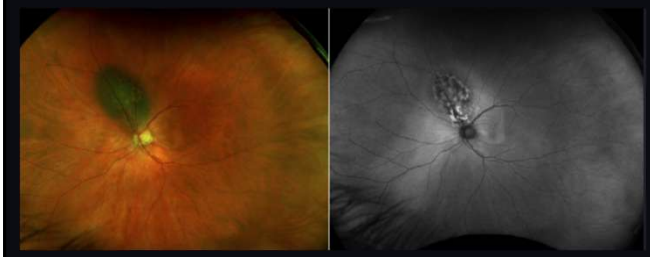
Cancerous Tumors of the Fundus

Sherry Bass, OD, FAAO, Dipl ABO
SUNY College of Optometry
New York, NY

1

Malignant or Benign?



Credit: Review of Optometry May 2024

2

FAILURE TO IDENTIFY UVEAL MALIGNANCIES OR METASTATIC LESIONS TO THE CHOROID CAN BE

LIFE-THREATENING

3

"Darkness over Vision"

1. A 74 y-o white female presents to the Primary Care clinic and reports a symptom of darkening over the vision in the right eye for the past 6-8 months
2. Darkness is not central but surrounds her central vision
3. Medical history
   Hypertension 4-5 years, controlled with Atenolol
   Recent diagnosis of pre-diabetes
4. Family history
   Mother has glaucoma
5. No known Ocular History

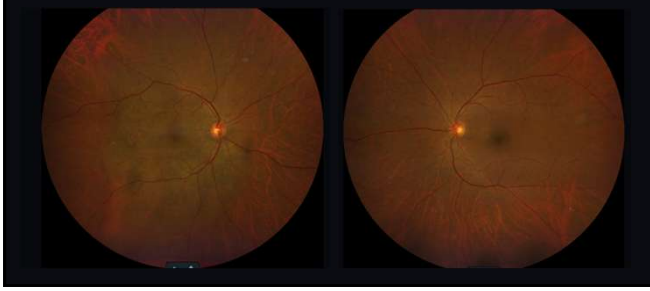
4

Clinical Findings

1. BCVA OD: 20/40 OS: 20/30+1
2. SLE
   +1 nuclear sclerosis OU
   Oily tear film with capped meibomian glands OU
3. IOPs 17mm OD and 18mm OS
4. Fundus exam
   a. Scattered macular drusen OU
   b. "Inferior subretinal hemorrhage OD"

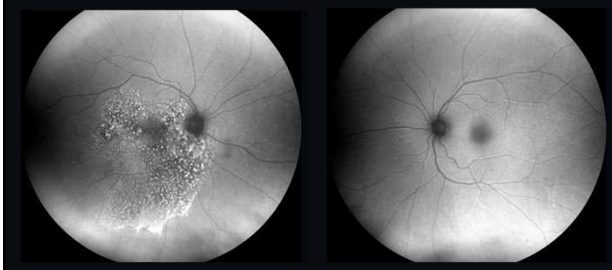
5

December 2023

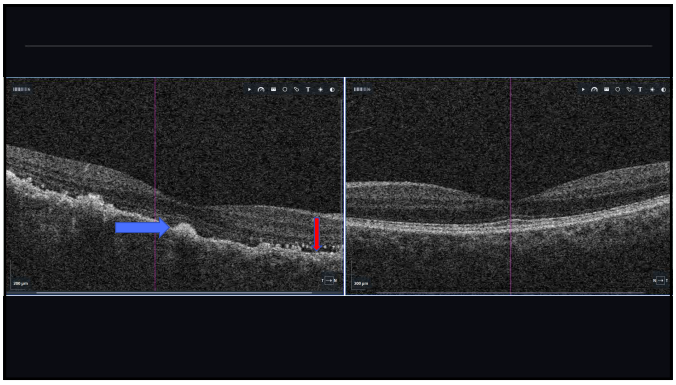


6

FUNDUS AUTOFLUORESCENCE



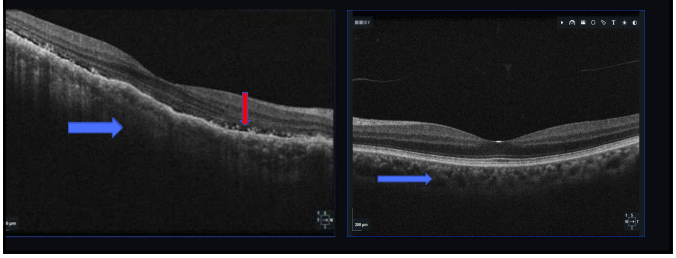
7



8

RADIAL OCT SCANS

OD OS



9

Differentials

1. Polypoidal Choroidal Vasculopathy (PCV)
   "Polyp" type lesions on the OCT
   Small area of fluid with shaggy photoreceptors
2. Central serous choroidopathy
   a. Patient reported high levels of stress
3. Syphilis (placoid appearance)
   Lesion unilateral so not likely
4. Ordered blood work-up
   ESR, CRP, ANA, FTA-ABS, RPR

10

Patient returns two weeks later…..

1 Blood work-up NEGATIVE
2. BCVA OD 20/40 OS 20/30
3. No change in symptoms
4. Patient advised by retinal specialist to get anti VEGF injections

11

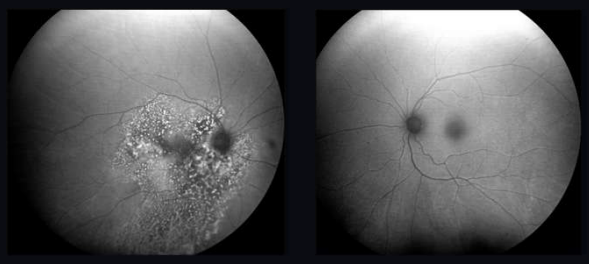
One month later…

Orange Leopard spot appearance



12

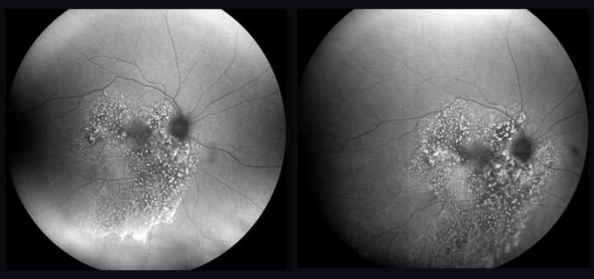
Increase is spotty hyper AF lesions



13

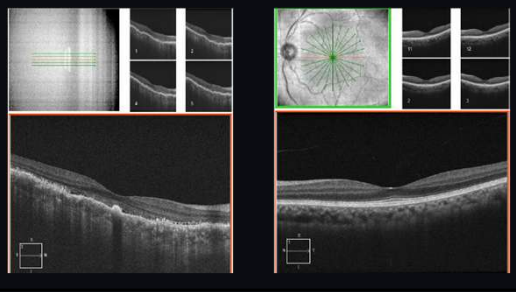
One month earlier

Current visit



14

2024



15

Why is lesion getting larger?

Why are the choroidal vessels not visible?

1. The choroid is infiltrated but by what?

Metastasis?

Lung?

Breast?

2. Last mammography was 1.5 years prior

Negative

3. Patient advised to obtain a more recent mammogram and chest X-ray

16

Metastatic breast cancer

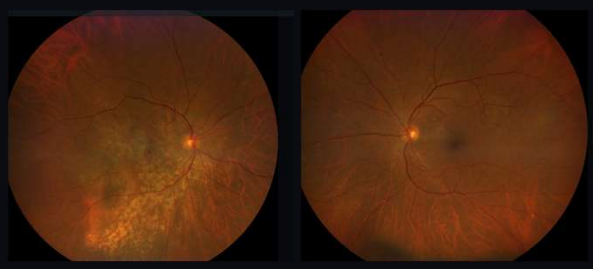
1. Patient diagnosed with breast cancer that metastasized to her
   - Bones
   - Parotid gland
2. Patient treated by **oncologist** with systemic chemotherapy
3. Patient referred to **a retinal oncologist**
   - a, Diagnosed metastatic breast cancer lesion
   - b. Advised continuing with anti-VEGF injections to resolve retinal fluid
   - c. Applied external beam radiation (EBRT) to the lesion

Kongwattananon W, Pothikamjorn T, Somkijrungroj T. Posterior segment manifestations of ocular metastasis. Curr Opin Ophthalmol 2023 Nov 1;34(6):522-528

17

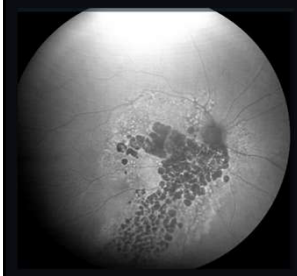
2025

POST –TREATMENT WITH SYSTEMIC CHEMOTHERAPY and ANTI-VEGF INJECTIONS



18

FAF SHOWS DEGENERATED OUTER RETINAL TISSUE FROM THE EXTERNAL BEAM RADIATION

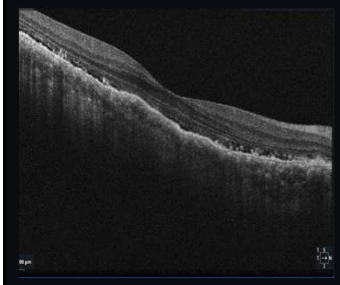




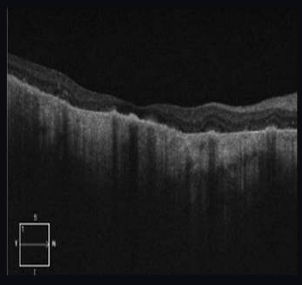
19

RESOLUTION OF FLUID FOLLOWING EBRT AND ANTI-VEGF INJECTIONS

BEFORE CHEMO AND ANTI-VEGF



AFTER EBTR AND ANTI-VEGF



20

TAKE HOME POINTS

Suspect metastasis in atypical unilateral pale yellow-white, orange mildly elevated retinal/choroidal lesions
- Breast
- Lung
- Less so prostate
- Rarely GI tumors

Look for signs of infiltration into the choroid
- Lack of choroidal detail on OCT

Although treatment in this case was the same as for PCV and CSC, the etiology of the lesion must be determined so a patient can be treated for cancer asap.

21

76 y-o female presents for treatment of double vision

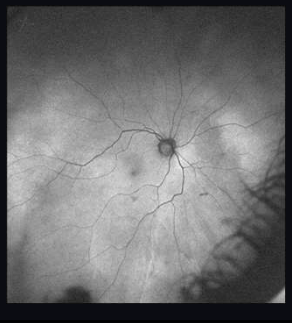
- h/o left hypertropia
- Former smoker
- Exposure to second hand smoke
- h/o metastatic lung cancer, stage 4
- Spread to brain
  - Treated with surgery and gamma knife radiation

22

July

2025

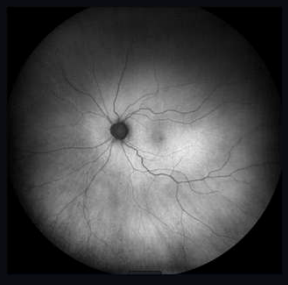




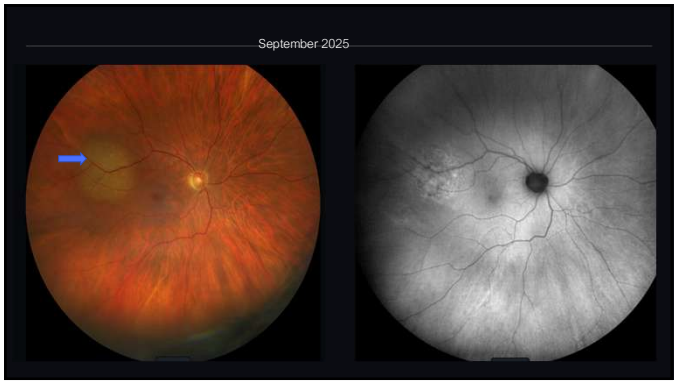
23

Unaffected Left Eye

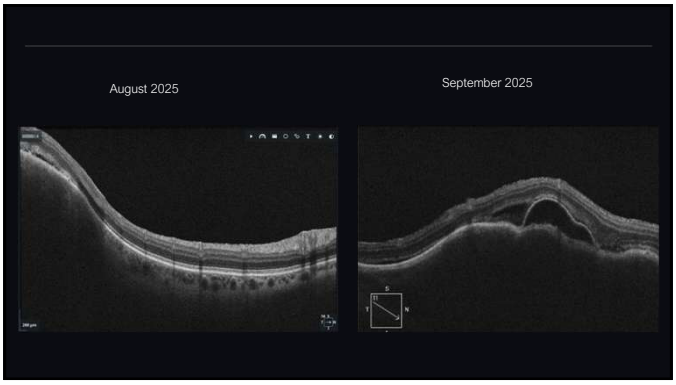




24



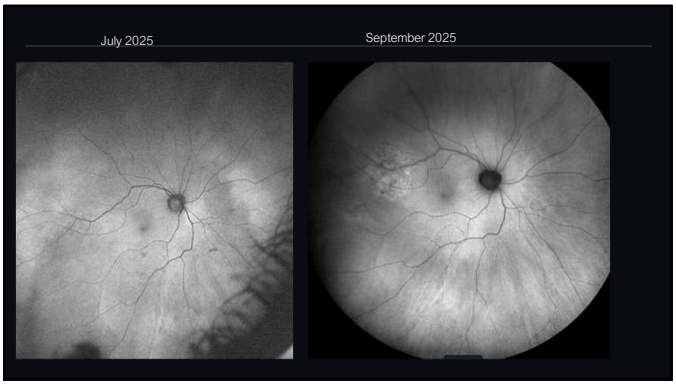
25



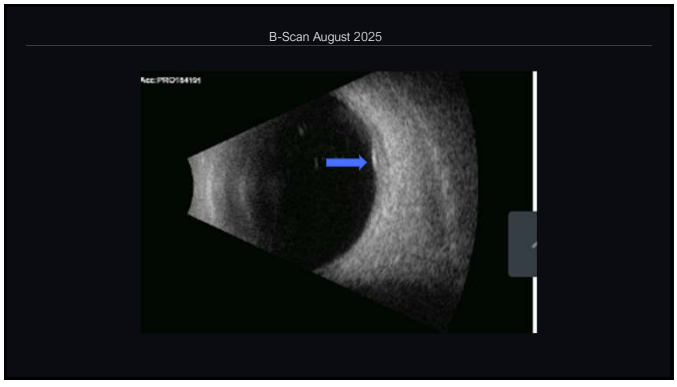
26



27



28



29

Treatment and Management

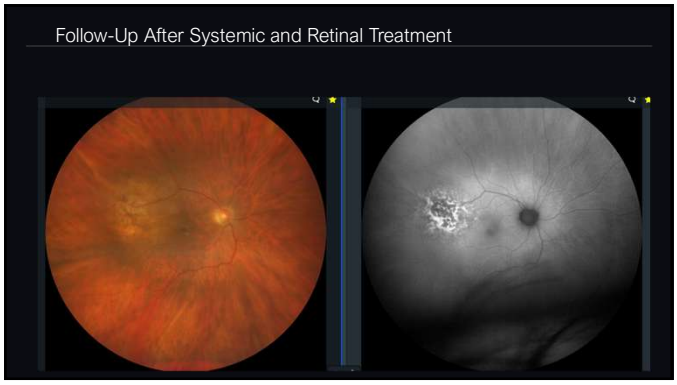
Referred to retinal specialist
- Anti-VEGF injection

Referred to dry eye specialist due to effects of chemotherapy on ocular surface

Referred back to oncologist for chemotherapy and immunotherapy for metastasis

PET scan revealed a new lesion on the lung

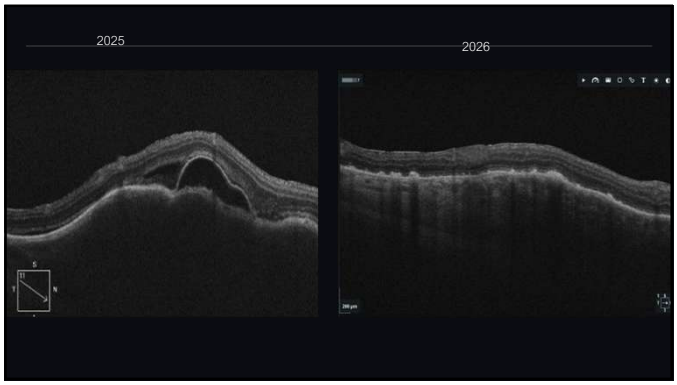
30



31



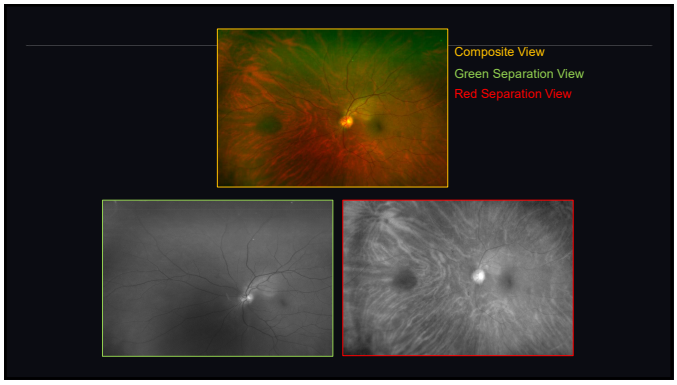
32



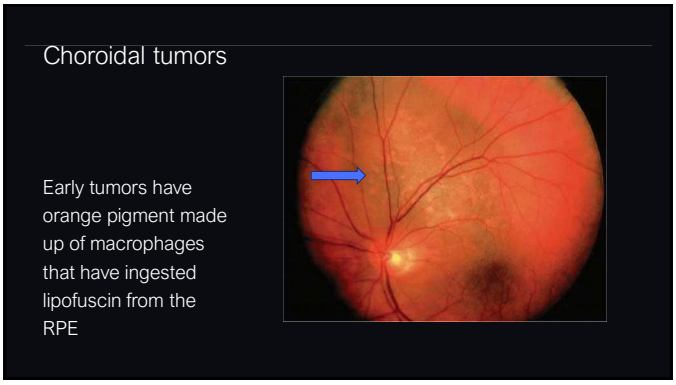
33



34



35



36

Choroidal tumors



1.More advanced tumors grow in size and elevation

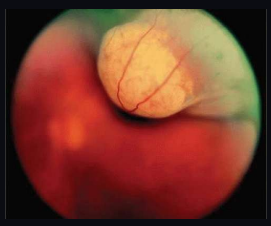
2.Break through into the retina

3.Cause retinal detachment

4.May need ultrasound to detect the tumor

37

Mushroom-shaped tumor has broken through Bruch's membrane and detached the retina



B-scan ultrasound shows mushroom shaped or collar-button presentation of tumor detaching the retina



38



Pigmented melanoma elevating the retina

B-scan ultrasound shows collar-button presentation of tumor detaching the retina



39



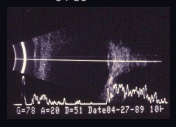
04-86

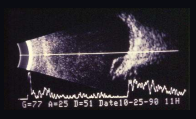


04-89



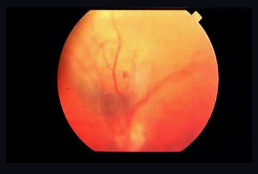
10-90





40

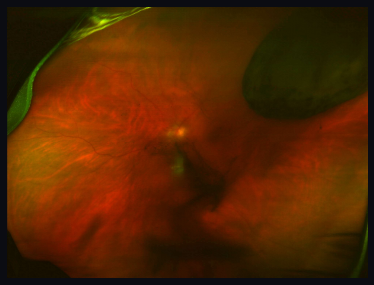
TWO MONTHS LATER



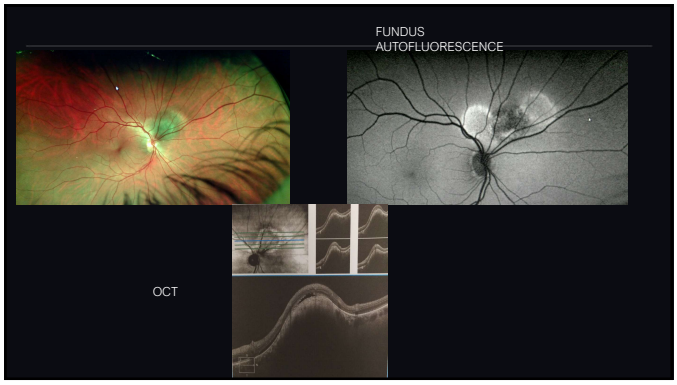


41

Melanoma Associated with Vitreal HEMORRHAGE



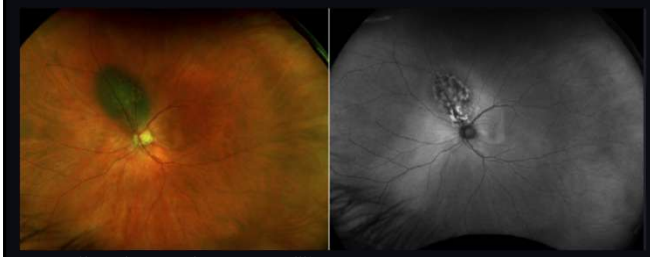
42



43

Getting Back to Our Original Photo

Malignant or Benign?



Review of Optometry Optometric Retinal Society. It's All a Mass. May 2024

44

SIGNS OF TRANSFORMATION TO CHOROIDAL MELANOMA

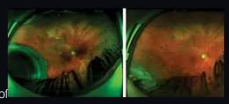
The imaging features most predictive of choroidal nevus transformation to melanoma include

1. Thickness >2 mm,
2. Subretinal fluid,
3. Orange pigmentation/lipofuscin
4. Acoustic hollowness on ultrasound
5. Largest basal diameter >5 mm on photography

45

TREATMENT

1. Plaque radiotherapy for small lesions



2. Enucleation from large lesions

- The larger the lesion when detected, the greater the chance of metastasis to the liver
- Early diagnosis is key.

46

TAKE HOME POINTS

1. Watch suspicious lesions for growth if it is the first time you see the lesion

2. Refer patients when the lesion

   a. Shows increase in thickness
   b. Shows increase in size
   c. Shows fluid on the OCT

3. Refer if you do not know what the lesion is!

47

THANK YOU
sbass@sunyopt.edu

48