manifestations
- it's an autoimmune disorder secondary to antibodies predominantly against lacrimal and salivary glands. 90% of those affected are women.
- Its an underdiagnosed diseases ,its symptoms are not specific , many people have it and dont know . when someone have severe dry eyes that he has to apply eyes drops every 5-6 hours or wakes him at night and dry mouth that he can't speak and choke (affecting quality of life) then he should be referred .



Most individuals with sjogren's syndrome present with Sicca (dryness) symptoms, such as:

1. Xerophthalmia (Dry eyes) • gives the feeling of "sand in the eyes" as well as burning and itching (keratoconjunctivitis).	**3. Vaginal dryness** loss of vaginal secretions leads to dyspareunia.
2. Xerostomia (Dry mouth) • pts in constant need to drink water. • loss of saliva will lead to rampant dental caries.	**4. Parotid gland enlargement** **5-sebaceous gland (dry skin)**

Complications:

- SS patients are at risk of developing non-Hodgkin's B cell **lymphoma** (the most dangerous complication) 20 times more than the general population.
- Look for persistent LAP or disappearance of RF. Their LN usually come and go but persistent or firm nodes would indicate malignancy.

Criteria of SS:

Diagnosis of primary SS requires **at least 4** of the criteria listed below *(but you must have either no. 5 or no. 6 included as one of the criteria because the first 4 are not enough to diagnose the disease):*

1. Ocular dryness	4. Oral signs (sialogram, scintigraphy or sialometry findings)
2. Oral dryness	5. Positive minor salivary gland biopsy findings. You'd look for lymphocytic infiltration
3. Ocular signs (Schirmer test) You apply a piece of paper in your eye and wait till it gets wet, not used often due to the uncomfortable feeling it causes.	6. Positive anti-SSA or anti-SSB antibody results.

Extraglandular manifestations of SS:

Arthritis	Palpable purpura	Renal tubular acidosis type 1
Myositis	ILD	Interstitial nephritis
Pancytopenia	Demyelinating disease multiple sclerosis like disease	Fatigue the most prominent manifestation

Diagnostic Tests:

- 🔰 Best initial test → **Schirmer test:** in which a piece of filter paper is placed against the eye and then observed for the amount of wetness on the filter paper.
- 📍 Most accurate test → **lip or parotid gland biopsy** they reveal lymphoid infiltration in the salivary glands.

Treatment of Glandular Manifestations	Treatment of Extraglandular Manifestations
• initial therapy is to water the mouth. • Oral hygiene • Avoid sugar due to the low saliva being produced you don't have a barrier to help fight against cavities. • Florid products • Parasympathomimetics (pilocarpine) and cevimeline increase acetylcholine, the main stimulant to the production of saliva. • **Artificial eye & mouth moisturizers** • Creams and lotions • Vaginal lubricants	• **Treatment of all includes immunosuppressive agents:** • Steroids • MTX (Except for ILD) • Azathioprine • Cyclophosphamide • Rituximab • For RTA you just need to give NaHCO3

3-Idiopathic Inflammatory myopathies (IIM):

What is it:

- They are a group of autoimmune myopathies that are characterized by muscle weakness mainly in the **proximal** muscles "if you see distal involvement think about other differential or its very severe" . **It is INSIDIOUS** and progressive.
- **Antibody:** ***anti Jo-1***
- Polymyositis (PM) is a rare muscle disorder of unknown etiology in which there is inflammation and necrosis of skeletal muscle fibres. When the skin is involved it is called dermatomyositis (DM). PM and DM affect adults and children and are more common in women.

those three are poor prognostic factors :

- **Pharyngeal muscle involvement** can present as dysphagia and can lead to aspiration pneumonia.
- **Chest wall weakness** can present as dyspnea and lead to type II respiratory failure.
- **Can affect the heart** and lead to cardiomyopathy.

Clinical features:

- - Symmetrical muscle weakness and wasting affecting the proximal muscles of the shoulder and the pelvic girdle.
- - Patients have difficulty squatting, going upstairs, rising from a chair, and raising their hands above their heads
- - In DM: there are also characteristic skin changes: heliotrope (purple) discoloration of the eyelids and scaly erythematous plaques over the knuckles (Gottron's papules). **DM is associated with an increased incidence of underlying malignancy. (Ovary, Lung, GI, Lymphoma)**

scenario for myositis

تجي المريضة تقول انا عند ضعف في يدي ورجلي من-9 6 شهور ما اقدر اوقف وقت طويل في المدرسة او مقدر اشيل ولدي وقت طويل ..تسالها هل كنت طبيعية قبل سنة سنتين تقول ايوه بس لما اطلع السوق لازم اجلس ارتاح ما اقدر اكمل زي الباقين due so its very slowly & progressive and present very late ,unlike dermatomyositis with present early to skin changes

Types of IIM: focus on the first two

1. Primary idiopathic polymyositis (PM).
2. Primary idiopathic dermatomyositis (DM).

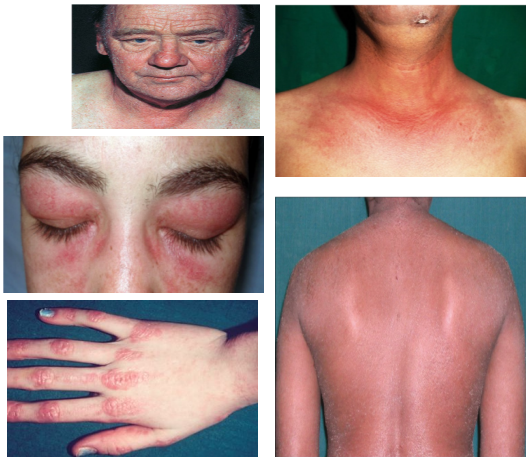
3. Polymyositis or dermatomyositis associated with malignancy.
4. Childhood polymyositis or dermatomyositis.
5. Polymyositis or dermatomyositis associated with another connective tissue disease.
6. Inclusion body myositis. rarest of the rarest
7. Miscellaneous (e.g. eosinophilic myositis, myositis ossificans, focal myositis, giant cell myositis) not that imp.

Criteria for PM and DM:

Features
- 1. Symmetrical proximal muscle weakness
- 2. Muscle biopsy evidence of myositis
- 3. Elevation in serum skeletal muscle enzymes
- 4. Characteristic electromyogram pattern of myositis
- 5. Typical rash of dermatomyositis

Polymyositis
- Definite: all of 1–4
- Probable: any 3 of 1–4
- Possible: any 2 of 1–4

Dermatomyositis
- Definite: 5 plus any 3 of 1–4
- Probable: 5 plus any 2 of 1–4
- Possible: 5 plus any 1 of 1–4



Rashes of DM:

Photosensitivity. in areas exposed to sun	Gottron's papules/ sign	Erythroderma. red all over
Heliotrope rash.	Shawl rash.	

- Heliotrope rash and Gottron's Papules are only found in this disease, pathognomonic or diagnostic

Extramuscular manifestations: same as others

- Arthritis.
- RP.
- ILD (antisynthetase syndrome). mild myositis and severe lung involvement

Investigations:

Most important: rule out other causes of myopathies. especially if it is polymyositis since there is no rash i must exclude other causes like thyroid ,endocrine , drugs ,genetic,neurological causes.

• Muscle enzymes	• LD (RBC and muscle enzyme)	• Aldolase	• MRI biopsy: Lymphocytic infiltration polymyositis is not dermatomyositis with skin disease, they are different disease the biopsy will be different

• CK	• AST,ALT (liver and muscle enzymes) patient who came for acne treatment and did liver function test and AST ,ALT were 5000,so they did liver biopsy and its was normal and when they did CK it was high so there referred her to rheumatologist	• MRI muscle: showing muscle edema	• EMG: myopathic changes

Diagnostic Tests:

- Best initial test → CPK and aldolase.
- Most accurate test→ Muscle biopsy

Treatment of all manifestations
• Muscle strengthening • Steroids: *oral prednisolone is the treatment of choice.* When patients are unresponsive or intolerant to steroids: • Methotrexate • Mycophenolate mofetil • Azathioprine • Intravenous immunoglobulins • Rituximab • Hydroxychloroquine helps skin lesions.

summary

Scleroderma or systemic sclerosis

- characterized by skin thickening, vasculopathy and autoantibody production.

Types: 1) Diffuse disease > reduced risk of PAH >Anti-topoisomerase (Scl-70)/RNA polymer III antibodies.
2) Limited form >higher risk of PAH> anti-centromere antibodies

Organ Involvement: 1) Skin - Most Important - :- reflection of internal organ involvement \ always starts in the fingers and toes
*Raynaud's Phenomenon
*Digital Ulcers
2) Lungs: *ILD bases of the lungs \ Low DLCO
*PAH: cause death \ order echocardiography \ Low DLCO
3) GIT: dysmotility \ blind loop syndrome \ fish mouth diverticulae \ fecal incontinence
4) Kidney: Scleroderma Renal Crisis (highBP)
5) Others: Cardiac \ Arthritis \ Myositis

Sjogren's Syndrome (SS)

a systemic chronic inflammatory disorder characterized by lymphocytic infiltrates in exocrine organs.

Symptoms: - Xerophthalmia (dry eyes) - Xerostomia (dry mouth) - Vaginal dryness
- Parotid gland enlargement - Extra-glandular manifestations (Arthritis, Myositis, Pancytopenia, ILD, RTA1)
*- Positive anti–SSA or anti–SSB antibody results

Complications Lymphoma

Idiopathic inflammatory Myopathies (IIM)

a group of autoimmune myopathies that are characterized by muscle weakness mainly in the proximal muscl

Types: 1) idiopathic polymyositis (PM)
2) idiopathic dermatomyositis (DM)
Others..

Symptoms: - Photosensitivity - Heliotrope rash
- Gottron's papules/sign - Shawl rash
- Erythroderma - Extra-muscular manifestations

Organ Involvement: 1) Pharyngeal: dysphagia.
2) Chest wall: dyspnea.
3) Heart: cardiomyopathy

Investigation: • most :important rule out other causes of myopathies.
- Muscle enzymes - CK - AST - ALT - Anti-Jo1 antibody

CONDITION	TRETMENT
Skin involvement	• Methotrexate (if no ILD or renal failure) • Cyclophosphamide • Rituximab
RP	• CCB • prostaglandins. • iloprost
DU	• CCB • Endothelin receptor antagonist (bosentan) • Phosphodiesterase inhibitors • Prostacyclin
ILD	• Cyclophosphamide • Alternative could be: MMF or rituximab.• Steroids
PAH	• Endothelin R. Ant.: -Bosentan-Ambrisentan • Phosphodiestrase Inhibitors • Prostacyclins
glandular manifestations	• Oral hygiene • Avoid sugars Parasympathomimetics (pilocarpine) •moisturizers •Creams and lotions lubricants
extra-glandular manifestations	immunosuppressive agents: • Steroids • MTX • Azathioprine • Cyclophosphamide • Rituxmiab
IIM	

MCQ'S

1- development of lymphoma is complication of which of the following ?

A-raynaud's phenomenon

B- renal crisis

C- sjogren syndrome

D- TB

answer:C

2- which of the following is the second most common manifestation of Scc?

A-skin thinning

B-skin thickness

C- myositis

D- raynaud's phenomenon

answer:D

3- which is indicative of malignant manifestation in sjogren syndrome ?

A- multiple lymph nodes

B- parotid gland enlargement

C- firm lymph node

D- severe eye dryness

answer:C

4- A 60-year-old woman complains of dry mouth and a gritty sensation in her eyes. She states it is sometimes difficult to speak for more than a few minutes. There is no history of diabetes mellitus or neurologic disease. The patient is on no medications. On examination, the buccal mucosa appears dry and the salivary glands are enlarged bilaterally. Which of the following is the best next step in evaluation?

A. Lip biopsy

B. Schirmer test and measurement of autoantibodies

C. IgG antibody to mumps virus

D. A therapeutic trial of prednisone for 1 month

E. Administration of a benzodiazepine

answer: B

5- A 45-year-old woman has pain in her fingers on exposure to cold, arthralgias, and difficulty swallowing solid food. She has a few telangiectasias over the chest but no erythema of the face or extensor surfaces. There is slight thickening of the skin over the hands, arms, and torso. What is the best diagnostic test?

A. Rheumatoid factor

B. Antinuclear, anti-topoisomerase I, and anticentromere antibodies

C. ECG

D. BUN and creatinine

E. Reproduction of symptoms and findings by immersion of hands in cold water

answer: B

6- Over the last 6 weeks a 35-year-old nurse has developed progressive difficulty getting out of chairs and climbing stairs. She can no longer get in and out of the bathtub. She has no muscle pain and takes no regular medications. She does not use alcohol and does not smoke cigarettes. On examination she has a purplish rash that involves both eyelids. There is weakness of the proximal leg muscles. What is the best next diagnostic test?

A. Vitamin B12 level

B. Chest x-ray

C. HLA B27

D. MRI scan of the lumbar spine

E. Creatine kinase (CK)

answer: E