

Uveitis unplugged: lymphoma, uveitis and masquerade syndromes

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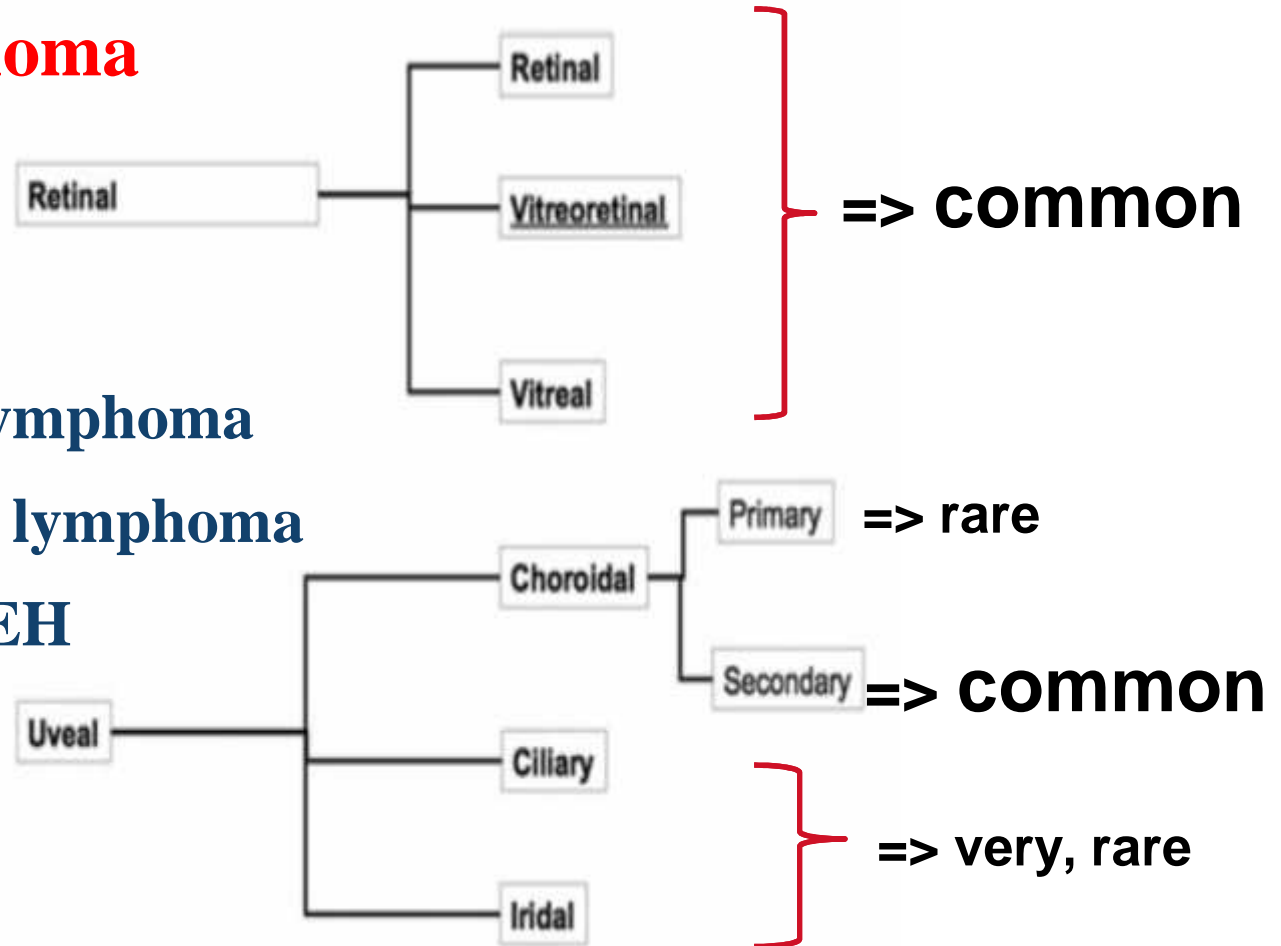
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No financial or proprietary interest in any material discussed

Ocular Lymphoma

- rare
- primary ocular lymphoma
- secondary ocular lymphoma
- 2-3 per year at SEH



Primary intra-ocular lymphoma

- **primary intra-ocular lymphoma (PIOL) an umbrella term**
 - **subset CNS lymphoma**
 - **95+% are B cell lineage; occasional T cell**
 - **diffuse large B-cell lymphoma (DLBCL)**
 - **prominent reactive T-cell infiltrate**
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Secondary intra-ocular lymphoma

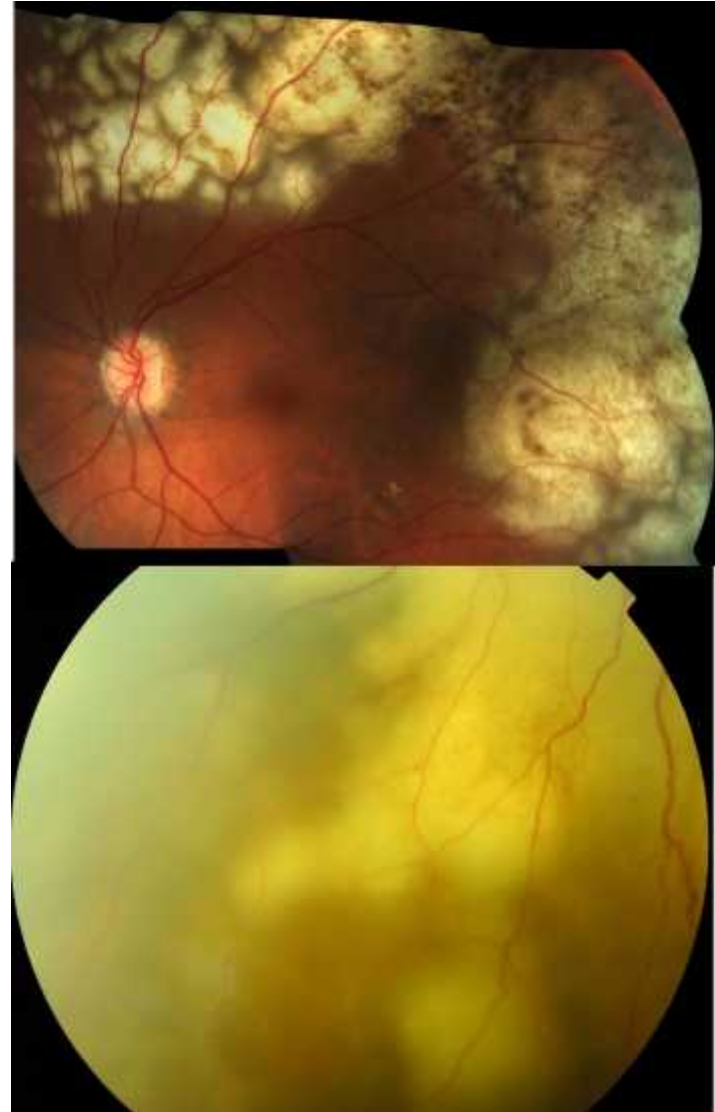
- **ocular involvement from systemic lymphoma**
 - **NHL most common**
 - **choroidal deposits common**
 - **optic nerve/meningeal spread**
 - **very rare elsewhere in eye**
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Clinical Features

- **increasing frequency (by 3-5% per year) over last 40 years**
 - **may present before, after or with CNS lymphoma**
 - **“*older*” patients > age 45 - 50**
 - **immunocompromised / HIV infection – younger**
 - **80% eye CNS lymphoma**
 - **20% CNS lymphoma eye**
-

Clinical Features

- perivascular infiltrates
- multiple small creamy outer retinal spots
- opaque areas of retina
- confluent yellow white masses
- leopard spots
- often equatorial retina
- optic disc swelling
- no/minimal CME
- rarely RVO and rubeosis



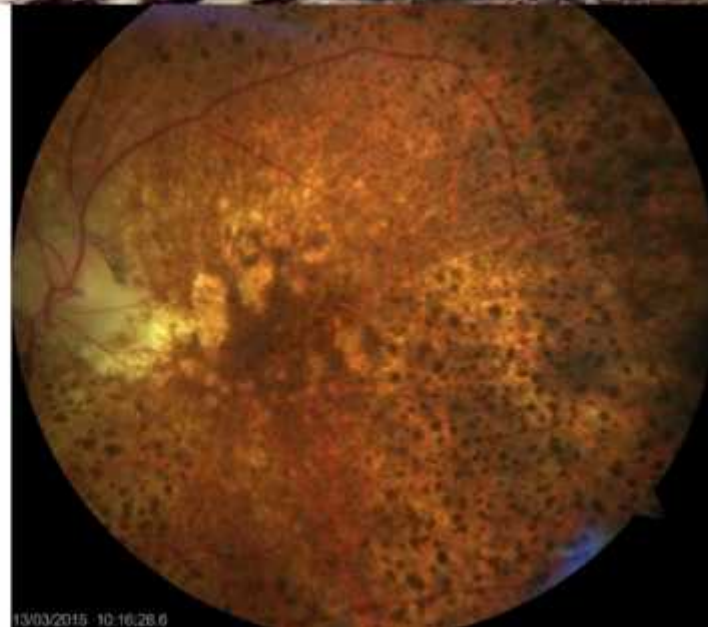
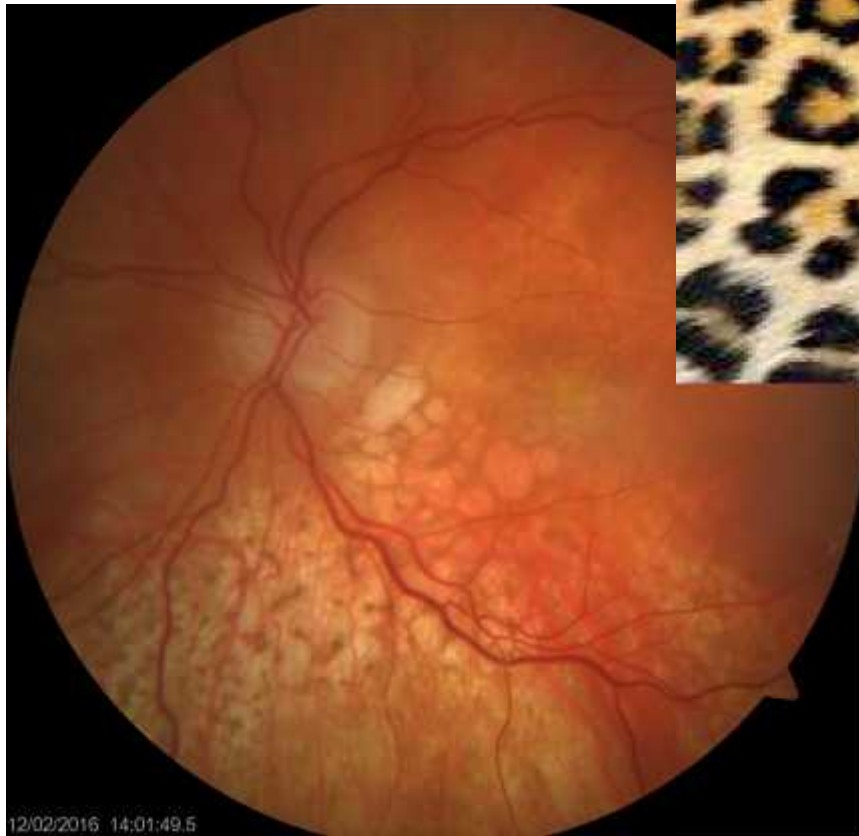


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Ocular Lymphoma



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Retinal Lymphoma

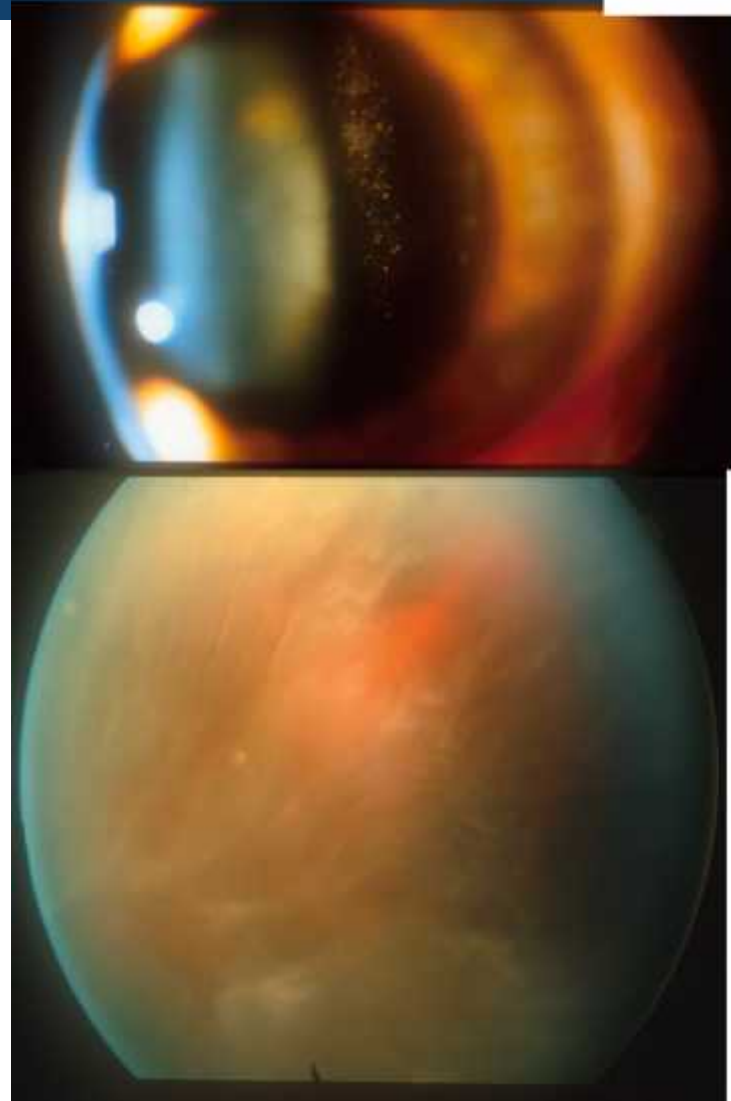


SAVE SIGHT
INSTITUTE



Clinical Features

- **may be vitreous alone; usually retinal signs**
- **better vision than you would expect**
- **variable sized clumps of cells**
- **often sheets of cells & veils**
- **vitreous architecture preserved**



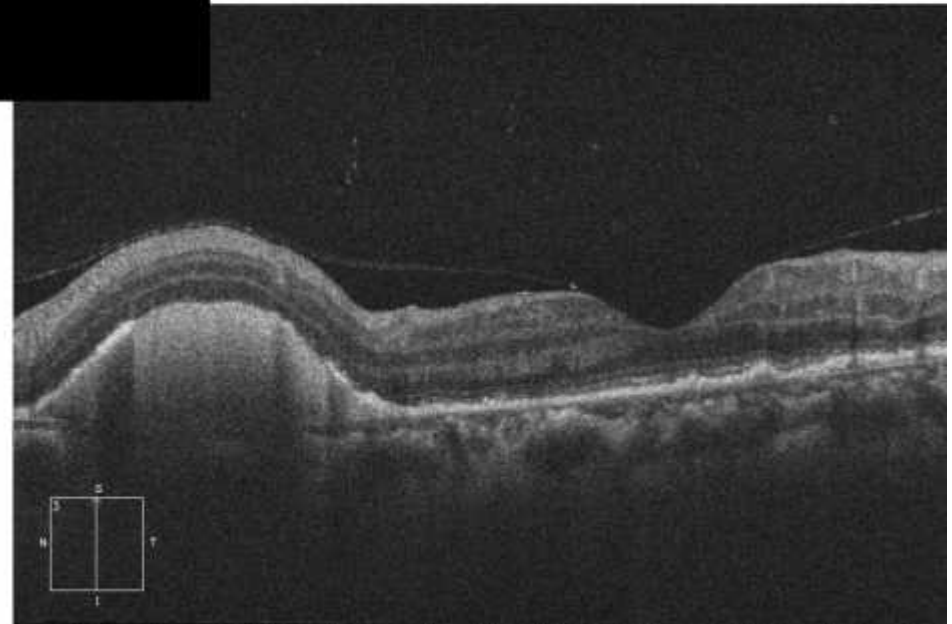
Diagnosis

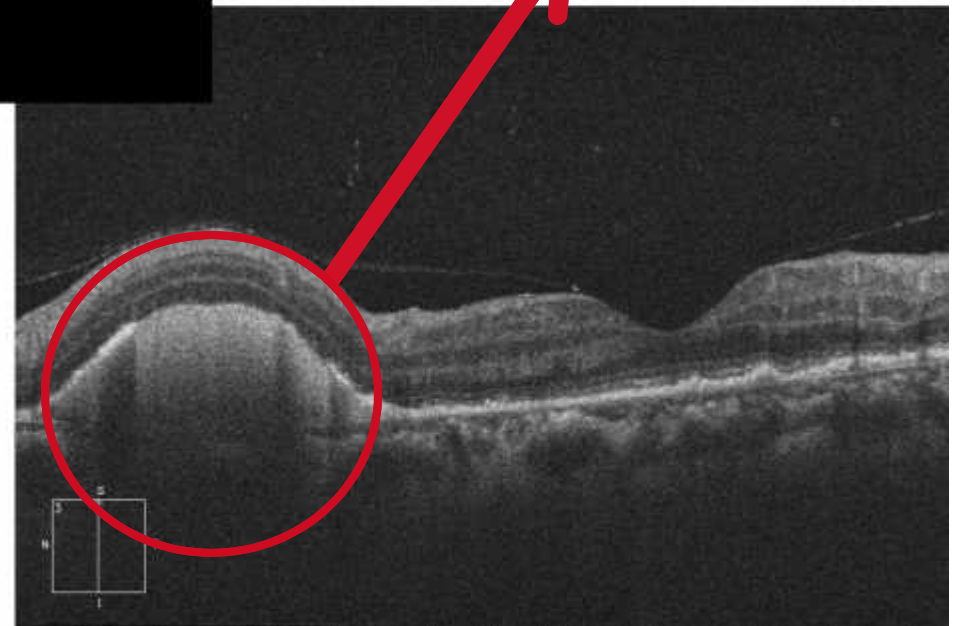
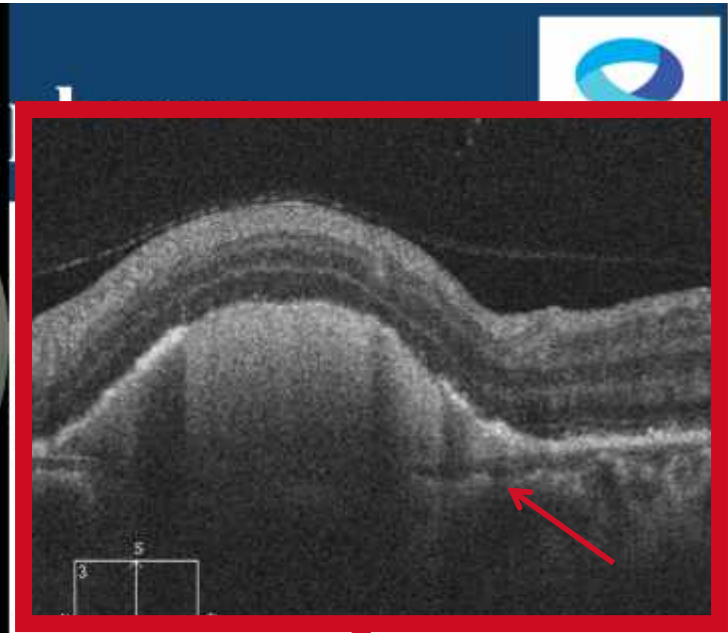
- **high index of suspicion**
 - **initial onset of uveitis after age 45 – 50**
 - **V/A better than you would expect**
 - **suggestive/consistent clinical features**
 - **poor / atypical response to therapy**
 - **ocular & neurological symptoms**
 - **immunocompromised / HIV infection**
 - **multimodal imaging esp OCT**
 - **“the issue is tissue” => need a histological diagnosis**
-

phoma



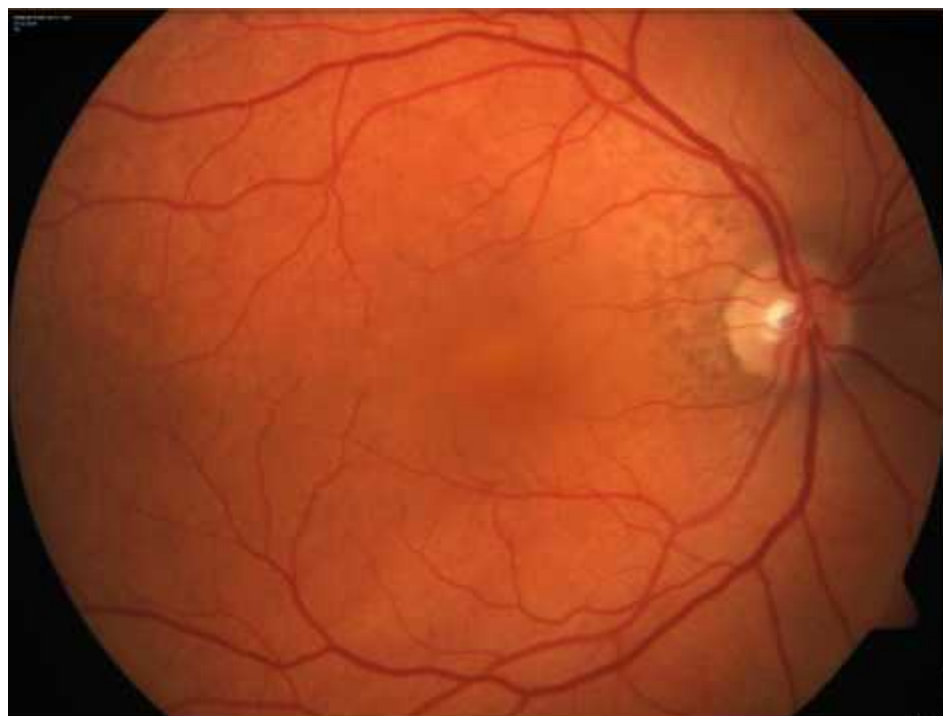
1° Ocular Lymphoma





1° Ocular Lymphoma

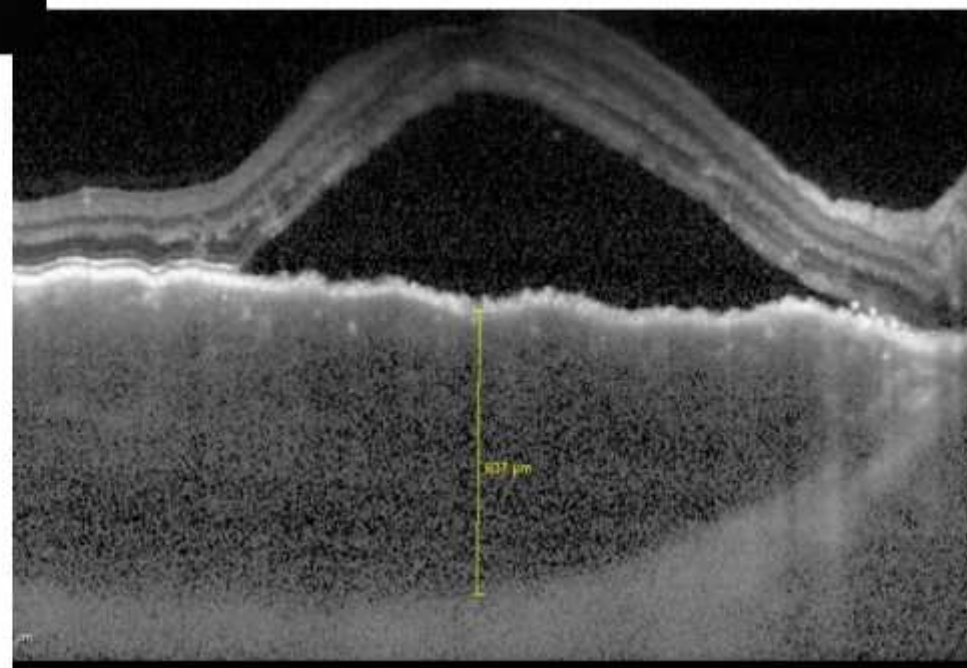


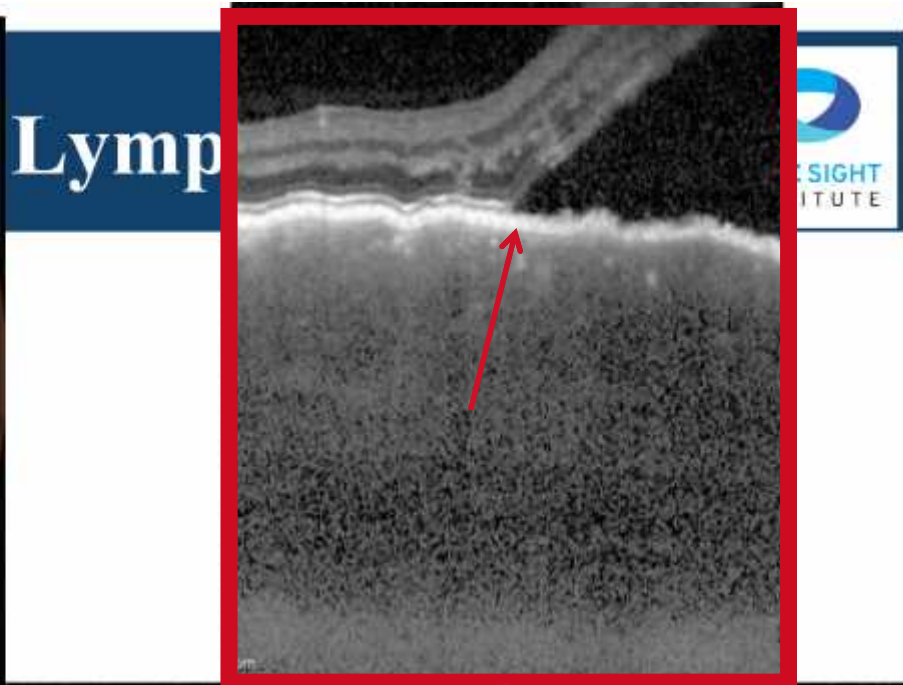
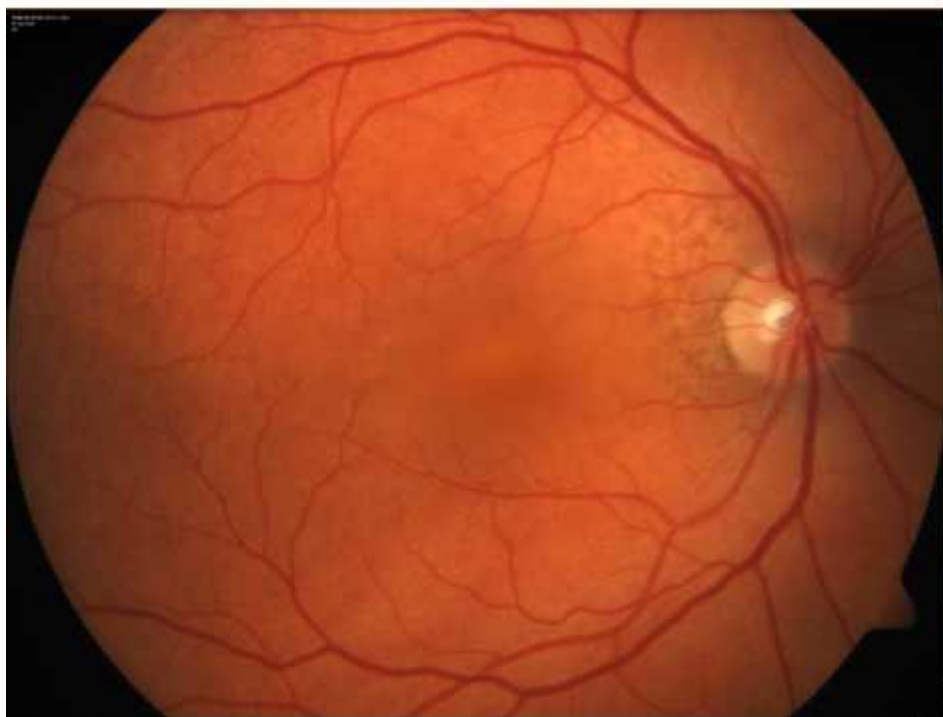


Lymphoma



2° Ocular Lymphoma





2° Ocular Lymphoma

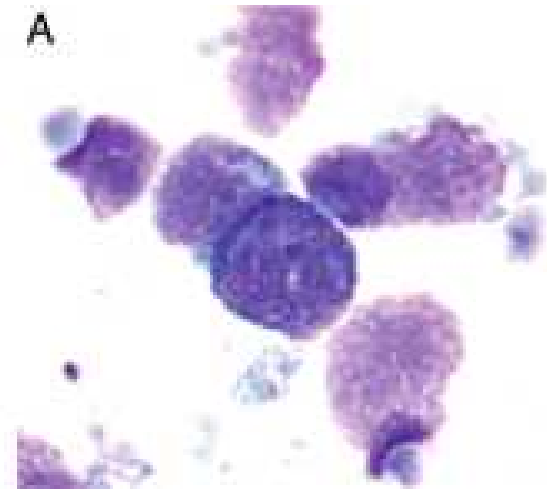
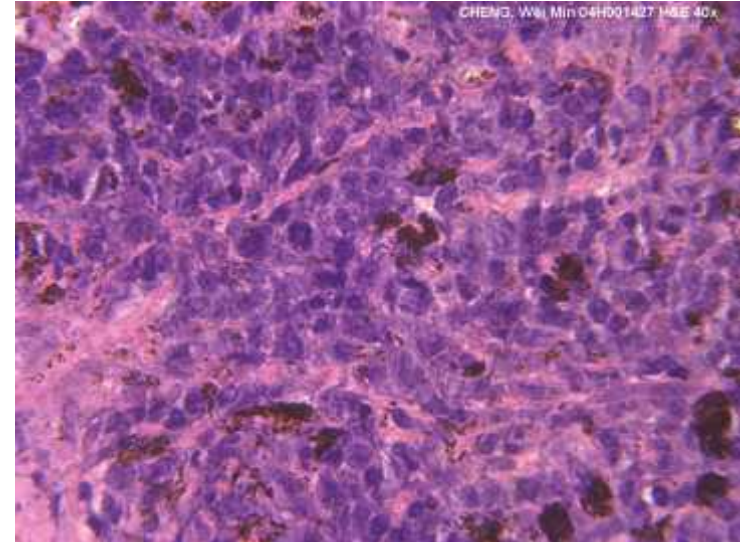


- **clinically significant vitritis - vitreous**
- **retinal lesion - retinal biopsy**
- **discuss the patient with pathologist**
- **prioritise specimen allocation**
- **needle tap Vs formal TPPV**
- **cells fragile – immediate transport in tissue culture medium (RPMI)**
- **1-2 mls undiluted vitreous + 2nd sample with infusion on & collect vitreous washings**



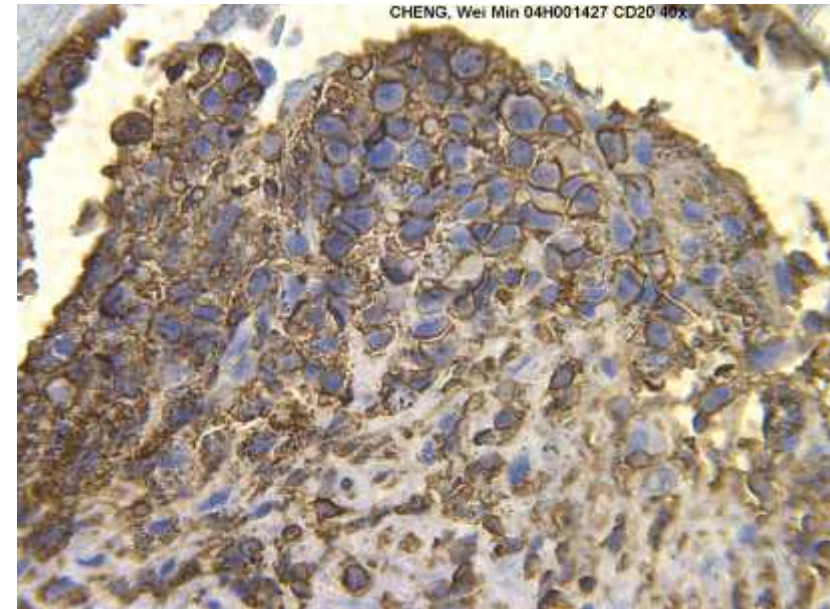
Pathology

- lymphoma cells accumulate around retinal blood vessels
- deposit between RPE & Bruch's membrane
- patchy atrophic RPE
- can replace full thickness retina; often necrotic areas
- vitreous cells – lymphoma + reactive T cells & macrophages



Immunopathology

- antibody secretion – IgM, A, G; light chains: ,
- IHC markers – CDs 19, 20, 22
- gene profiles and products – translocations, proteins
- gene rearrangement profiles - CDR3 structure, others
- cytokine profile – IL10/IL6 ratio





Ocular Lymphoma Differential Diagnosis

Infectious

- **herpetic retinitis**
- **syphilis**
- **TB related uveitis**
- **toxoplasmosis**
- **endophthalmitis**

Non Infectious

- **sarcoidosis**
- **MFC**
- **Behcets disease**
- **white dot syndromes**
- **intermediate & pan uveitis**
- **VKHD**

Neoplasms

- **metastasis**
 - **melanoma**
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Infectious Uveitis Masquerades:

Source of Infection

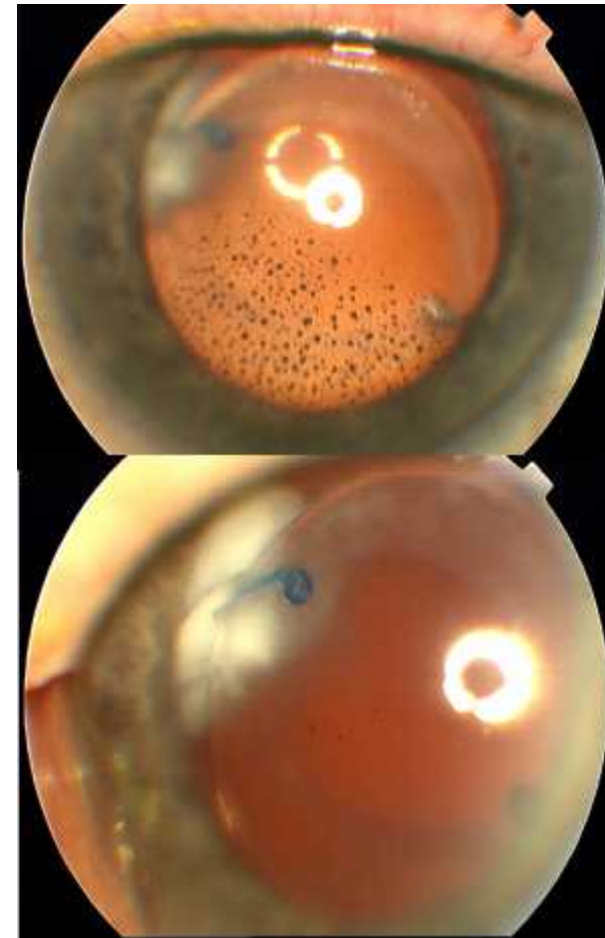
- uveitis after ocular surgery
- uveitis after intra-vitreous injection
- uveitis following severe systemic sepsis / illness
- uveitis following childbirth

Immunocompromised Host

- uveitis in immunocompromised patient
 - uveitis in a transplant patient
 - uveitis in IV drug users
 - uveitis in patients with HIV infection
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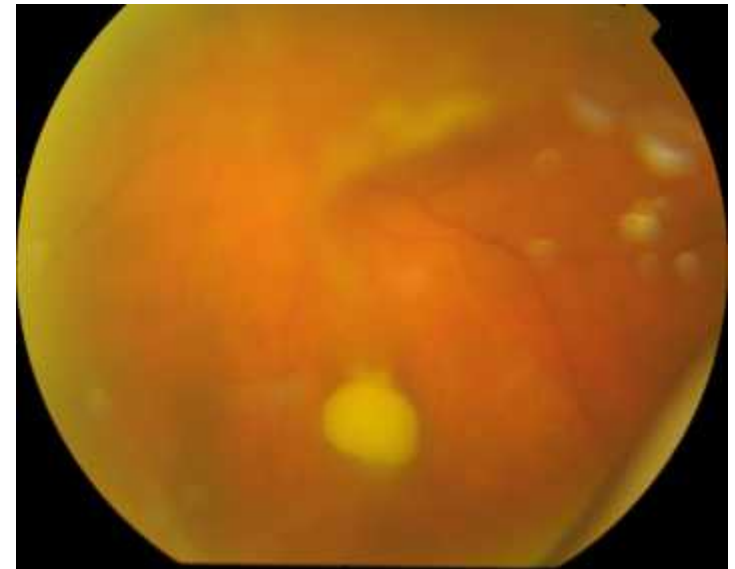
Uveitis after ocular surgery

- **high index suspicion for infection**
- **risk factors**
 - **persistent, relapsing uveitis**
 - **filtration surgery**
 - **complicated cataract surgery**
- **aetiology**
 - **Propionobacterium acnes**
 - **Staph**
- **tap & inject**
- **may need further Rx & r/o IOL**



Uveitis and severe systemic illness

- acute presentation most common
- may be delayed or atypical presentation
- wide variety of microorganisms:
 - strep, staph, klebsiella, pseudomonas, neisseria, listeria
 - candida, aspergillus
 - other exotic organism
- usually a compromised host: major surgery, transplant, ICU, liver, renal, immunosuppressed



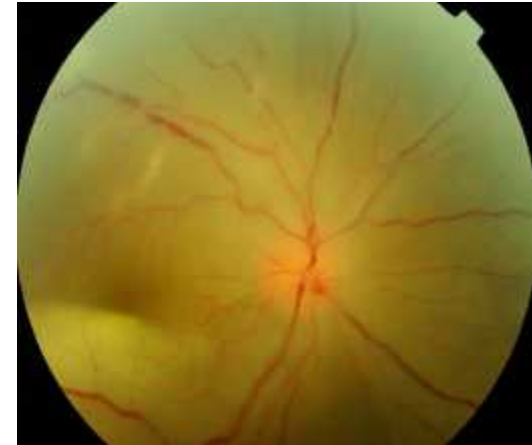
Uveitis & Organ Transplantation

- **an important cause of morbidity**
- **fungal endophthalmitis:**
 - **early “severity related”**
 - **usually systemic fungal infection**
- **viral retinitis:**
 - **later onset “duration related”**
 - **VZV, CMV, HSV - PCR Dx**
 - **otherwise well**



Intraocular Lymphoma Therapy

- intravitreal methotrexate
 - local radiotherapy
 - oral corticosteroids
 - intravitreal rituximab
-
- systemic therapy as part of integrated Rx for CNS lymphoma



intraocular
methotrexate X 3



CNS Lymphoma Therapy

- **high dose methotrexate**
 - + intrathecal and intravitreal methotrexate**
 - **radiation + combination chemotherapy with arabinoside, intrathecal and systemic methotrexate**
 - **systemic rituximab**
 - **whole brain and orbital radiotherapy + corticosteroids**
-

Conclusions

- always consider the possibility of infection or neoplasia in the differential diagnosis
- always get a biopsy and culture before treatment
- in at risk patients must actively exclude neoplasia and/or infection by tissue diagnosis and/or trial of therapy

Major review

Primary intraocular lymphoma[☆]

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