



Ocular Manifestations of Systemic Disease

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Objectives

1. To discuss commonly encountered ocular findings of common systemic diseases
2. To discuss ocular findings of other systemic diseases
3. To provide a brief overview of treatment options for ocular findings

Vascular Disorders

1. Diabetes
2. Hypertension
3. Carotid Occlusive Disease/ Ocular Ischemic Syndrome
4. Sickle Cell Disease
5. Amaurosis Fugax

Neoplasms

1. Primary ocular melanomas
2. Metastatic carcinomas

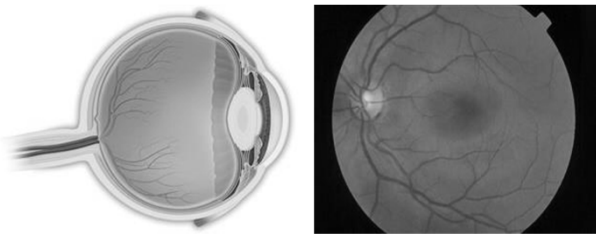
Autoimmune Disorders

1. Connective Tissue Disorders (Sjogrens)
2. Rheumatoid Arthritis
3. HLAB27 positive
4. Systemic Lupus Erythematosus
5. Sarcoidosis
6. Giant Cell Arteritis
7. Thyroid Eye Disease
8. Myasthenia Gravis

Medications

- Hydroxychloroquine

Normal eye anatomy



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Diabetes

- According to CDC:
- More than 34 million US adults have diabetes
- More than 88 million have pre-diabetes
- 4.2 million have diabetic retinopathy

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Diabetes

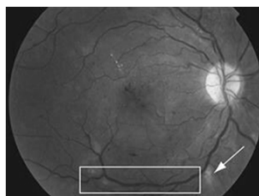
- Cataracts
- Diabetic retinopathy (Non- proliferative, Proliferative)
- Cranial nerve palsies



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Non-proliferative Diabetic Retinopathy

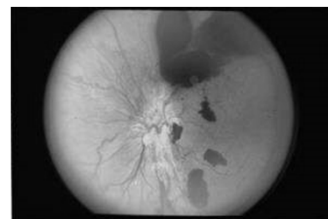
- Mild, Moderate, Severe depending on level of intraretinal microvascular changes
- Hemorrhages, venous beading, hard exudates
- Macular edema



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Proliferative Diabetic Retinopathy

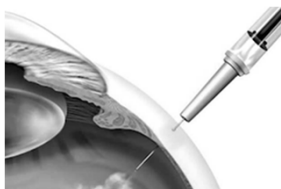
- Abnormal blood vessel growth in the iris, angle, optic disc or elsewhere
- Vitreous hemorrhage
- Macular edema



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Diabetic retinopathy treatments

- Intravitreal injections
- Lasers
- Most important is to prevent with blood sugar and blood pressure management

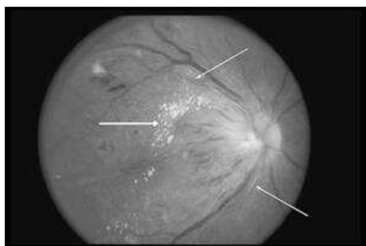


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Hypertensive Retinopathy

- Seen with elevated blood pressure
- Classified according to level of blood vessel damage, bleeding and optic nerve involvement

Hypertensive Retinopathy

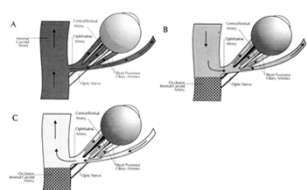


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Carotid Occlusive Disease

- Decreased blood flow of carotid artery to eye and ocular structures causes severe decreased blood flow to eye
- Results in microvascular damage

Carotid Occlusive Disease



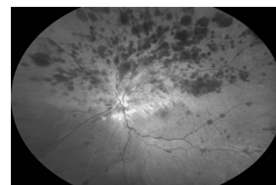
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Carotid Occlusive Disease

- Hypoperfusion of the eye
- Atherosclerosis is most common cause



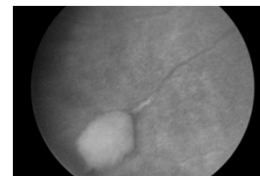
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Sickle Cell Disease

- Includes sickle cell and sickle trait
- More peripheral changes from diabetic retinopathy
- Classified according to abnormal blood vessel growth and bleeding

Sickle Cell Retinopathy

- Retinal hemorrhages
- Ischemic infarcts



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Amaurosis Fugax

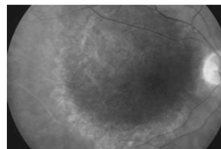
- Ischemia in the retina, choroid or optic nerve
- Can be a stroke precursor
- Important to work up for stroke

Neoplasms

1. Primary ocular melanomas
2. Metastatic carcinomas

Primary Ocular Melanomas

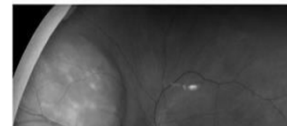
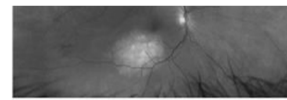
- Iris melanoma
- Choroidal melanomas



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Metastatic Melanomas

- Breast, lung
- Lymphoma



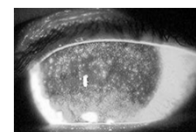
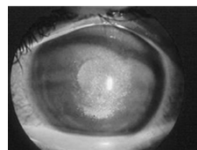
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Autoimmune Disorders

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Sjogrens syndrome

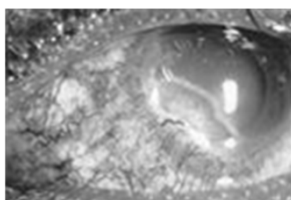
Severe dry eye



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Rheumatoid arthritis

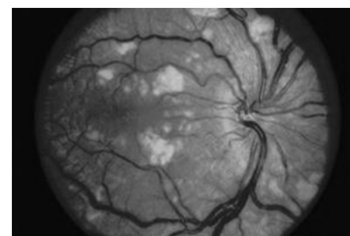
- Dry eye
- Corneal thinning
- Episcleritis
- Scleritis



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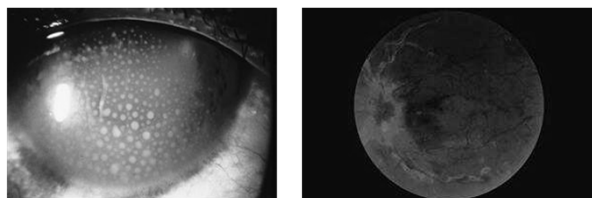
Lupus

- Can involve many parts of the eye
- Vasculitis



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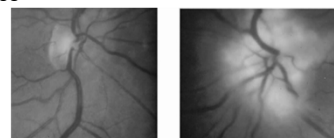
Sarcoidosis



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Giant Cell Arteritis

- Severe inflammatory reaction to medium and large arteries
- Fatigue, weight loss, jaw claudication
- ESR, CRP,
- Steroids, Temporal artery biopsy



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Thyroid Eye Disease

- Affects eyelids, eye muscles



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Myasthenia Gravis

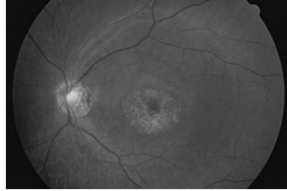
- Attacks eyelids, eye muscles, causing diplopia and variable ptosis



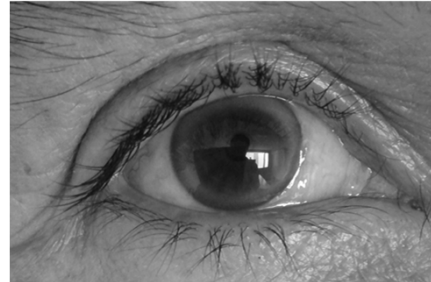
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Medications

- Hydroxychloroquine



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