Ooops, I Thought it Was..

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1

Objectives for "Ooops I Thought it Was"

- Discuss common mistakes in clinical care leading to delayed diagnosis
- Discuss strategies to avoid medical errors
- Use case-based format to present medical errors & to learn how to avoid them
- Develop best practices to reduce medical errors & malpractice
- We learn from our mistakes and the mistakes of others

2

Case 1: The "Big Black Spot"

- Referred for vein occlusion
- CC: "Black spot" HPI: OS/2 days/constant/decreased vision Cat-IOL/OU ROS: recent diagnosis Hairy cell leukemia, chemotherapy and spleenectomy, now anemic
- 76 F, VA OD = 20/40, VA OS = 20/400, was 20/25 two months prior
- PCIOL OU IOP: 10 OU
- Fundus: peripheral small retinal hemorrhages OU, thick macular hemorrhage OS, schisis cavity inf OS
- OCT: 286u/333u

3

Case 1: The "Big Black Spot"

- IMP: Leukemic Retinopathy
- PLAN: Retina consult
  - TPA & gas to displace macular hemorrhage
  - Continue oncologic care
- Follow-up visit one month
  - RE 20/25
  - LE 20/30
  - No retinopathy noted!

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4

Case 1: The "Leukemic Retina"

- Pearls & Pitfalls
  - OCT demonstrates abnormal thickness OS
  - OCT clearly shows pre-retinal and intra-retinal nature of hemorrhages
    - In BOTH eyes
    - Bilateral BRVO is possible but no probable
  - Prognosis often very good

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5

Case 2: The "Black Dot"

- Referred for retinal detachment
- CC: "Black dot" HPI: OS/1 yr/constant/no worse
- Referring doctor: Retinal detachment, partial, old
- 8 M, VA OD = 20/20, VA OS = CF CVF: central scotoma OS, SLE: NL
- Fundus: massive hemorrhage and exudative retinopathy OS
- OCT: massive elevation of macula

6

Case 2: The "Black Dot"

- IMP: Coat's Disease
- PLAN: Retina consult
  - R/O toxoplasmosis with serology
  - Consideration of retinoblastoma

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7

Case 2: The "Coats Disease"

- Pearls & Pitfalls
  - OCT demonstrates markedly abnormal thickness OS
  - Serologic testing to R/O toxoplasmosis, toxocariasis
  - Always obtain retina consult (poor prognosis)
  - Children with advanced vision loss must be evaluated by specialty care to avoid potential for delay in diagnosis and treatment
    - Amblyopia is diagnosis of exclusion

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8

Case 3: The "Lost My Monovision!"

- Referred for papilledema
- 77yowf CC: "Can't read!"
- HPI: 1 D duration / intermittent loss, altitudinal, preceded episode / painless / OD
- Meds: Amiodarone, ASA, Coumadin, Cartia, Zoloft, Advil, Singulair, Cozaar, Norvasc
- ROS: 190 lbs, recent Spinal surgery (L3-5), planned shoulder (rotator cuff) surgery, Monovision
- BVA: 20/60 OD 20/20 OS PERRL + APD
- EOM: Full EXT: NL
- SLE: ACIOL OD, PCIOL OS Blurred optic disc margin OD, otherwise NL

9

What is the likely diagnosis?

- 1. Idiopathic optic neuritis
- 2. Ischemic optic neuropathy
- 3. Buried drusen
- 4. Papilledema
- 5. Cerebral vascular accident

10

What eye test would you order now?

- 1. Pachymetry
- 2. Visual fields
- 3. SCODI
- 4. ERG
- 5. IVFA / Photo

11

What other testing is indicated?

- 1. CBC with differential
- 2. Brain MRI
- 3. C-reactive protein
- 4. ESR
- 5. ESR & CRP & platelets

12

Tests results

- 1. Visual field = Mild central defect OD, normal OS
- 2. ESR = 17mm/Hr
  - Reference 0-20mm/Hr
- 3. C-reactive protein = 0.899mg/L
  - Reference 0.000-3.0mg/L

13

What should you do now?

- 1. Start Prednisone
- 2. Order biopsy of superficial temporal artery
- 3. Retina consult
- 4. Follow conservatively for NAION

14

Case 3: "NAION"

- Clinical pearls & Pitfalls
  - Papilledema is bilateral by definition
    - Differential diagnosis list for unilateral disc edema should be considered
  - R/O GCA most important – don't delay
    - Do not wait to get visit with PCP or neurologist or neurophthalmologists
    - Order labs or call PCP to discuss urgency of examination and laboratory
  - NAION is diagnosis of exclusion
    - Follow conservatively
    - ASA debatable benefit

15

Case 4: "I Lost Vision Last Night!"

- Referred for total retinal detachment
- 35yowm CC: "Lost vision last night" referred for total RD
- Pupils: PERRLA+MG
- Meds: Glucophage for 3 years
- VA 20/20 OD, HM OS
- IOP: 17/18
- SLE: Nl OU Fundus : As shown

16

What is the diagnosis?

- 1. Macular twig venous occlusion
- 2. Birdshot retinochoroidopathy
- 3. Hypercholesterolemia (retinal lipidemia)
- 4. CRAO
- 5. Total retinal detachment

17

What is the best test to order?

- 1. IVFA
- 2. Carotid artery ultrasound
- 3. Total cholesterol, LDL, HDL, TG
- 4. Blood pressure
- 5. ANA / ESR & CRP other rheumatologic inflammatory tests
- 6. Cardiac consult/echo

18

Case 4: CRAO

- Clinical pearls
  - 1. Breathe into a bag, massage globe
  - 2. Anterior chamber paracentesis
  - 3. Topical anti-glaucoma agents
  - 4. Thrombolytic therapy
  - 5. Must have a systemic cause
    - Find it & fix it!
    - Needs labs and PE
    - Referral to retina and/or infectious disease etc

19

Case 5: "Corneal Abrasion"

- Referred for floaters, treated recently for corneal abrasion and doctor is out of town
- Age: 19yowm CC: Floaters
- HPI: OD / 3wks / constant / worsening since corneal abrasion with patching therapy
- Meds: none
- BVA: 20/20 OU Pupils: PERRL EOM:NL EXT: NL
- SLE: small corneal defect / haze at limbus
- IOP: 18/16
- Fundi: As shown
- PFSH & ROS: NL

20

What is the likely diagnosis?

- 1. Old CA with residual edema
- 2. Intraocular foreign body
- 3. Toxocara canis
- 4. Vitreous condensation

21

What tests would you order?

- 1. Ultrasound
- 2. Orbital CT
- 3. VF

22

Case 5 : IOFB

- Differential Diagnosis – Old CA, retinal IOFB, primary retinal pathology
- Additional Testing – US, Photography, VF
- Diagnosis - IOFB
- Treatment Plan – Topical antibiotics, pars plana vitrectomy, FB removal, intravitreal antibiotics

23

Case 5 : IOFB

- Pearls & Pitfalls
  - Corneal abrasions have a known cause
  - Take a history
  - If no recent antecedent history of ocular trauma consider RCE if past history of abrasion
  - Look for EBMD to account for epi defects
  - A dilated fundus exam in any floater history is required
  - Careful biomicroscopic exam reveals channel of FB penetration
  - This could have resulted in endophthalmitis and sight loss

24

Case 6: "Woke Up Blind!"

- Referred for diabetic retinopathy
- Age: 19yobf CC: decrease VA
- HPI: OU / rapid / severe / worsening / no DM no HTN
- Meds: plaquenil 400mg, lopressor
- BVA: CF OU Pupils: PERRL-APD EOM:NL
  EXT: NL
- SLE: NL
- IOP:16/16
- Fundi: as shown
- PFSH & ROS: SLE x 3yrs, ischemic necrosis of hip secondary to corticosteroids at initial flare

25

What is the likely diagnosis?

- 1. Diabetic retinopathy
- 2. Hypertensive retinopathy
- 3. Retinal vaculitis
- 4. Bilateral CRVO

26

What tests would you order?

- 1. BP
- 2. ESR
- 3. ANA
- 4. VF
- 5. Photo

27

Case 6: Lupus Retinal Vasculitis

- Differential Diagnosis – SLE with retinal vasculitits, HTN and retinopathy, DM and retinopathy, hyperviscosity states
- Additional Testing – IVFA, photos, ESR, ANA, C-reactive protein, VF
- Diagnosis – SLE and retinal vasculitis
- Treatment Plan – IV corticosteroids, rheumatology consult, retina consult
- Pearl – ANA is elevated in acute Lupus

28

Case 6: Lupus Retinal Vasculitis

- Pearls & Pitfalls
  - Diabetic retinopathy in a patient without knowledge of being diabetic is possible but not likely
  - Malignant HTN is possible but easily ruled out
  - Use a careful review of systems to narrow the differential diagnosis list to more likely senarios
  - Always consider diagnostic conditions common to the age of the patient
  - Consider adding a glucometer to the office to measure BG in real time

29

Case 7: "LASIK Nevus"

- Referred for choroidal nevus
- 34yowf CC: "Freckle in my eye"
- HPI: OD / 2 wks duration / Lasik OU 1 wk
- LASIK doctors request retinal evaluation
- Meds: Allopurinol NKDA
- BVA: 20/15 OU PERRL No APD
- EOM: Full EXT: W&Q
- SLE: Flaps OU IOP: soft OU
- Fundus: as pictured

30

What is the likely diagnosis?

- 1. Epiretinal membrane
- 2. Congenital hypertrophy of RPE
- 3. Macular drusen
- 4. Choroidal osteoma
- 5. Benign choroidal nevus
- 6. Malignant melanoma

31

What eye test would you order now?

- 1. IVFA
- 2. Visual fields
- 3. SCODI
- 4. B scan ultrasound

32

What is the best course now?

- 1. Retina consult
- 2. Ocular Oncology
- 3. PCP
- 4. LASIK retreatment
- 5. Retire; I can't take another day of this

33

Case 7: "LASIK Nevus"

- Pearls & Pitfalls
  - Always dilate every new patient
  - Inspection of the posterior pole only leaves risk of legal entrapment if diagnosis missed
  - Performing a surgery like LASIK on an eye with an intraocular tumor could seed the tumor cells to a distant site and increase morbidity & mortality
  - A referral to another specialist BEFORE LASIK would have been a more prudent strategy
  - Don't miss tumors

34

Case 8: "Upper part missing"

- Referred for ION
- 65yowm CC: "wavy things"
- HPI: OD / 5 wks wavy / 2 wks upper part of vision missing / no pain / no flashes
- Meds: MV, OM3, ASA NKDA
- BVA: HM OD, 20/25 OS PERRL No APD
- EOM: Full EXT: W&Q
- SLE: NS 2 OU IOP: 15 OU
- Fundus: as pictured

35

What is the likely diagnosis?

- 1. Retinal tear/detachment
- 2. Lattice degeneration
- 3. Vitreous hemorrhage
- 5. Benign choroidal nevus
- 6. Malignant melanoma

36

What is the best course now?

- 1. Retina consult, surgery
- 2. Ocular Oncology
- 3. PCP

37

Case 8: "Upper part missing"

- AION is associated with field loss, dyschromatopsia afferent pupil defect, poor color vision
- A dilated fundus examination is required on all new patients especially those with presumed pathlogy
- A pale disc does not alone make a diagnosis of optic neuropathy
- A careful SLE of the anterior vitreous can reveal cells from retinal tears
- A field exam could differentiate the defects of RD vs ION

38

Case 9: "Fell & Hit head"

- Referred for Retinal detachment
- 89yowm CC: "retina problem"
- HPI: OS / 1 wk / no pain / no flashes / no vision loss
- Meds: levothyroxine, OM3, garlic NKDA
- BVA: 20/50, 20/60 OS PERRL No APD
- EOM: Full EXT: W&Q
- SLE: PCIOL OU IOP: 15 OU
- Fundus: as pictured

39

What is the likely diagnosis?

- 1. Retinal detachment
- 2. Choroidal detachment
- 3. Vitreous hemorrhage
- 5. Macular degeneration
- 6. Malignant melanoma

40

What is the best course now?

- 1. Retina detachment surgery
- 2. Ocular Oncology
- 3. IVFA and anti- VEGF
- 4. No Rx; observation

41

Case 9: "Fell & Hit head"

- Pearls & Pitfalls
  - RD causes flashes and floaters
  - RD causes field defects
  - RD cause progressive worsening of symptoms
  - RD and choroidal detachment look similar at a glance but different on closer inspection
  - Choroidal detachments are more common with head trauma and falls and history of recent ocular surgery
  - Prognosis is very different between the two conditions
  - When in doubt get another opinion

42

Case 10: "Exotropia"

- Referred by pediatrician for strabismus
- Age: 2yowm CC: R/O strabismus
- HPI: XT OD / 4mos / constant / severe
- Meds: none Ref: Peds
- BVA: No Fix or follow Pupils: PERRL-APD
  EOM: L XT 45 EXT: NL
- SLE: NL
- IOP: Soft
- Fundi: ON abnormal OS
- PFSH & ROS: NL

43

What is the likely diagnosis?

- 1. Coloboma optic nerve entrance
- 2. Morning glory syndrome
- 3. Retinal detachment
- 4. Cavernous hemangioma

44

What tests would you order?

- 1. PE
- 2. MRA brain and orbits
- 3. EUA
- 4. IVFA

45

You Make The Call

- Differential Diagnosis – morning glory, retinal hemangioma, ON coloboma
- Additional Testing – PE family members, eye examination family members
- Diagnosis – cavernous hemangioma retina, strabismus, amblyopia
- Treatment Plan – external plaque radiation, EOM surgery, patching treatment

46

Case 10: "Exotropia"

- Pearls & Pitfalls
  - Dilated examination is required in children with subnormal vision
  - Rule out intraocular tumors
  - Amblyopia is diagnosis of exclusion
  - Experience with fundus examination in many normals helps quickly identify pathology
  - Exotropia is far less common in young children than congenital Esotropia
  - Learn to listen to the parents as they relate to you abnormal behaviors for their child

47

Case 11: The "glaucoma consult"

- CC: "second opinion on glaucoma" HPI: OU/ 1 mos/Optometrist thinks I have glaucoma/ no Rx yet / no POAG family hx
- 62 BM, VA OD = 20/40, VA OS = 20/30
- NS +1 IOP: 20 11:00 am OU Pach: 574u
- VF OD: reliable / abn PD / hemifield zone defect
- VF OS: reliable / abn PD / hemifield depression
- OCT: CDR 0.8 OD / 0.70 OS Abn quadrant defects, abn RNFL OU, Abn cup volume OD

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48

Case: The "Glaucoma Consult"

- IMP: POAG OU
- Plan: Start latanoprost 0.005% qhs OU,
- RTO 3 weeks
- Next visit – IOP is 19/19 …..and tolerated
- RTO – 4 months
- LOOK AGAIN

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49

Case: The "Glaucoma Consult"

- IMP: VF are suggestive of a chiasmal compressive lesion, most likely pituitary adenoma
- ROS: negative
- HA: negative
- Call PCP and arrange for MRI of brain
- Results – massive supracellar pituitary adenoma with extension and bone erosion
- Plan - neurosurgery

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50

Case : The "Glaucoma Consult"

- Pearls & pitfalls
  - Optic nerve cupping can be glaucomatous or non-glaucomatous
  - Tumors involving the visual pathways will cause VFDs
  - Most glaucoma VFDs are nasal
  - Too much information can be misleading
  - Normal tension glaucoma especially deserves consideration of neuro-imaging, sleep studies, EKG, echocardiogram, CBC etc

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51

Case 12: The "Pink" Eye

- Referred by pediatrician for conjunctivitis not responding to topical treatments
- 17yobm CC: "Pink-eyes"
- HPI: 3 W duration / getting worse / painful
- Meds: Ilotycin from Peds Trauma: None NKDA
- BVA: 20/30 OU PERRL No APD
- EOM: Full EXT: Raised Red Rash-Neck
- SLE: Cell & Flare 3+ OU Fundi:WNL

52

What is the likely diagnosis?

- 1. Sarcoidosis
- 2. Tuberculosis
- 3. Syphilis
- 4. Idiopathic uveitis

53

What tests would you order?

- 1. Chest x-ray
- 2. RPR/VDRL
- 3. PPD
- 4. HLA B-27

54

You Make The Call

- Differential Diagnosis-idiopathic uveitis, sarcoid, TB, syphilis, Lyme, AS/Reiters, HIV
- Additional Testing-ANA, RPR/VDRL, HLAB-27, PPD, CXR, titers, HIV?
- Diagnosis-Syphilis (stage 2), AIDS
- Treatment Plan
  - Ceftriaxone IM, start HAART for HIV,
  - PredForte q2h, Cyclogel option

55

Case 13: The "Pink" Eye

- Perils & Pitfalls
  - Conjunctivitis is self limited in most
  - If persistent consider viral and adenoviral types
  - Slit lamp examination is better than a penlight and loop
  - Bilateral uveitis is suggestive of underlying systemic causes
  - Uveitis in youth is never normal and deserves a medical evaluation
  - Missing infectious diseases with mortality is grounds for legal action
  - As Dr. House famously said "everyone lies"

56

Case 12: "Headache" Lady

- Referred by PCP for headaches
- 45yowf CC: "HA, Blurred vision"
- HPI: Sudden / Explosive / Constant HA / photophobic
  - Lower Extremity Amputee / Tracheotomy
- Meds: None Trauma: None NKDA
- BVA: 20/40 OD 20/20 OS PERRL No APD
  EOM: Full EXT: WNL
- SLE: WNL Fundi: Globular Sub-Hyaloid Hemorrhage OD

57

What is the likely diagnosis?

- 1. Valsalva retinopathy
- 2. Terson's syndrome
- 3. Diabetic retinopathy
- 4. Vitreous hemorrhage

58

What tests would you order?

- 1. MRI of the brain
- 2. Lumbar puncture
- 3. Fundus photography
- 4. Random blood glucose

59

You Make The Call

- Differential Diagnosis-Drance hemorrhage, CNVM, migraine, subarachnoid hemorrhage
- Additional Testing-MRI/MRA, lumbar puncture+/-, pupillary testing, physical examination (neurology)
- Diagnosis
  - ICA/SAH Terson's Syndrome

60

You Make The Call

- Treatment
  - STAT admission/high mortality & morbidity
  - Oxygenation
  - Sedatives
  - Control of blood pressure
  - Monitor cerebral edema
  - Surgery +/-
    - endovascular ballons, “clipping” of aneurisms

61

Case 10: ICA / SAH

- Clinical pearls & pitfalls
  - First and worst headache in non headache sufferer
  - Neurological/Neurosurgical emergency
  - Prodromal sentinel signs common
  - Rapid onset of pain/HA, nuchal rigidity, loss of consciousness, loss of sight, obtundation, death
  - Neurosurgery if stable
  - Survivors-mild /severe cognitive impairment
  - Never delay proper evaluation
  - Know when to move fast

62

Thank you

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63