



**PROGRESSIVE HEMORRHAGIC
RETINOPATHY- “A DANGER
SIGN” IN A DIABETIC PATIENT**

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PURPOSE

- To investigate rapidly evolving bilateral hemorrhagic retinopathy in a well-controlled diabetic and occurrence of co-existing diseases. Case highlight's the targeted treatment response including surgical intervention.

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- A 50 year old male came with complain of diminision of vision in both eyes for 1 year duration.
 - Systemic illness- DM for 15 yrs on medication well controlled.
 - No history of any intravitreal injection , laser .

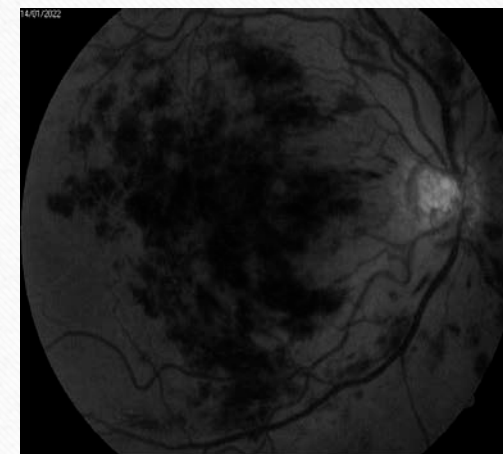
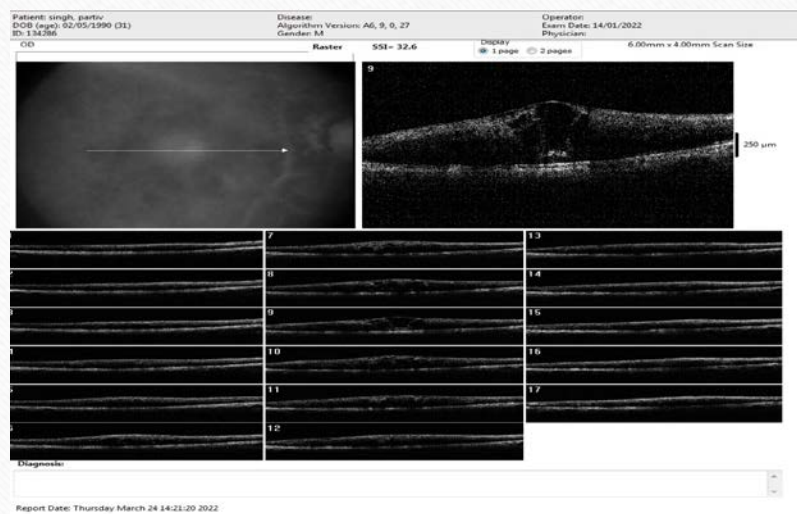
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- On examination- bcva in both eyes was 6/60, N36 with IOP 14mmhg.
 - Anterior segment – wnl with imsc .



POSTERIOR SEGMENT

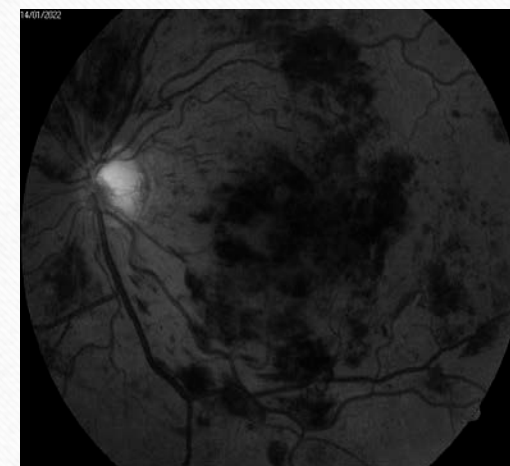
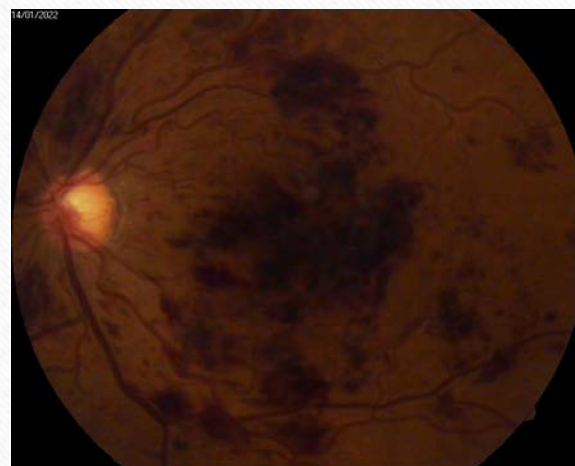
Right Eye

Disc seen, blood lined IPVD, nasal BV sheathing, Dense diffuse multiple layer retinal hemorrhage, with ME, retina attached .(14.01.2022)



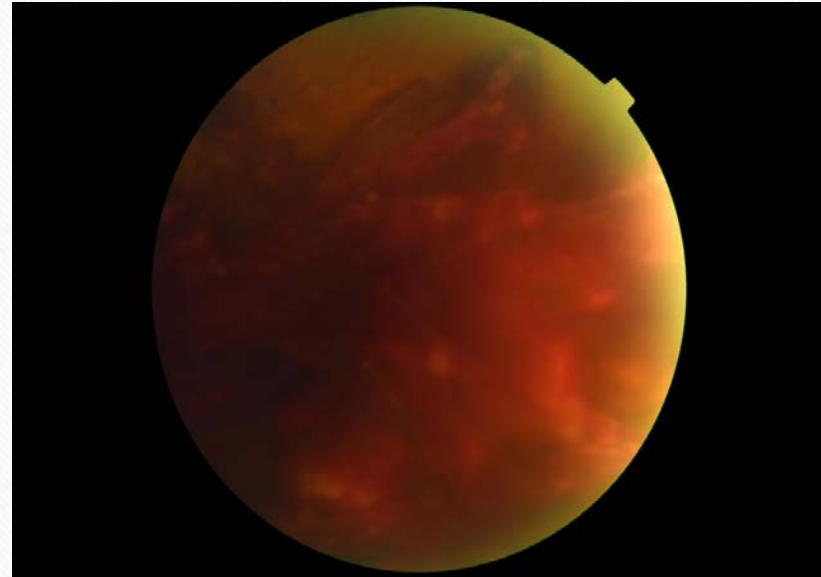
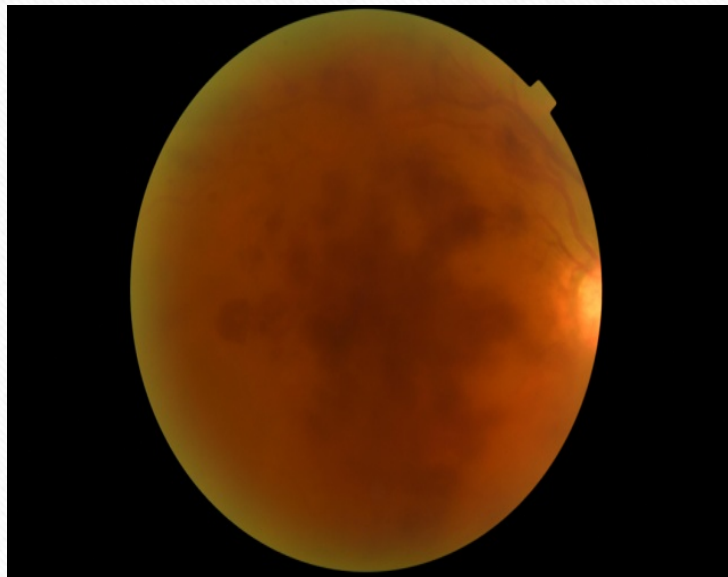
Left eye

- Dense posterior VH, diffuse retinal hemorrhage at multiple level, retina appears attached.(14.01.2022).



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- Was advised for both eyes intravitreal injection anti-VEGF followed by PRP – 3 sittings.
 - Right eye intravitreal injection anti-VEGF was given.
 - Post one week right eye intravitreal injection , patient came for left eye injection **BUT**

One week post right eye anti-VEGF



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- At this time suspected sec CRVO .
 - Had a thought of hypercoagulability .
 - Keeping leukemia and some cardiac issue in mind- advised further investigation to rule out the same.



INVESTIGATIONS

- CBC
- Peripheral Smear
- Lipid Profile.
- Renal Function Test
- Carotid Doppler

INVESTIGATIONS.

- WBC- 4.67
- USG abdomen and pelvis shows-
- Mild hepatomegaly
- Mild to severe splenomegaly 23.5cc, homogenous in texture
- Sub centimetric mesenteric lymph nodes
- Chromosomal abnormality
- Del 13q (RB1)- Positive



Flow Cytometry

- Multicolor flow cytometry using CD19 vs scatter gating
- CD5 positive, CD 23 positive
- Mature B cells.



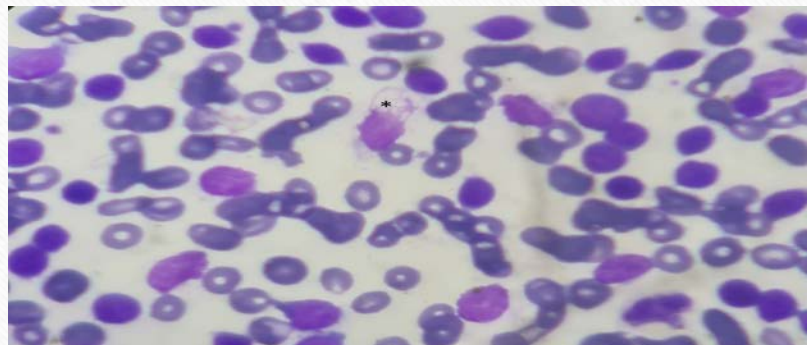
Immunophenotyping

- Markers- Interpretation
- CD 8, 4,3,7,FMC7, CD 79B,CD 10, LAMBDA- negative
- CD 5, 23, 20, 19, KAPPA- positive.

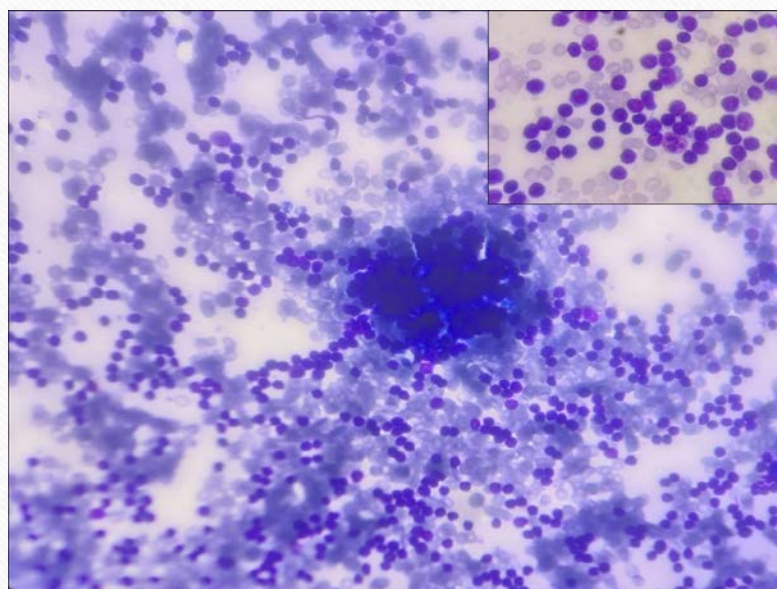


Bone Marrow Examination Report

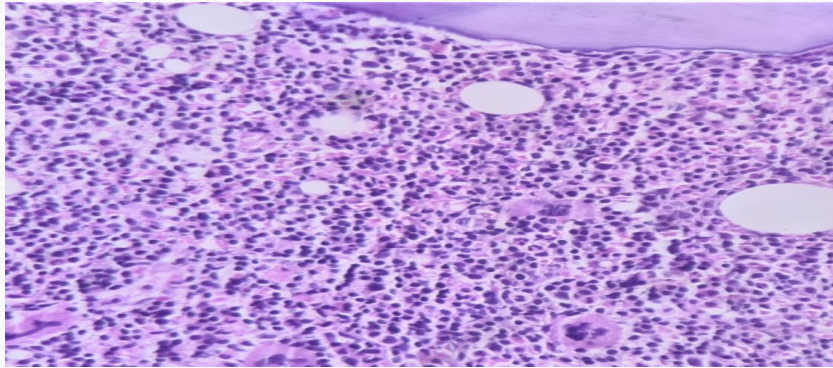
- Microscopic- Cellularity 80 %
- **Small mature lymphoid cells**
- Megakaryocytes seen
- Myeloid and erythroid lineage are suppressed.



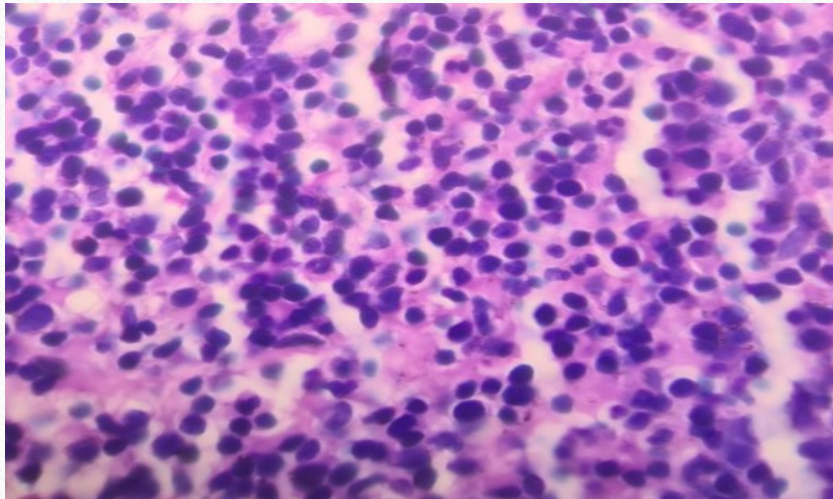
Peripheral blood (PB) film, , showing a uniform population of small mature lymphocytes.



Bone marrow aspirate, showing hypercellular marrow and contains increased numbers of mature lymphocytes which are generally uniform in appearance. Normal haematopoietic cells are reduced. MGG x40 (*Inset*) lymphocytes are small mature with clumped chromatin and scant rim of cytoplasm, MGG \times 100.



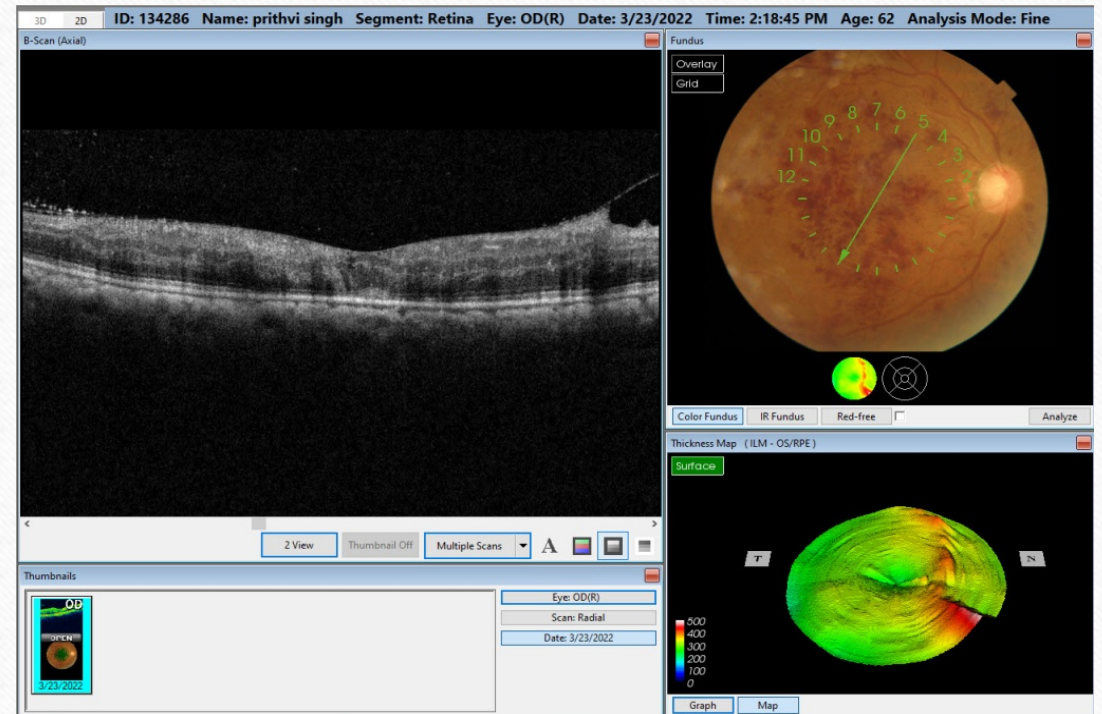
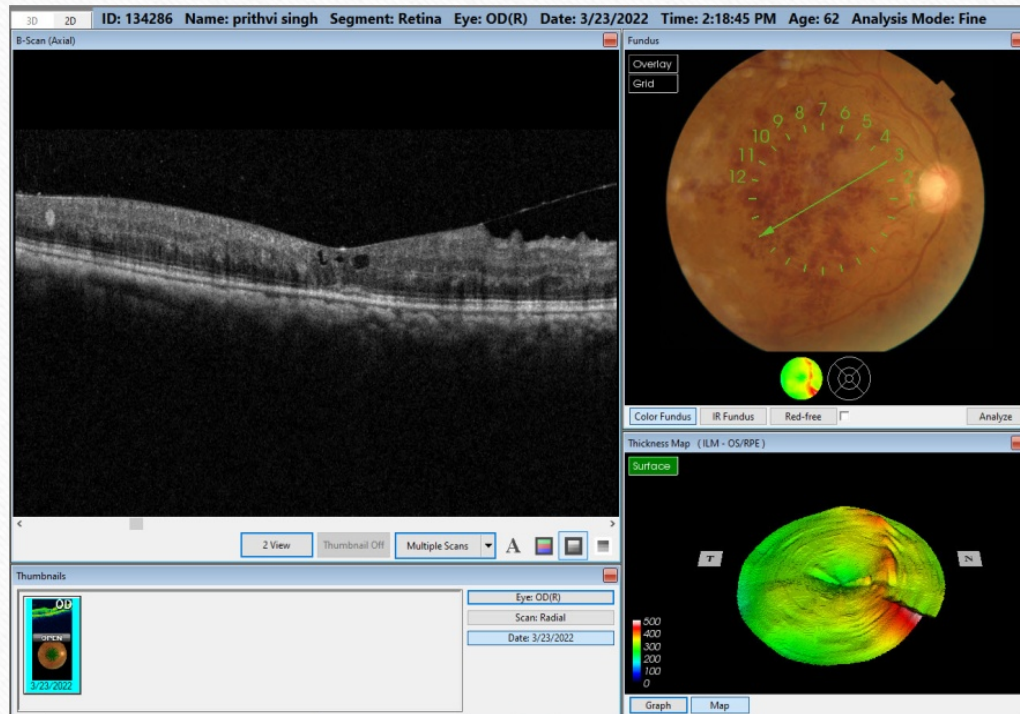
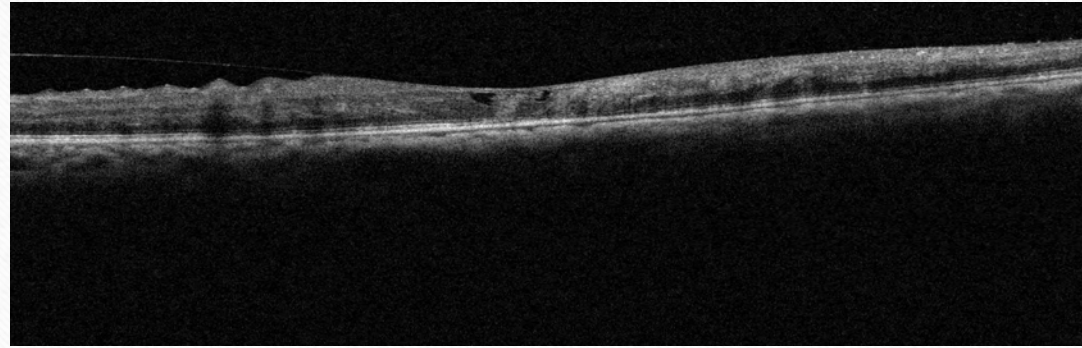
Bone marrow trephine section, showing diffuse infiltration (‘packed marrow’ pattern). Paraffin- embedded, H & E \times 40

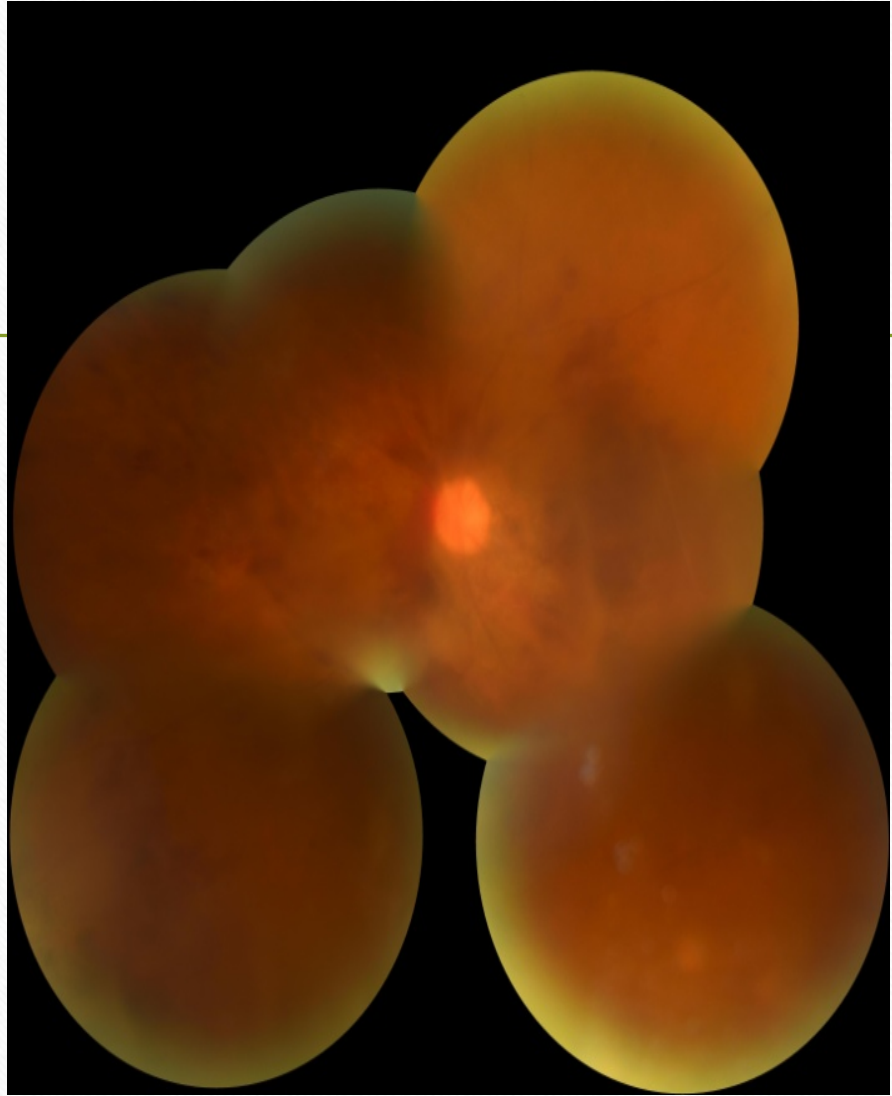
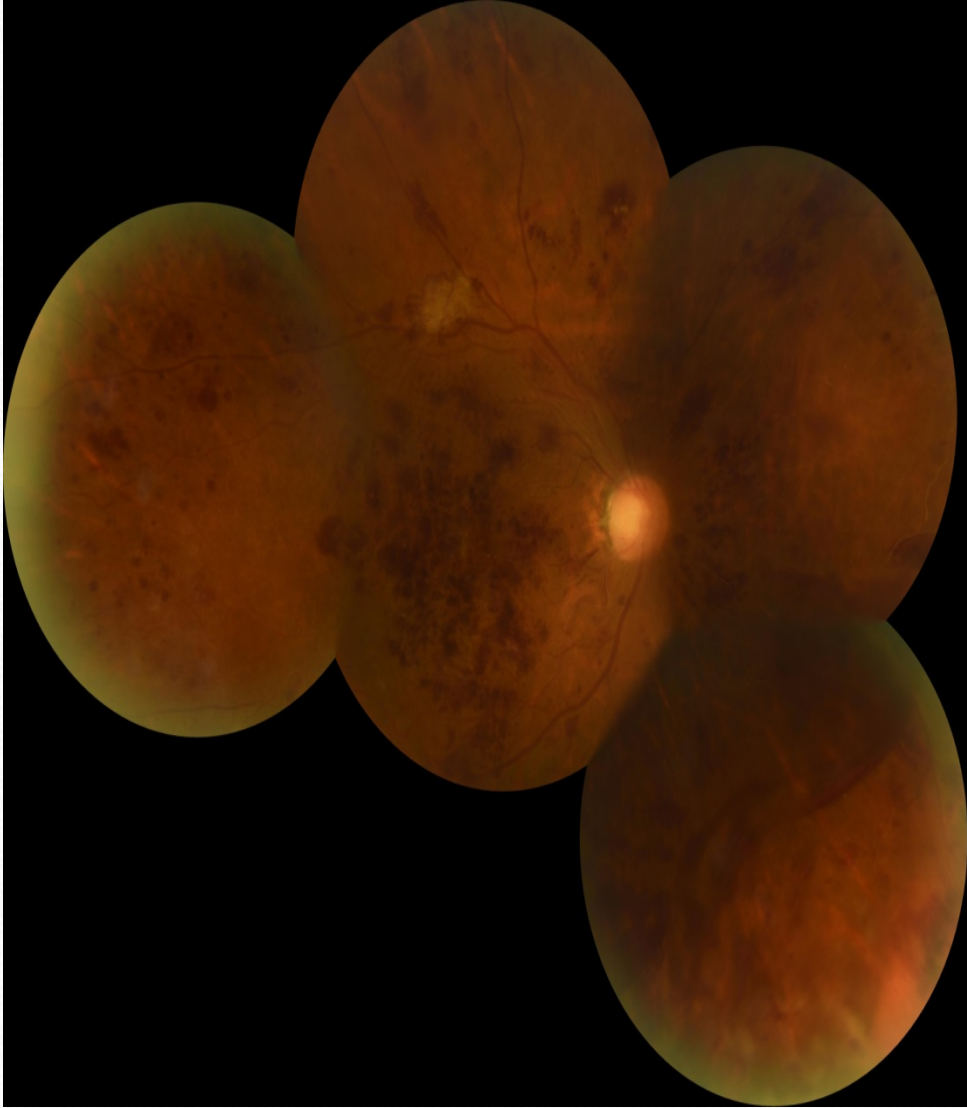


Bone marrow trephine biopsy section, showing pleomorphic small and medium - sized lymphocytes. Paraffin embedded, H & E \times 100.

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- Oncologist started him on tablet Chlorambucil 5 mg.
 - **On day 2** on Chlorambucil repeat blood count shows-(7.03.2022).
 - WBC- **228.91**
 - Hb 7.9
 - RBS 3.13
 - Platlets 235

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- 2 week follow up his vision was 6/24 in right eye whereas 1/60 in left eye .(23.03.2022).
 - On fundus examination right eye –
 - Resolved ME, nasal sclerosed BV, post pole intraretinal haem- dispersed VH, retina attached, left eye status qua.





Dr.



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- On follow up –(1.04.2022).
 - WBC – uncountable (very low).
 - RBC 3.14
 - Hb 7.5
 - Platelets- 1.92
 - Tab chlorambucil stopped- Antibiotics injection meropenem started.
 - **Patient was advised for Chemotherapy- but refused – wanted some time to think.**



On 9.04.2022 after stopping chlorambucil

- WBC- 271.05
- RBC- 2.62
- Hb- 6.1
- Platelets- 121



12.04.2022

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- WBC- **238011**, Lymphocytes 95.60%
 - RBC- 2.79
 - Hb- 6.3
 - Platelets- 1.09

19.04.2022

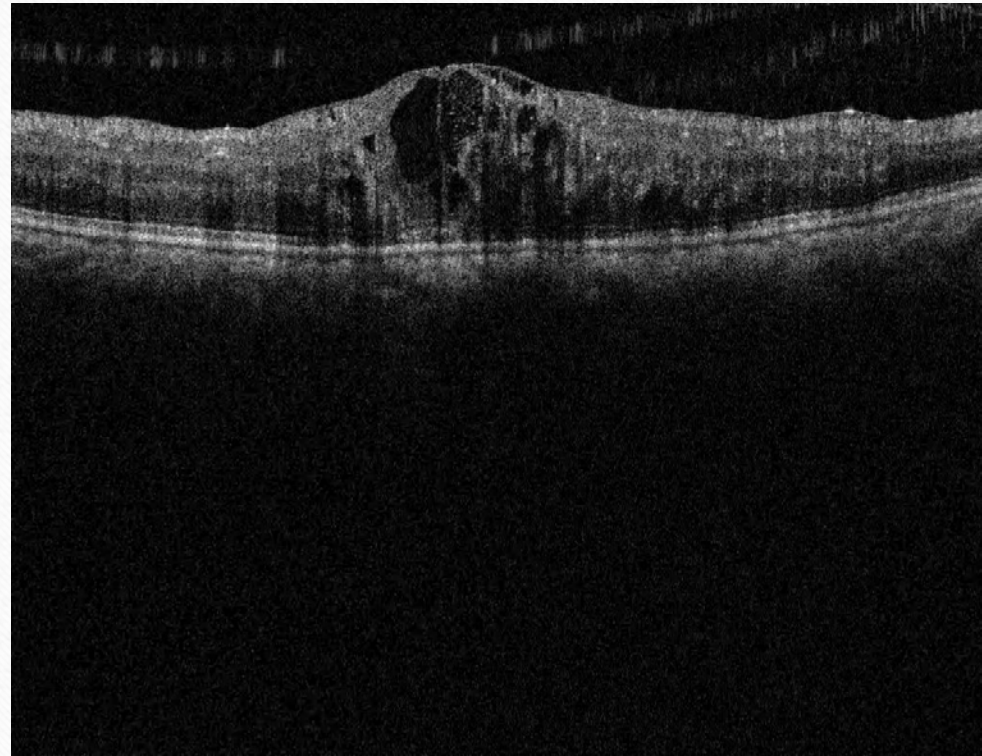
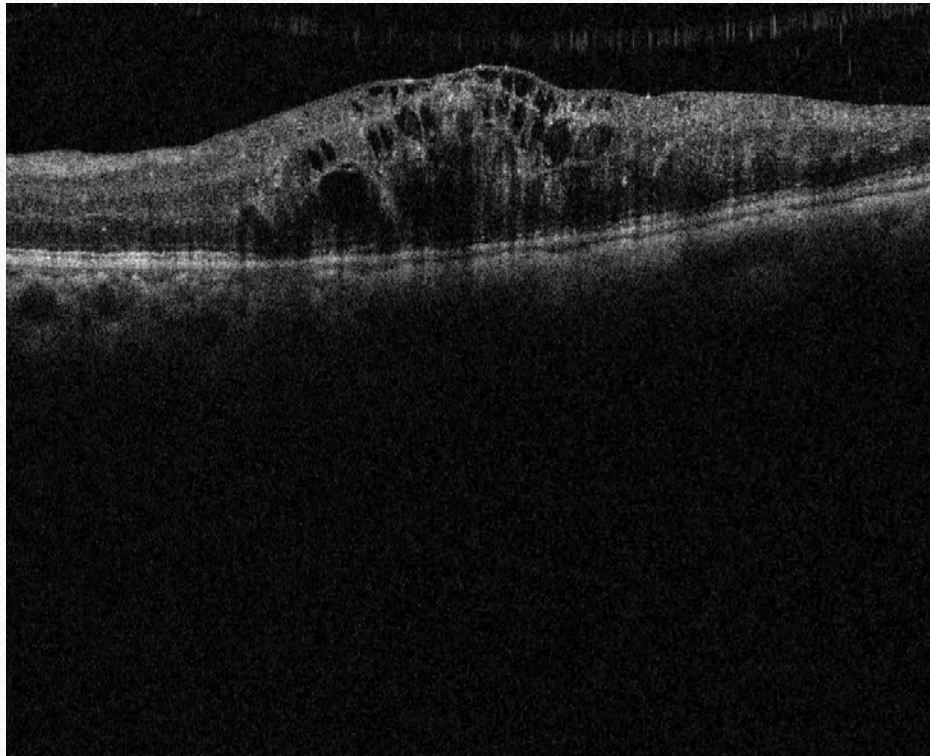
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- Ist cycle of Chemotherapy given- RB Protocol
 - Day 1- Rituximab 100mg, 500 mg and Bendomustine 150 mg
 - Day 2- Bendomustine 150 mg.

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- **Discussed with oncologist – advised to plan ocular procedure once WBC count under 1 lac and 10-14 days after Chemotherapy.**

28.04.2022

- On follow up
- WBC- 18900
- RBC- 2.57
- Hb 7.00
- Platelets- 1.32
- Lymphocytes- 83.90 %

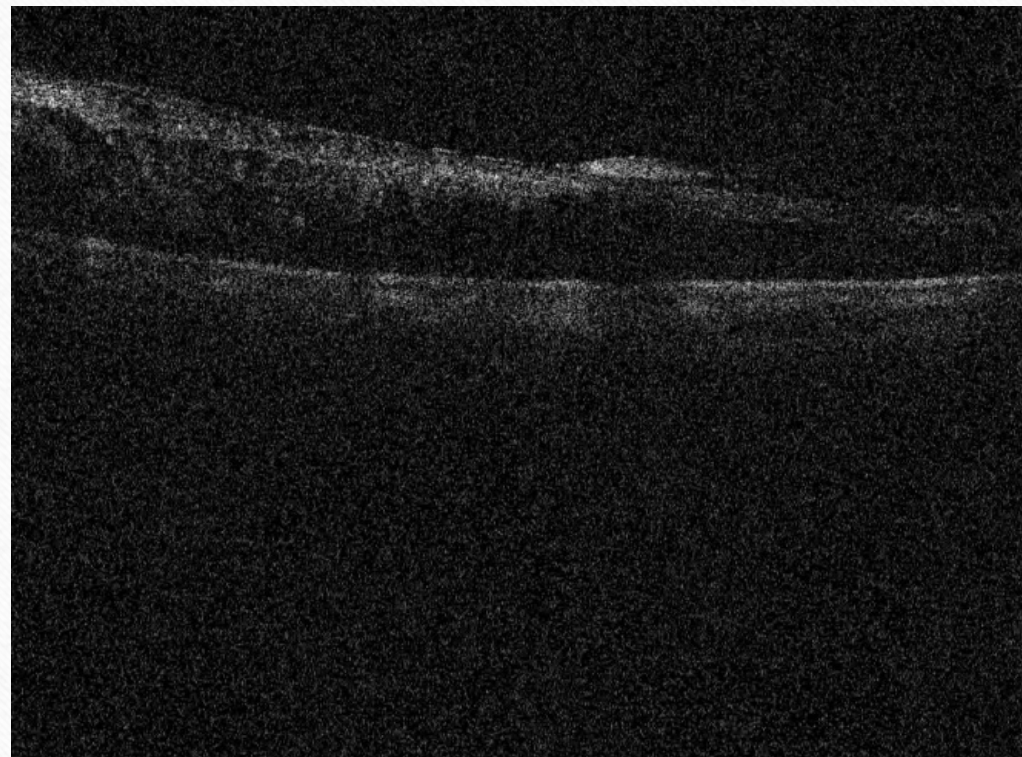
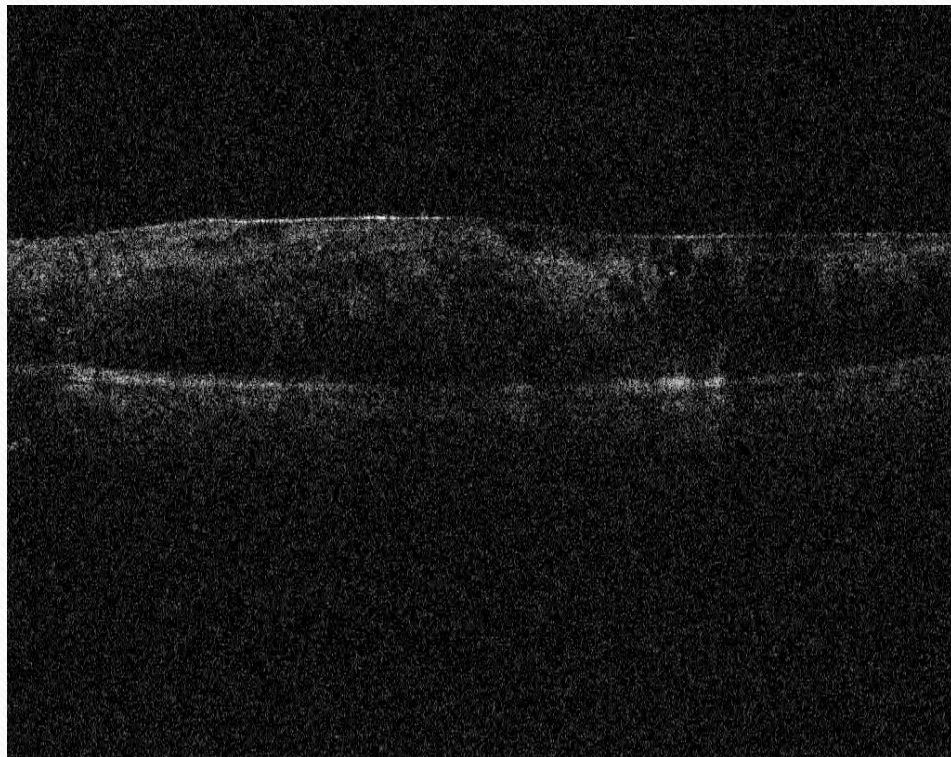
RIGHT EYE RECURRENCE OF CME .





LEFT EYE

VITREOUS HAEMORRHAGE WITH ERM

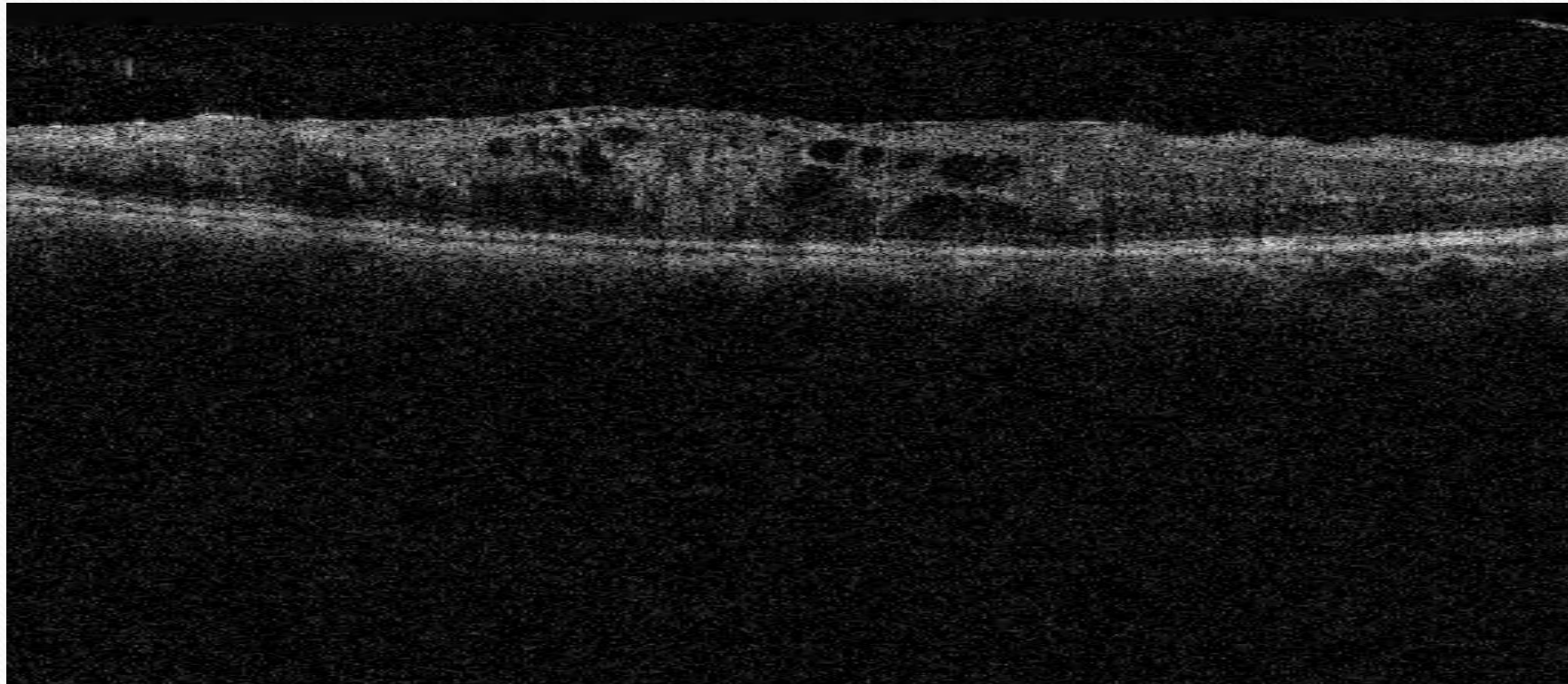




6.05.2022

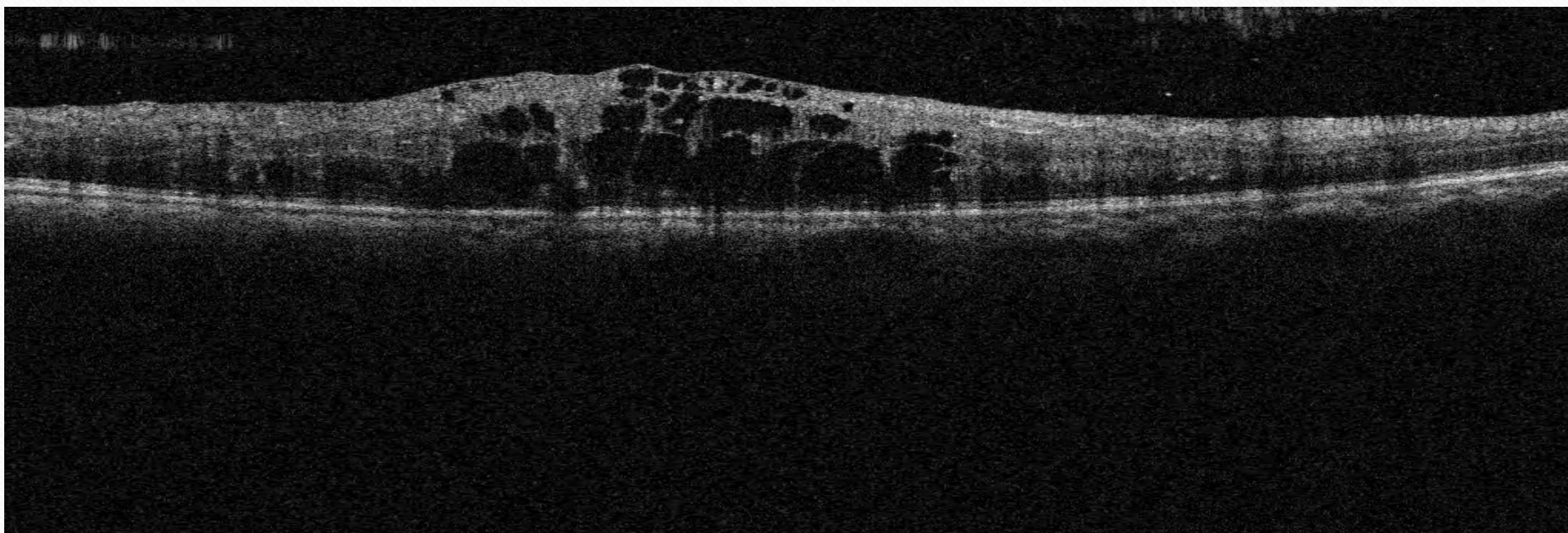
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- Planned for right eye Intravitreal injection anti VEGF and left eye VR surgery.
 - Left eye - PPV+EL+Intravit injection anti VEGF+C3F8 0.6 ml done.
 - 2nd dose of Chemotherapy given, Same regimen.

ON FOLLOW UP



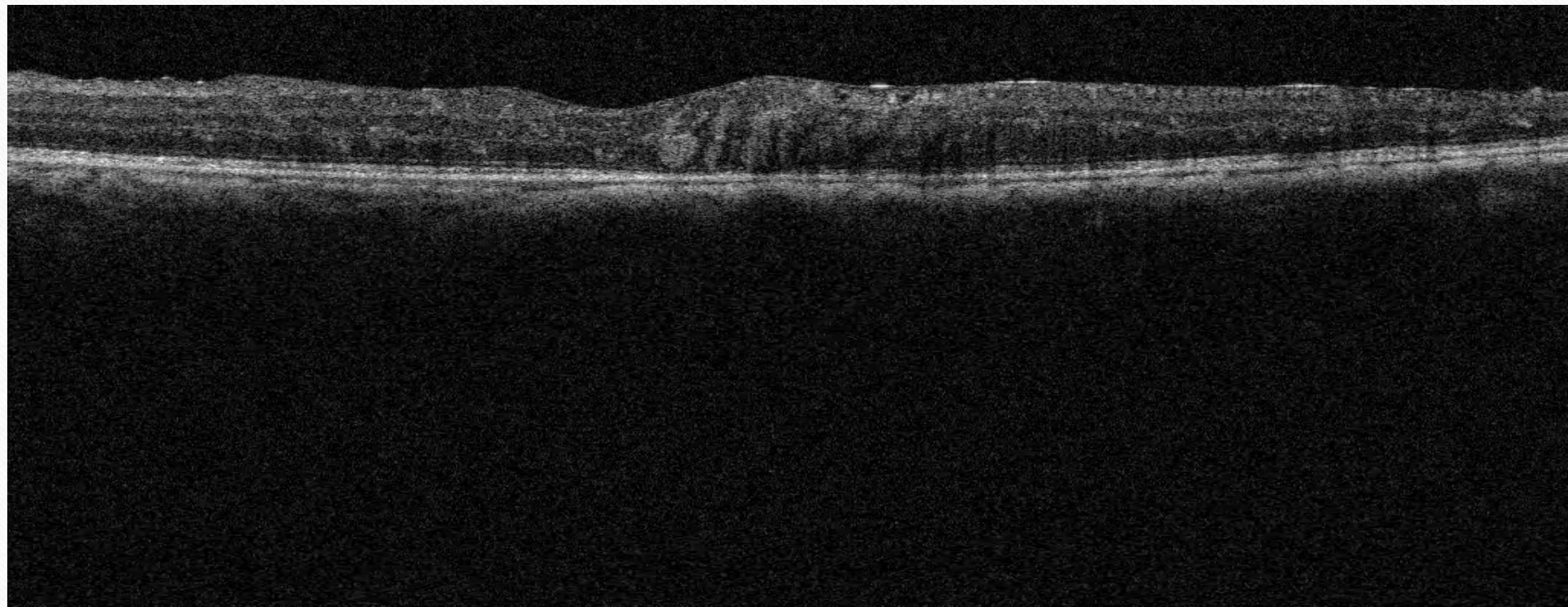
17.06.2022

- Right eye- 3rd dose of intravitreal injection anti VEGF given.



Right Eye OCT

1 week s/p intravitreal injection anti-VEGF





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- 3rd dose of Chemotherapy given on 25th June 2022.

Discussion

- Leukemic Retinopathy is the most common ocular manifestation of leukemia.
- It may be the first indication of manifestation relapse or early worsening of the condition .
- Retinal manifestation are indirect complications of leukemia specially due to hematological abnormalities.

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- Few clues to diagnose leukemic retinopathy clinically –
 - 1. Retinal hemorrhages at all level.
 - 2. Large blotchy hemorrhages.
 - 3. Sub ILM/ sub hyaloid hemorrhages .
 - 4. Peri vascular infiltrates.
 - 5. CRVO due to hyperviscosity.



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- As per discussion with oncologist our case had a unique feature , splenomegaly in a case of CLL.
 - Intravitreal injection have recently been explored as adjunctive treatment.
 - Leukemic retinopathy may have more aggressive systemic disease that might lead to worse prognosis.
 - Leukemic retinopathy as a initial presentation of systemic diseases has more poor survival rate as compare to without ophthalmic involvement.

TAKE HOME MESSAGE

- Rapid progressive retinal microangiopathy should be investigated for undiagnosed systemic disease.
- Thorough baseline blood parameters are to be checked in such cases with unusual presentation and progression of disease.



References

- Leukostasis retinopathy with leukemic infiltrates as onset manifestation of chronic myeloid leukemia: a case report [Giulio Vicini](#)¹, [Cristina Nicolosi](#)¹, [Danilo Malandrino](#)², [Camilla Tozzetti](#)², [Stanislao Rizzo](#)³, [Andrea Sodi](#)¹
- Leukemic retinopathy, the first expression in a case of chronic myelomonocytic leukemia - a case report [Marina Istrate](#),^{***} [Andreea Ciubotaru](#),^{*} [Mihai Hasbei-Popa](#),^{***} [Ana Maria Boariu](#),^{*} and [Daniela Adriana Iliescu](#)^{****}
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Thank You