A Juicy Diagnosis

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Dermatology Clinic:
A 62-year-old man with a rash

HPI

Neck, torso and limbs

9 to 10 months

Raised

Itchy

Associated fatigue and arthralgias

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Past History

Hypertension

COPD with current tobacco use

Metastatic prostate cancer

Metastases:

left pleural effusion + left 7th & 10th rib + pulmonary nodules

Treatment:

ADT + darolutamide + taxane therapy

(3 of 6 cycles)

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Meds

Ibuprofen 200 mg every 6 hours as needed

Acetaminophen 500 mg every 8 hours as needed

Tiotropium 18 mcg daily

Albuterol as needed

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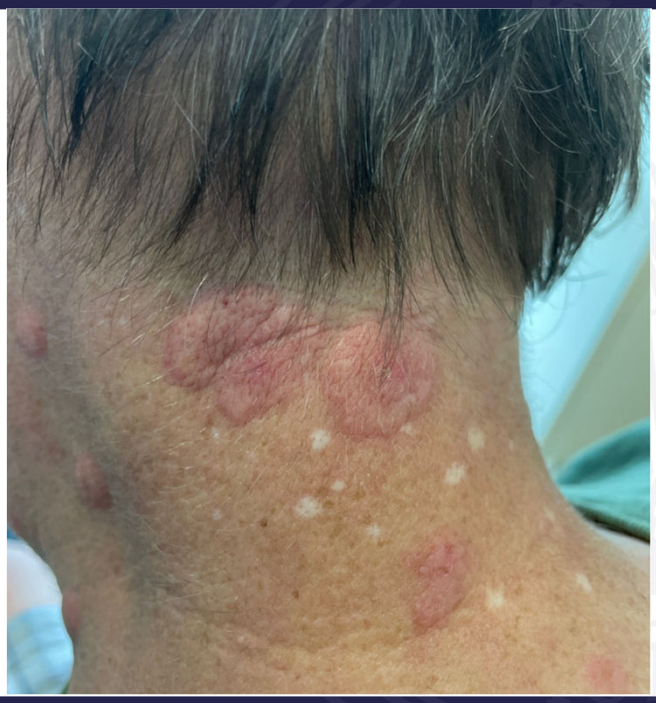

USED WITH PATIENT PERMISSION

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WHAT ADDITIONAL HISTORICAL QUESTIONS FOR THE PATIENT DO YOU HAVE?

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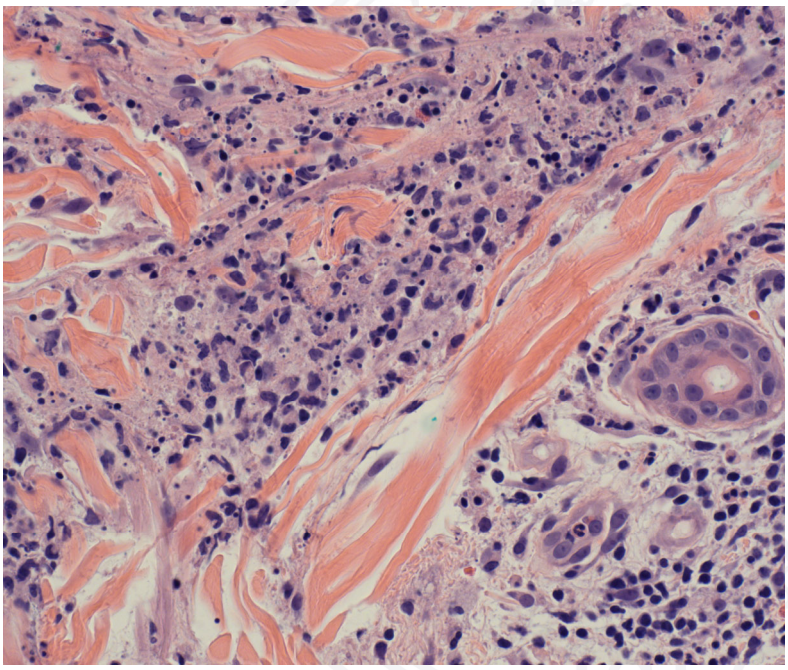

CREDIT ASHLEY CRADDOCK MD

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Dermatology Clinic
Malignancy related Sweet's

Treatment

Prescribed prednisone taper

Lost to follow up

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Ophthalmology Clinic:
He develops a painful red eye (left)

Five months later

2-week history

No visual changes

Associated frontal headache

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WHAT ADDITIONAL HISTORICAL QUESTIONS FOR THE PATIENT DO YOU HAVE?

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Ophthalmology Clinic:
Diagnosis of scleritis OS

Treatment

Prescribed prednisone taper

Referred to UVA rheumatology

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Rheumatology Clinic
"further management of scleritis"

Two Months Later

Inactive scleritis

Active cutaneous disease

Currently on prednisone 10 mg daily

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Exam

Vitals: **BP 132/81** **Pulse 90** **RR 16** **SpO2 99%** **BMI 25.3**

General: Alert, oriented and in no distress. He appears stated age

Eyes: extraocular movements intact without conjunctival injection or findings of active scleritis

HENT: Moist mucus membranes. No oral ulcers. No nasal crusting or saddle nose changes.

Heart: regular rate and rhythm. No murmurs, rubs or gallops. 2+ peripheral pulses

Lungs: clear to auscultation bilaterally without adventitious breath sounds.

Extremities: no peripheral edema

Skin: **multiple edematous, pink-red papules and plaques of neck, chest and upper limbs**

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WHAT DIAGNOSTIC TESTS WOULD YOU LIKE TO PURSUE?

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Sodium	140
Potassium	4.3
Chloride	104
CO2	24
BUN	22
Creatinine	0.8
Glucose	107
Calcium	9.3
AST	22
ALT	17
AlKP	66
TBili	0.7
Total Protein	7.4
Albumin	4.5
ESR	26
CRP	**2.4**
Urinalysis	Bland
Chest x-ray	Normal

Leukocytes	5.39
Hemoglobin	**9.8**
Hematocrit	**29.7**
MCV	**110**
Platelets	**141**
Neutrophils %	**94**
Lymphocytes %	2.6
Monocytes	0
Eosinophils	0
Basophils	0
Immature	1

ANA	Negative
ENA	Negative
RF	Negative
CCP	Negative
PR3	Negative
MPO	Negative
HLA B27	Negative
IgG subclasses	Normal
SPEP	Normal
Quant Gold	Negative
Syphilis	Negative
HBV, HCV, HIV	Negative

Case:

Three months ago

Outside ED Visit
on further review

Right ear swelling and pain

"induration, erythema, tenderness"

Prescribed oral ciprofloxacin

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A DIAGNOSTIC TEST WAS SENT AND CONFIRMED THE DIAGNOSIS

UBA1 MUTATION

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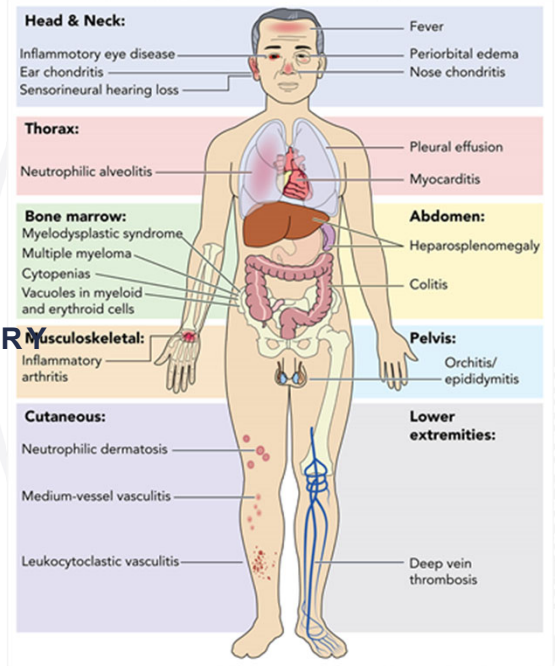
WHAT IS VEXAS?

V: VACUOLES
E: E1 UBIQUITIN
X: X CHROMOSOME
A: AUTOINFLAMMATORY
S: SOMATIC



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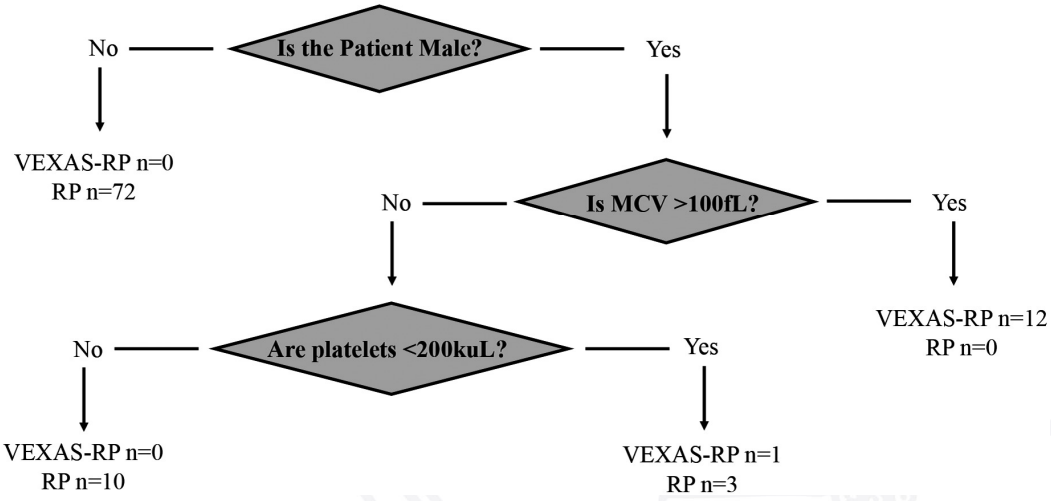
GRAYSON PC, PATEL BA, YOUNG NS. VEXAS SYNDROME. BLOOD. 2021 JUL 1;137(26):3591-3594

In a patient with ear or nose chondritis…



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FERRADA MA. SOMATIC MUTATIONS IN UBA1 DEFINE A DISTINCT SUBSET OF RELAPSING POLYCHONDRITIS PATIENTS WITH VEXAS. ARTHRITIS RHEUMATOL. 2021 OCT.

The eyes cannot see

what the mind does not know

Questions?

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Supplemental

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SKIN BIOPSY

SECTIONS SHOW A PUNCH BIOPSY OF SKIN WITH AN UNREMARKABLE EPIDERMIS. THERE IS MILD DIFFUSE DERMAL EDEMA, BUT NO SIGNIFICANT PAPILLARY DERMAL EDEMA IS SEEN. IN THE SUPERFICIAL AND DEEP DERMIS THERE IS AN INTERSTITIAL AND PERIVASCULAR INFLAMMATORY INFILTRATETHAT IS PREDOMINANTLY NEUTROPHILIC WITH INTERMIXED EOSINOPHILS AND LYMPHOCYTES. A GMS STAIN IS NEGATIVE FOR FUNGAL ORGANISMS.

THE FEATURES ARE THOSE OF AN INTERSTITIAL AND PERIVASCULAR NEUTROPHILIC DERMATITIS. THERE IS NO INVOLVEMENT OF THE ECCRINE COILS TO SUGGEST NEUTROPHILIC ECCRINE HIDRADENITIS, AND THERE IS NO PALISADED GRANULOMATOUS INFLAMMATION TO SUGGEST GRANULOMA ANNULARE.

THE HISTOLOGIC DIFFERENTIAL DIAGNOSIS FOR THESE FINDINGS INCLUDES SWEET SYNDROME, URTICARIA, AND URTICARIAL VASCULITIS. BOWEL ASSOCIATED DERMATOSIS-ARTHRITIS SYNDROME (BADAS) WOULD ALSO BE INCLUDED ON THE DIFFERENTIAL DIAGNOSIS FOR THE MICROSCOPIC FINDINGS, BUT IT IS NOT CLEAR IF THIS DIAGNOSIS FITS THE PATIENT'S CLINICAL PRESENTATION. CLINICAL CORRELATION IS RECOMMENDED

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Bone marrow biopsy

PERIPHERAL BLOOD SMEAR:
MICROSCOPIC EXAMINATION OF THE PERIPHERAL BLOOD SMEAR DEMONSTRATES AN APPROPRIATE LEUKOCYTE COUNT WITH AN ABSOLUTE EOSINOPHILIA, AN ABSOLUTE LYMPHOPENIA, AND A MYELOID LEFT SHIFT AND NORMAL GRANULOCYTE MORPHOLOGY. THE ERYTHROIDS DEMONSTRATE MACROCYTIC, ANEMIA WITH ERYTHROCYTES WHICH ARE MORPHOLOGICALLY ATYPICAL INCLUDING INCREASED ELLIPTOCYTES AND DACROCYTES. PLATELETS ARE DECREASED IN NUMBER AND DEMONSTRATE UNREMARKABLE MORPHOLOGY.

BONE MARROW ASPIRATE:
MICROSCOPIC EXAMINATION OF THE BONE MARROW ASPIRATE DEMONSTRATES A SPICULAR AND CELLULAR SPECIMEN WHICH IS ADEQUATE FOR EVALUATION. THERE IS TRILINEAGE HEMATOPOIESIS. ERYTHROID PRECURSORS SHOW LEFT SHIFT, NUCLEAR IRREGULARITIES AND BINUCLEATION, AND RARE VACUOLIZATION IN GREATER THAN ~10% OF CELLS. MYELOID PRECURSORS ARE LEFT SHIFTED. RARE MYELOID CELLS HAVE VACUOLES. THE MYELOID TO ERYTHROID (M:E) RATIO IS INCREASED AT 5.1:1. MEGAKARYOCYTES ARE PRESENT AND APPEAR NORMAL IN NUMBER WITH OCCASIONAL HYPOLOBATE, HYPERCHROMATIC FORMS (~10%). THERE IS NO INCREASE IN BLASTS. AN IRON STAIN DEMONSTRATES THE PRESENCE OF STORAGE IRON (1+/3) WITH A 50-CELL RED CELL COUNT SHOWING 42% NORMOBLASTS, 50% SIDEROBLASTS, AND 8% RING SIDEROBLASTS.

BONE MARROW CORE:
MICROSCOPIC EXAMINATION OF THE CORE BIOPSY REVEALS A HYPERCELLULAR (95%) BONE MARROW SPECIMEN. THERE IS TRILINEAGE HEMATOPOIESIS. MYELOID AND ERYTHROID PRECURSORS DEMONSTRATE LEFT-SHIFTED MATURATION. THE M:E RATIO APPEARS INCREASED. MEGAKARYOCYTES ARE PRESENT AND APPEAR NORMAL IN NUMBER WITH OCCASIONAL HYPOLOBATE, HYPERCHROMATIC FORMS. THERE IS NO MORPHOLOGIC EVIDENCE OF AN INCREASE IN BLASTS. SCATTERED SMALL LYMPHOID AGGREGATES ARE IDENTIFIED. A PAS STAIN HIGHLIGHTS THE MYELOID HYPERPLASIA AND OCCASIONAL DYSPLASTIC MEGAKARYOCYTES. RETICULIN STAINING DEMONSTRATES A DIFFUSE AND DENSE INCREASE IN RETICULIN WITH EXTENSIVE INTERSECTIONS, WITH FOCAL BUNDLES OF THICK FIBERS MOST CONSISTENT WITH COLLAGEN (MF-2).

BONE MARROW CLOT:
MICROSCOPIC EXAMINATION OF THE CLOT PREPARATION REVEALS A HYPERCELLULAR SPECIMEN THAT IS SIMILAR IN MORPHOLOGY TO THAT OF THE CORE BIOPSY. CD34, CD117, AND CD123 SHOW NO INCREASE IN MYELOID BLASTS. CD117 HIGHLIGHTS AS WELL THE IMMATURE ERYTHROIDS, WHICH ARE SEEN BY E-CADHERIN. GLYCOPHORIN A DEMONSTRATES A RELATIVE ERYTHROID HYPOPLASIA. CD61 HIGHLIGHTS OCCASIONAL SMALL, DYSPLASTIC MEGAKARYOCYTES. SCATTERED SMALL LYMPHOID AGGREGATES ARE IDENTIFIED. CD20 AND CD3 SHOW A MIXTURE OF SMALL B AND T CELLS SCATTERED SINGLY AND IN MINUTE CLUSTERS, WITH AGGREGATES BEING ABSENT ON THE EXAMINED SECTIONS. CD138 AND KAPPA/LAMBDA RNASCOPE ISH SHOW SCATTERED POLYTYPIC PLASMA CELLS. IRON SHOWS STORAGE IRON WITH RARE RING SIDEROBLASTS IDENTIFIED.

SUMMARY:
IN SUMMARY, THE PATIENT'S SPECIMEN DEMONSTRATES AN OVERALL HYPERCELLULAR BONE MARROW WITH TRILINEAGE HEMATOPOIESIS AND MODERATE DYSPLASIA OF BOTH THE ERYTHROID AND MEGAKARYOCYTIC CELL LINES. THE PERIPHERAL BLOOD SHOWS ABSOLUTE EOSINOPHILIA, LYMPHOPENIA, AND MYELOID LEFT SHIFT ALONG WITH MACROCYTIC ANEMIA AND THROMBOCYTOSIS. DYSPLASTIC CHANGES ARE MOST NOTICED IN THE MEGAKARYOCYTIC LINEAGE, WITH SMALL, HYPERCHROMATIC FORMS. ERYTHROIDS SHOW A MARKED LEFT SHIFT WITH RARE VACUOLIZATION, MULTILOBATION, AND NUCLEAR IRREGULARITIES (~10%). MYELOID CELLS SHOW A LEFT SHIFT (<10%). THERE ARE ALSO INCREASED RING SIDEROBLASTS (<10%) HOWEVER THEY ARE NOT INCREASED OVER DIAGNOSTIC THRESHOLD. THESE FINDINGS SUGGEST MYELODYSPLASTIC SYNDROME ASSOCIATED WITH UBA1 MUTATION, HOWEVER, CORRELATION WITH MOLECULAR AND CYTOGENETIC STUDIES IS RECOMMENDED.

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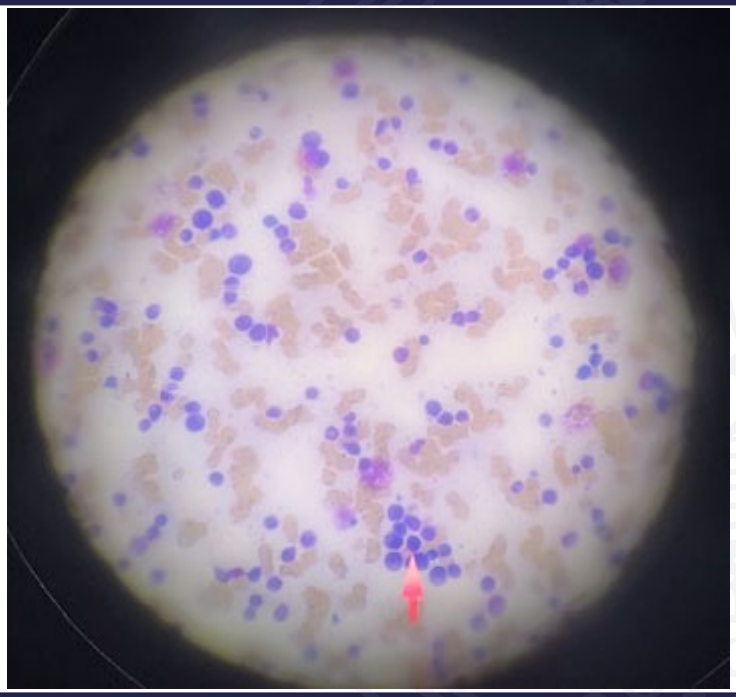

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Eye exam

External: no proptosis or rim tenderness

Lids/lashes: **dermatochalasis**

Conjunctiva/sclera: **Ciliary flush with 1+ chemosis. There is absent blanching of conjunctival and superficial vessels with 2.5% phenylephrine**

Anterior chamber: normal (deep, with no flare or cell)

Iris: regular (no rubeosis)

Lens: **2+ nuclear sclerosis**

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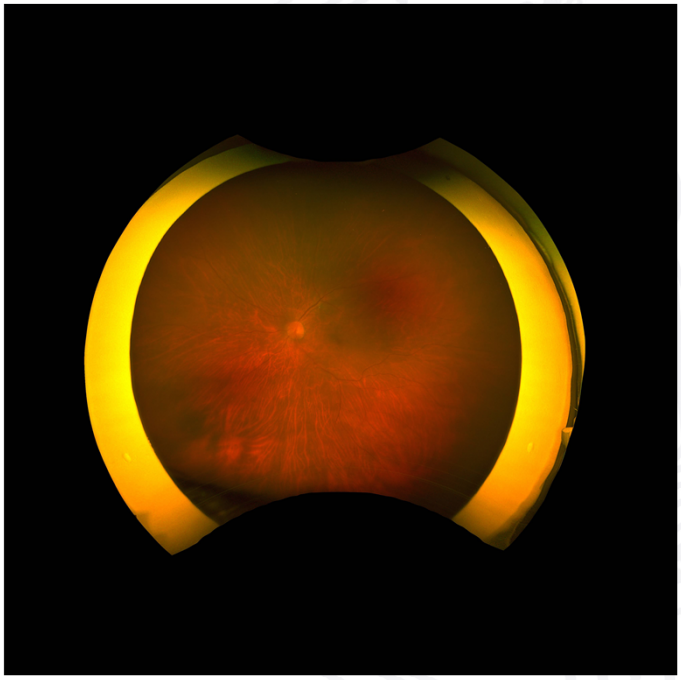

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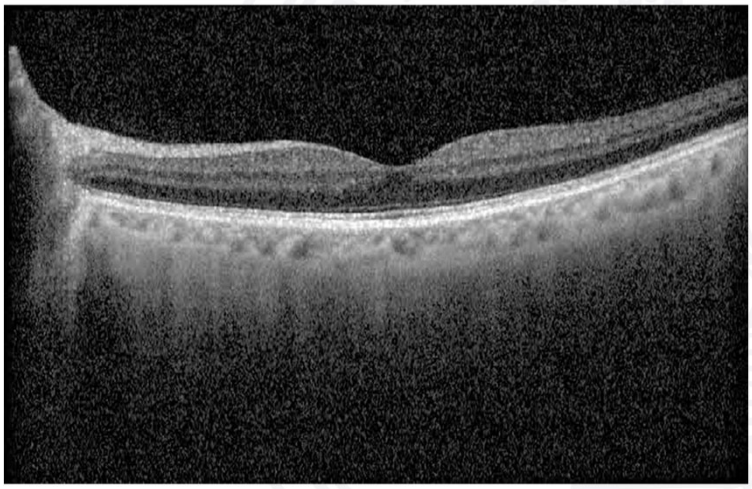

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