

1  **"How Did I Manage That?"**

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3  **What we will cover...**

- Oral Medications
- Comanagement Pearls for the Common and Not So Common Surgeries
- Cases from the Crypt

4  **When it comes to oral meds.....**

- Its as much about what to prescribe, but more importantly what NOT to prescribe
- Limit your treatment to eye and adnexa problems!
- 
- Introduction
- Pain Medications
- Antibiotics
- Antihistamines
- Antivirals

5  **Introduction**6  **Guiding Principles**

- Be sure you get the diagnosis right
- Know the drugs in your tool kit
- Use them judiciously
- Write for them clearly and correctly
- Follow the patient closely

7  **KEEPING UP**

- Rxlist.com
  - Search for drug information
  - Top 200 List
- Centerwatch.com
- Epocrates.com
- Drugs.com
- Lexi.com
- FactsandComparisons.com
- 
- 
- 

8  **AARP Website**

- [www.aarp.org/rxdrugs](http://www.aarp.org/rxdrugs)
- - Personal medication record
  - Part D Advice
  - Drug allergies

9  **PRESCRIPTION PAD REQUIREMENTS**

- Doctor name/address/telephone #
- Patient name
- Patient age (usually only put if pediatric Rx)
- Date (Good for 1 year)
- Refill line
- Signature line
- 
- 

10  **PRESCRIBING GUIDELINES**

- Do not have to write "Sig."... but can
- Do not have to write "po"...but can
- Can put more than one medication on the same Rx pad
- Write "Brand Name Medically Necessary" when a generic is not desired...but you may get generic anyway
- 

11 

- Be aware of what medications cost, especially the new ones
  - Tier 1
  - Tier 2
  - Tier 3

12 13  **Before you prescribe...**

- Allergic to anything?
- What other meds are they taking?
  - Rx
  - OTC
  - Vitamins/Herbals
- What systemic conditions do they have?
  - Especially note hepatic and renal problems.

14 

- "I am allergic to antibiotics"
- What exactly happens when you take them?
- "I get a bit nauseous for a few days with loose stool"
- 

DISTINGUISH SIDE EFFECTS FROM ALLERGY!

15  **TRUE ALLERGIC REACTIONS**

- Skin rash, hives, or itching
- Wheezing or trouble breathing
- Swelling of the face, lips, or throat/laryngeal edema
- Discontinue use immediately
- Consult doctor immediately
- Severe reactions demand emergency care

- 
- 16  **PRESCRIBING FOR WOMEN**
  - Pregnant/nursing or thinking about it?
    - Consult OB-GYN if necessary
    - OK in pregnancy
      - Tylenol 3, Vicodin/Lortab
      - Augmentin, erythromycin, Zpack, amoxicillin
      - Acyclovir and other antivirals

- 
- 17  **www.safefetus.com**

Enter Drug Name: (*Trade or Generic*)

Enter the trade name or the generic name of the medication you are taking to check potential risk according to the FDA from category A (safest) to X (should not be used). You are also given the risk of the drug on the fetus, if used during pregnancy; and its effect on breast milk, if taken during lactation.

- 18  **Pain Medications**
  - Pain tolerance varies with each individual
  - Signs usually should match symptoms
  - Have compassion but don't panic when someone appears to be in pain
- 19  **The Psychology of Pain**
  - A firm, calm, competent voice and manner will go a long way to reassuring patient
  - Male = Female tolerance
  -
- 20  **The Reasons People are in Pain**
  - Chemical injury
  - Corneal/conjunctival abrasions
  - RCE
  - Foreign Bodies
  - Uveitis
  - Herpes Zoster
  - Migraine attacks
  - Very high IOP/angle closure
  - Preseptal cellulitis/ acute chalazion
- 21  **Severe Pain**
  - Treat the problem correctly
  - Topical NSAID's are a big help
  - Don't hesitate to write an Rx for orals as a backup
- 22  **Drug Update**

- ACUVAIL™ (ketorolac tromethamine ophthalmic solution) 0.45% in unit dose vials
  - Note recent recall
- Two packs for one co-pay like Restasis
- Acular and Acular LS now generic
- 

23 

- Also: Xibrom, Nevanac, and generic Ketorolac (Voltaren) from B and L

24 **A Real Shocker!**25 

- 19 WM
- Helping Dad run some wires in the attic
- Live wire strikes him in the right eye!

26 **Management**

- Vigamox q2 h after debriding the loose epithelium
- Xibrom BID to take the edge off the pain
- Write a script for Lortab...just in case
- He returns to his OD the next day....almost totally healed!

27 **ER Nightmare!**

- 27 WF
- Wakes up with foggy vision yesterday am
- DWSC patient
- Pain later that day
- Goes to ER that night

28 **If topicals aren't enough....**

- Oral Pain Meds:
- 
- Double Dose OTC Alleve/Motrin/Tylenol
- Non-narcotics and narcotics

29 **Tylenol (Acetaminophen)**

- aka APAP
- 
- *N-acetyl-para-aminophenol*\*\*
- 

*\*\*severely toxic to liver: limit dose to well under 4000 mg per day*

30 31 **In the news....**

- While the medicine is effective in treating headaches and reducing fevers, even recommended doses can cause liver damage in some people. And more than 400 people die and 42,000 are hospitalized every year in the United States from overdoses.
- In hopes of reducing some of these accidents, the committee voted 24 to 13 to recommend that the F.D.A. reduce the highest allowed dose of acetaminophen in over-the-counter pills like Tylenol to 325 milligrams, from 500. And members voted 21 to 16 to reduce the maximum daily dosage to less than 4,000 milligrams.

32  **NARCOTICS**

- Schedule III and IV narcotics
- Corneal abrasions, post-op PRK, post-op pterygium surgery, etc.
- Short term therapy only
- Need DEA # to prescribe
- Can call in III and IV by phone, but not schedule II (Percodan)
- 
- 
- 
- 
- 

33  **Schedule I (C-I):**

- High abuse potential and no accepted medical use (heroin, marijuana, LSD)

34  **Schedule II (C-II):**

- High abuse potential with severe dependence liability (narcotics, amphetamines, and barbiturates: Percoset (apap), Percodan (asa))

35  **Schedule III (C-III):**

- Less abuse potential than schedule II drugs and moderate dependence liability (nonbarbiturate sedatives, nonamphetamine stimulants, limited amounts of certain narcotics: (Vicodin and Lortab))

36  **Schedule IV (C-IV):**

- Less abuse potential than schedule III and limited dependence liability (some sedatives, antianxiety agents, and non-narcotic analgesics)

37  **Schedule V (C-V):**

- Limited abuse potential. Primarily small amounts of narcotics (codeine) used as antitussives or antidiarrheals. Under federal law, limited quantities of certain schedule V drugs may be purchased without a prescription directly from a pharmacist. The purchaser must be at least 18 years of age and must furnish suitable identification. All such transactions must be recorded by the dispensing pharmacist.

38  **For a complete list of what's what...**

[www.usdoj.gov/dea/pubs/scheduling.html](http://www.usdoj.gov/dea/pubs/scheduling.html)

Or Google "Scheduled Narcotics" and it's the first link to come up

39  **GETTING A DEA NUMBER**

- On-line application
- [www.deadiversion.usdoj.gov](http://www.deadiversion.usdoj.gov)
- Optometrists are mid-level practitioners (MLP) unfortunately...wasn't always that way
- First time applicant-Form 224
- Renewal-Form 224a
- Cost \$551/Good for 3 years

- 
- 40  **"Should I Keep Mine?  
It's Expensive!"**
- 41  **Pain Management**
  - When topical NSAID's don't work.....
  - and
  - If no allergy to codeine or hydrocodone, I prefer.....
- 42  **TYLENOL #3 for Mild Pain**
  - Schedule III
  - Central acting narcotic analgesic
  - 300mg acetaminophen + 30mg codeine
  - Avoid in liver disease/alcoholism
  - No extra Tylenol® by patient in addition
  - No alcohol
  - GI distress and sedation are main side effects \*\*\*
- 43
- 44  **Hydrocodones: Legal Status**
  - Under United States law, hydrocodone can appear as both a Schedule II or Schedule III substance depending on the formulation. Here are the differences between the two:
  - Schedule II — Includes pure hydrocodone & formulations containing more than 15 mg hydrocodone per dosage unit. Written prescription required for refills.
  - Schedule III — Includes hydrocodone products containing less than 15 mg per dosage unit. May be refilled using phoned prescription.
- ⑩
- 45  **Hydrocodones for  
Moderate to Severe Pain**
  - LORTAB : a Schedule III narcotic
    - Hydrocodone with acetaminophen
    - Also available with aspirin (Lortab ASA)
    - Available in 2.5/500, 5.0/500, 7.5/500
  - 
  - 5.0/500
  - 
  -
- 46
- 47 
  - Most internists/dentists still use hydrocodone because it is a synthetic form of codeine
  - Stronger, more effective in reducing pain
  - Less severe side effects
  - Vicodin/Lortab prescribed far more frequently than Tylenol #3
  -
- 48  **Other Hydrocodones**
  - 
  - Vicodin ES (APAP w/hydrocodone)

- 650mg APAP + 7.5mg hydrocodone
  - Schedule III
  - Vicoprofen
    - 200mg ibuprofen + 7.5mg hydrocodone
    - When Tylenol® is contraindicated/liver disease
- 49  **Oxycodone for Severe Pain**
- Percocet
  - Schedule II
  - Not on most optometric formularies
- 50  **Darvocet-N for Mild Pain (Schedule IV)**
- Propoxyphene is a mild narcotic analgesic structurally related to methadone. The potency of propoxyphene napsylate is from two thirds to equal that of codeine.
  - 
  - 50/650 or 100/650\*
    - 50 or 100 mg propoxyphene, 650 mg apap
  - 
  - maximum dose of 600 mg propoxy/day
- 51
- 52  **PRESCRIBING GUIDELINES**
- Don't pre-print your DEA number on your Rx pad
  - Do not leave Rx pads where patients have access
  - Closely monitor what prescriptions are called in to the pharmacy and keep a record of refills especially glaucoma and narcotics
  -
- 53
- 54  **PRESCRIBING GUIDELINES**
- Write legibly
  - Specify length of treatment for acute care
  - Narcotics: write out number of pills
  - Ex: 12(Twelve)
  - 
  - Vs 12 which could become
  - 120
- 55  **Before you prescribe...**
- Allergic to anything?
  - What systemic conditions do they have?
    - Especially note hepatic and renal problems
  - Drug interactions/precautions
    - Narcotics and Alcohol don't mix
- 56
- "I am allergic to narcotics"
  - What exactly happens when you take them?

- "I get nauseous" or
- "I become sleepy"
- 

DISTINGUISH SIDE EFFECTS FROM ALLERGY!

57  **ALLERGIC TO CODEINE?**

- Most codeine "allergies" are just GI side effects...upset stomach, constipation
- 
- True IgE mediated allergic reaction rare
- Can use Darvocet N-100 if you want to avoid any association
  - acetaminophen and propoxyphene

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58  **SIDE EFFECTS OF PAIN MEDS**

- Constipation
- Nausea and vomiting
- Sedation
- Dizziness
- Itching
- Respiratory depression
- Addiction

59  **ALLERGIC REACTIONS**

- Skin rash, hives, or itching
- Wheezing or trouble breathing
- Swelling of the face, lips, or throat
- Discontinue use immediately
- Consult doctor immediately
- Severe reactions demand emergency care

60  **PRESCRIBING FOR WOMEN**

- Pregnant/nursing or thinking about it?
  - Consult OB-GYN if necessary
  - OK in pregnancy
    - Tylenol #3, Vicodin

61  **ANTIBIOTICS**

- Is an oral antibiotic truly needed?
- Check allergy information
- Use less expensive antibiotics when possible
- Take full course of therapy

62

- Oral antibiotics can cause thrush, vaginal yeast infections
  - Take doses with yogurt
  - Diflucan may be prescribed but do it through OB GYN
- Stop antibiotic if patient reports severe diarrhea/blood in stool

– Concerns of pseudomembranous colitis

63  **On birth control pills?**

– Counsel and document for concomitant antibiotic therapy although definite interaction controversial

64

65

With the available data, it is simply not possible to know for sure, so optometrists should continue to warn patients accordingly to take extra precautions while on the antibiotics

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66  **Oral Antibiotics**

- Tetracyclines
- Penicillins
- Cephalosporins
- Macrolides
- Fluoroquinolones

67  **OCULAR USES**

- Posterior blepharitis
- Chalazions
- Acne rosacea
- Dry eye
- Preseptal cellulitis
- Dacryocystitis
- Dacryoadenitis
- Canaliculitis
- Chlamydia
- Posterior toxoplasmosis activation

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68  **Bacterial Conjunctivitis**

- Chronic Staph...very common

69  **Oral Antibiotics**

- Tetracyclines
- Penicillins
- Cephalosporins
- Macrolides
- Fluoroquinolones

70  **-CYCLINES**

- Inhibit bacterial protein synthesis
- Cannot use in children younger than 8-12 due to teeth discoloration
- Cannot use in pregnancy/nursing
- Causes photosensitivity and photophobia
- Long-term therapy associated with pseudotumor cerebri (rare)

71  **TETRACYCLINE**

- Good broad spectrum activity
- Less use than Doxycycline
- QID dosing (250-500mg qid)
- Must take on an empty stomach\*
- Cannot take with dairy products
- Cannot take with antacids\*\*
- Cannot take with vitamins
  - \*food prevents absorption of drug into bloodstream
  - \*\*calcium/iron/aluminum/magnesium compounds also bind to TCN

72  **DOXYCYCLINE**

- Good broad spectrum activity
- Great if Pt reports Pcellin allergy
- QD to BID dosing
- Can take with food
- Can take with dairy products
- Cannot take with antacids

73  **OCULAR USES**

- Posterior Blepharitis
- Early Acute Styes
- Dry Eye
- Treatment for RCE: 100mg bid x 2 months with topical steroid qid (limited success)
- 

74 75  **Dosing Doxy**

- 100mg bid short term (2 weeks)
- Re-assess
- Possible additional course of 50mg bid or 50mg qd
- Longest course should probably be 6 wks

76  **Doxycycline: Cost**

- Doxycycline Hyclate 100mg #20 \$14.00
- Doxycycline Hyclate 100mg #60 \$26.00

77  **Acne Rosacea**

- Accompanied by blepharitis
- Commonly missed if subtle
- Make "nose watching" part of your routine

78  **Management**

- Doxycycline most commonly used
- Tetracycline, Minocycline, and low dose Cyclines also options
- Metrogel
- Dermatology consult
- 

79  **Another low dose doxycycline for Rosacea patients**

80  **ONCE DAILY DOXYCYCLINE**

- 40mg capsule (30mg immediate release and 10mg delayed release)
- Great for long term usage once controlled
- Increased compliance over bid dosing but.....increased cost!
- Approved for acne rosacea

81  **The High Priced Spread**

- Oracea 40mg #10 \$85.00
- Doryx 100mg #20 \$190.00

82  **Oral Antibiotics**

- Tetracyclines
- Penicillins
- Cephalosporins
- Macrolides
- Fluoroquinolones

83  **PENICILLINS**

- Beta-lactam antibiotic class
- Inhibits bacterial cell wall formation
- Penicillin, ampicillin, amoxicillin, dicloxacillin, etc.
- 10-15% of population are allergic to PCN
- Well tolerated and safe otherwise
- Can use in pregnancy and children
- Consult OB-GYN if nursing
- 
- 

84  **DICLOXACILLIN**

- Penicillin antibiotic
- Good for staph infections
- Resistant to beta lactamases (especially staph producing beta lactamases)
- Take on an empty stomach
- 250mg qid
- 
- 

85  **Dicloxacillin: Cost**

- Dicloxacillin 500mg #20 \$25.00

86 87  **Preseptal Cellulitis**88  **?Dacryocystitis**89  **You could treat this with an oral antibiotic (penicillin or cephalosporin), but.....**

- Probably a good idea to get an orbital consult

90  **Children can have blepharitis and styes too!**

91  **AMOXICILLIN**

- Penicillin antibiotic (aminopenicillin)
- Extended coverage over standard PCN
- Good for staph infections because resistant to beta lactamases
- Inexpensive

92  **AMOXICILLIN DOSAGE**

- Skin and soft tissue infections
- Adults
  - 875mg q12h
- Children
  - 20-40mg/kg/day divided q8h
  - 
  - 
  -

93  **Amoxicillin Cost**

- Amoxicillin 500mg #30 15.00

94  **AUGMENTIN**

- Augmentin = Amoxicillin + Clavulanic acid
- Cannot use if penicillin allergic
- Clavulanic acid is a “suicide inhibitor”
  - Protects amoxicillin from beta-lactamases
  - Does not have antibiotic action itself
- Allows increased coverage with less destruction by beta-lactamases
- Also covers anaerobes
  - Good for human and animal bites
- 

95  **AUGMENTIN INFO**

- Can use in pregnancy (category B)
- Can use in children
- Can cause nausea/vomiting/diarrhea
- Take with food/yogurt
- Few drug interactions
  - Allopurinol/probenecid (both for gout)
- 500mg q8h or 875mg bid
- Generic available but still expensive

96  **Augmentin Advantages**

- Use in kids because that’s what the pediatricians use!
- Comes in liquid form
- Good against H. Influenzae

97  **Oral Antibiotics**

- Tetracyclines
- Penicillins
- Cephalosporins
- Macrolides
- Fluoroquinolones

98  **ALLERGIC TO PENICILLIN?**

- Small percentage of patients will also be allergic to cephalosporins
- Literature suggests anywhere from 3-10% cross-sensitivity
- Alternatives: –cycline or -quinolone
- Or a macrolide
- Erythromycin, clarithromycin, azithromycin

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99  **Penicillin Allergy and Cephalosporins**

“This retrospective study of outpatients found a low absolute risk (1.1%), but a high relative risk (10-fold increase), of reacting to a cephalosporin after having reacted to a penicillin. However, the relative risk of reacting to a sulfonamide was similar, suggesting that a specific cross-reaction between penicillins and cephalosporins might not exist. The current approach of avoiding cephalosporins only in patients with severe allergic reactions to penicillins seems appropriate.”

Source: Journal Watch, June 1, 2006

Reference: *Apter AG et al. Is there cross-reactivity between penicillins and cephalosporins? Am J Med 2006 Apr; 119:e11-9*

100  **CEPHALOSPORINS**

- Beta-lactam antibiotic class
- Increased coverage over penicillin class
- Four generations of cephalosporins
  - Increasing gram negative activity from 1 to 4
- First and second generations better for ocular conditions (more likely gram positive)

101  **CEPHALEXIN**

- Brand name KEFLEX®
- First generation cephalosporin
- Good gram positive coverage (Staph/Strep)
- Cheap
- Adult dose is 500mg bid
- Also available in suspension for children
  - 20-40mg/kg/day divided q8h

102

103  **Keflex: Cost**

- Cephalexin 500mg #30                      \$24.00

104  **Out of Orbit**

- 54 WF

- Lid swelling for 3 days, getting worse
- Sees OD, put on Keflex 250 qid\*
- Next day worse, patient panics, sent to Omni
- 

105  **Modify Therapy or CPM?**

- We increased dose of Keflex to 500 qid
- Warm compresses
- Saw patient next day: no better but no worse
- 3 days later markedly better

106  **Oral Antibiotics**

- Tetracyclines
- Penicillins
- Cephalosporins
- Macrolides
- Fluoroquinolones

107  **MACROLIDES**

- Inhibit bacterial protein synthesis
  - Erythromycin, clarithromycin, azithromycin
  - Use with caution in liver disease
  - Drug interactions increased (next slide)
  - Alternative for penicillin allergic patients but lid tissue penetration not as good
- 

108  **MACROLIDE  
DRUG INTERACTIONS**

- Theophylline (asthma, COPD)
  - Dilantin, Tegretol, Depakote (epilepsy)
  - Digoxin (Congestive heart failure)
  - Coumadin (anticoagulant)
  - Zocor, Mevacor, Lipitor (cholesterol)
  - Norpace (antiarrhythmic)
  - Many antiretroviral (HIV) medications
  - Ergot derivatives (migraines)
  -
- 

109  **ZITHROMAX  
(Azithromycin)**

- Macrolide antibiotic
- Dosing regimen increases compliance
- OK in pregnancy and children
- Less GI effects than erythromycin
- Less drug interactions than other macrolides
- Drug of choice for chlamydial conjunctivitis

110  **ZITHROMAX**

- Z-pack
  - 500mg day one; 250mg days 2-5

- Great for compliance
- Treatment of chlamydia with 1 g dose
  - Prescribe four 250mg tablets
  - Take all at once

111 112  **Z Pak: Cost**

- Azithromycin 250mg pak #6      \$      20.00

113  **Z Pak for Styes?**

- Not commonly used
- Is 5 days enough?
- Fine for sinus/head/throat but not as good for lids

114 115  **Oral Antibiotics**

- Tetracyclines
- Penicillins
- Cephalosporins
- Macrolides
- Fluoroquinolones

116  **FLUOROQUINOLONES**

- Ciprofloxacin (CIPRO®) is prototype
- Blocks bacterial DNA synthesis
- Heavily prescribed for urinary tract infections
- Overprescribed in the 1990s
- Little staph coverage now
- Mainly used for gram urinary tract infections

117  **Cipro**

- 500 mg bid
  - Preseptal cellulitis in Pen Allergic Patients

118  **Levaquin**

- 500 mg tablet once daily
- The big gun if/when you need it

119 

- Levaquin 500mg #10      \$155.00

120  **IMPORTANT DRUG WARNING**

SUBJECT: Important change in the Avelox® (moxifloxacin hydrochloride) and Cipro® (ciprofloxacin) Complete Prescribing Information- Addition of Boxed Warning and Medication Guide Regarding Tendinitis and Tendon Rupture.

WARNING: Fluoroquinolones, including AVELOX®/CIPRO®, are associated with an increased risk of tendinitis and tendon rupture in all ages. This risk is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants (see WARNING).

Reference: HCNN (electronic health alerts) 10-22-08

121  **ANTIHISTAMINES**

- Central acting antihistamines
  - Benadryl (diphenhydramine)
- 
- Peripherally acting antihistamines
  - Selective peripheral histamine H1 receptor blockade
  - Less sedating but may be less effective
  - Claritin, Allegra, Zyrtec
  - All available with and without a decongestant

122  **All the Good Ones Are OTC!**

- Zyrtec (cetirizine)

123  **ANTIVIRALS**

- Herpes Simplex Types I and II
  - Inside cornea/keratouveitis
  - Lids
- Herpes Zoster/Bell's Palsy
- 
- 
- 

124  **Primary HSV Infection**

- Vesicular eruptions on the eyelid skin and/or eyelid margin
- Can be limited to the skin or can also result in follicular conjunctivitis and/or corneal epithelial disease
- Treatment: PO ACV 400 mg 5 x D x 1W or PO Valtrex 500 mg tid x 1W
- Vesicles resolve without scarring

125  **Growing Herpes**

- 61 WM Optometrist
- Red OS x 8 days
- Was traveling and self medicated with Tobradex

126  **Dx: Recurrent HSV Keratitis**

127  **Valacyclovir vs. Acyclovir for Recurrent HSV**

"One-year suppression therapy with oral valacyclovir (500-mg tablet daily) was shown to be as effective and as well-tolerated as acyclovir (400-mg tablet twice daily) in reducing the rate of recurrent ocular HSV disease."

*SOURCE: Miserocchi E, Modorati G, Galli L, Rama P. Efficacy of valacyclovir vs. acyclovir for the prevention of recurrent herpes simplex virus eye disease: A pilot study. Am J Ophthalmol, Oct. 2007*

128

129  **New (topical) Drug Alert**

130  **Zirgan**

- 1 drop 5x/day until ulcer "heals"
- Then 1 drop tid for 7 days
- 5 gram tube, now available from B & L



- Make sure patient knows of any co-management arrangement and agrees to it willingly
- Surgeon must have a form that patient signs indicating patient's willingness to have post-op care provided by OD
- Other than this, nothing should be in writing; there should be NO CONTRACT between practices

143  **Basic Principles of Co-Managed Care**

- Make sure that you document your charts carefully
- Be ready to justify the extra work you do when you receive a co-management fee from the surgeon for anything....lasik, premium lenses, etc.
  - Topography, OCT, pachymetry, slit lamp photos

144  **Basic Principles of Co-Managed Care**

- History
- Acuity
- External Examination
- Slit Lamp/IOP
- Fundus Examination

145  **History**

- Procedure, Eye, Date, Surgeon
  - S/P Pterygium resection OD x 1 day (Status-post)
  - S/P Trabeculectomy with MMC. POD # 1

146  **s/p PC IOL OD 7/28/10**

**Dr. Snead**

147  **History**

- Subjective complaints
  - Foreign body sensation
  - Pain, discomfort, sleep
  - Nausea, vomiting
  - Visual status/improvement
  - Photopsias, other visual sensations
  -
- 

148  **History**

- Post-operative medications/instructions
  - Earliest opportunity to assess compliance
  - Ask to see bottles and to bring to future visits

149  **Visual Acuity**

- Assess best corrected visual acuity
  - Critical to early identification of problems
  - Must always be able to explain change or unexpected visual acuity loss

150  **External Exam**

- Specific to procedure performed
- Be sensitive to peri-orbital pain and photophobia

- Remove any patches/shields
- Gently clean peri-orbital skin with attention to lid and lashes (tape adhesives, dried mucous, clotted blood)

151  **Proper Disposal**

152  **S/L Exam**

- Specific to procedure

153  **IOP**

154  **Fundus Examination**

- At the very least a red reflex should be noted.
- If unexpected or otherwise unexplained decrease in VA...you must dilate and explain

155  **Basic to all CoManagement**

- Two way communication
- You must communicate your findings to surgeon
- You must expect that surgeon will communicate with you regarding what went on in surgery

156  **CoManaging Complex Cataracts and the New IOLs**

157  **Component 1:  
History**

- Eye: functional history such as "problems with glare/TV/driving at night"
  - Activities of Daily Living: MUST BE DOCUMENTED especially with CATARACTS!
- 
- Social History: ?chronic depression, bipolar, anxiety disorders
- 
- Observation during exam: ambivalence, excessive questioning, unrealistic expectations, wanting guarantees

158  **Past Eye and Medical History Critical**

- Medications: Flomax?
- Contact Lens Wearer?
- Prednisone (PSC)
- Trauma
- Family history of cataracts at a young age
- Diabetes/Hypertension
  - How long have you had it
  - What do you take for it
  - Is it under control/when last checked
  - Doctor's name

159  **Component 2:  
Vision and Refraction**

- Visual Acuity (D & N)
- Pinhole should be part of vision
  - Monocular diplopia or glare alleviated?
- Glare testing or BAT (medium setting), or "Ambient Light" (room lights on) for any patient who is 20/40 or better

160  **Component 3:  
Ocular Health**

- Slit Lamp
- Dilated Fundus Exam

161  **When in doubt about the retina, get an OCT.....especially with premium lenses!**

162  **72 Korean Female 20/40 OD/OS with  
2+ cortical spoking, and cc "my vision is worse in right eye"**

163  **Watch out for Epiretinal Membranes**

164  **Time to Write Down Your Impression and Plan**

- Impression:
  - "Cataracts OD > OS with difficulty reading OU
  - 2+ NS consistent with reduced VA
  - Would like to rely less on glasses
  -
- Plan:
  - Schedule bilateral Restor IOL's OD then OS
- Premium IOL discussed, patient not interested/Schedule conventional monofocal IOL OD then OS
- 

165  **Or.....**

- Impression:
  - "Cataracts OU, night driving problems
  - 3+ NS consistent with reduced VA
  - 2 diopters of cylinder
  -
- Plan:
  - IOL's OD then OS
  - Patient denies Toric

166  **Book It Danno!**

- Schedule the surgery or surgical evaluation for the patient!
- Letting them do it means it may not get done when and with whom you choose

167  **We tried to schedule this 76 yo male for surgery but.....**

168  **Communication Key!**

- Communicate pertinent findings directly to surgeon...don't leave it to chance!
  - Meds (Flomax) and Conditions (Pseudoexfoliation Syndrome, Glaucoma) Ocular Surface Disease

169  **You wouldn't send this.....**

170  **So why send this?**

- 171  **Get Involved in IOL Selection and Final Refraction**
- YOU should be the one advising patient and surgeon on:
    - Monovision
    - Need for a Toric
    - Multifocal/Premium IOL
- 172  **Using the Right Terminology**
- Premium lens
  - Lifestyle lens
  - High Technology Lens
  - Multifocal lens
- 173  **Good Candidates?**
- Cataract patient presents with one pseudophakic eye (monofocal lens) and a cataract in the other eye, or a cataract in one eye only
  - 
  - Patient presents with s/p lasik ou, now has cataracts ou
  - 
  - Patient has >2 diopters of cylinder
- 174  **Cost**
- Balance billing allows us to charge patients over and above Medicare
  - Professional fees: \$1500 (20% of this to referring OD (\$300) + Medicare's 20%)
  - ASC: \$900 which covers cost of the IOL
  - TOTAL out of pocket: \$2400 per eye
  -
- 175  **More on reimbursement of premium IOL's**
- Its on the CMS radar screen
  - Surgeon collecting money and distributing to OD is probably the easiest scenario, as long as patient knows about the distribution
  - Medicare will ask: what extra work did you do for that \$300 per eye?
  - Toric: minimal if any additional post-op care
- 176  **Save Yourself Some Time**
- *I mention the cost early on to save a lot of unnecessary discussion*
  - *Document in chart that you offered multifocal or toric, and that patient declined*
  - 
  -
- 177  **BACK TO BASICS**
- We worked long and hard to see cataract post-ops, so let's see them!
  - Code 66984: cat surgery with IOL
  - Code 66982: cat surgery with IOL complex
  - 
  - Modifier 54 filed by surgeon
  - Modifier 55 filed by doctor of optometry
- 178  **The Case of the Unexplained VA**
- \*69 y/o F, cat sx (ReStor OU) 5 mo ago

- \*20/20 OD, 20/50 OS (distance UCVA)
- \*20/25 OS w/+1.00 sph
- \*J1 OD, J5 OS (near UCVA)
- \*S/P YAG cap OS 1 mo ago
- \*Ref for 2<sup>nd</sup> opinion, poss. LASIK

179 

- SLE- nl
- Topo- .25D WTR, regular
- DFE- nl
- Pachy- 542 OD, 538 OS

180 **Low Grade CME**

- Subclinical (not visible)
- Hyperopic Shift
- Reasonably good BCVA
- Poor "quality" vision
- OCT/FA needed

181 **CME Treatment**

- Topical NSAIDS: Xibrom, Nevanac, Accuvail, generic Diclofenac (Voltaren)
- Topical steroids
- Retrobulbar steroids
- PO NSAIDS

182 **Results after 6 Weeks**

- 20/20-1 UCVA distance
- J1 near
- +0.25 sph
- Patient happy!!!!

183 **The following can severely affect the outcome of cataract surgery:**

- Pterygium
- Salzmann's Nodular Degeneration
- NEED TO SEND PATIENT FOR SURGERY FOR THESE PRIOR TO CATARACT IF THEY ARE AFFECTING OCULAR SURFACE AND TOPOGRAPHY READINGS
- WHICH IN TURN AFFECTS IOLMASTER READINGS AND FINAL LENS POWER

184 **Pterygium Excision with Amniotic Membrane Graft**

- 69826
- 90 day global period
- 4 post op visits

185 **Pterygium**

- POD#1
  - History- Pain/discomfort- may require pain meds for a few days
  - Acuity- should be normal
  - External- Moderate conjunctival injection
  - S/L- be sure corneal epithelium intact

186 **1 DAY**

- 187  **Sutures**
- Rarely used unless the graft area is huge
  - Fibrin glue better
  -
- 188  **4 WEEKS**
- 189  **Drops**
- If any sign of recurrence or inflammation, up the steroids
  - Even consider a steroid injection
- 190  **IOP**
- Check IOP.....
    - If elevated consider steroid response
    - If low, check carefully for wound leak
- 191  **If in doubt.....**
- Keep them on lubes and a steroid
- 192  **Superficial Keratectomy**
- 193  **A little Salz.....Man?**
- 55 y/o F c/o months of monocular f.b. sensation, contact lens intolerance, tearing, and mild decrease in vision
- 194  **Salzmann's Nodules**
- Follows episodes of keratitis
  - Elevated, irregular collagen plaques with hyalinization
  - Anterior to Bowman's with irregular epithelium and topography
  - +/- F.B. sensation/photophobia
- 195  **Salzmann's Video**
- 196  **One Day: BCL in place  
NSAID and antibiotic**
- 197  **Salzman's Post Op Visits**
- 1 day
  - 3-5 days...remove BCL and stop NSAID, start hourly viscous artificial tears
  - 1 month
  - 
  - Progress will be monitored via acuity and corneal healing and topography
  - Then set up the cataract surgery!
- 198  **Penetrating Keratoplasty**
- 65755- Keratoplasty (Corneal transplant), penetrating in pseudophakia
  - 90 day global
  - 6 post-op visits
  - Reimbursement for tissue can be a problem depending on the facility
- 199  **Penetrating Keratoplasty**
- POD#1
  - History- Mild to moderate pain, discomfort
  - Vision will be reduced due to corneal edema, lack of corneal epithelium, or

astigmatism.....20/200 range

- 200  **Penetrating Keratoplasty**
- A/C reaction- moderate, no hypopyon
  - Chamber depth normal, iris round, lens (IOL or phakic) unchanged
- 201  **Penetrating Keratoplasty-IOP**
- Important- measure with tonopen
    - Too high- retained visco, steroid responder
    - Too low- wound leak, CB shutdown
- 202  **Penetrating Keratoplasty**
- Fundus Exam- Red Reflex
- 203  **Penetrating Keratoplasty**
- Follow-up:
    - One week to monitor epithelial healing, assess inflammation, monitor graft
    - Topical antibiotic- QID
    - Topical steroid- Q2H
    - Cycloplegia
- 204  **Penetrating Keratoplasty**
- POD # 7
    - Epithelialization complete
    - Remove BCL if there was one
    - Graft clearing, edema less
    - A/C reaction improving
    - Patient more comfortable
    - IOP normal
    - D/C antibiotic, cycloplegia
    - Continue steroids Q2H
- 205  **Penetrating Keratoplasty**
- S/P PK x 2 weeks and beyond
  - Vision improving
  - Topography/refraction identify post-op cylinder
  - Assess graft- continued clearing, no increase edema, endothelial rejection lines
  - Wound intact- sutures intact not broken extruding, no leaks, gapes, suppuration or abscess
  - Decrease steroids to QID, F/U in 2 weeks
  -
- 206  **Penetrating Keratoplasty**
- Late infections- suture abscess
  - Astigmatism
  - Graft rejection episodes
  - Elevated IOP –steroid responders
- 207  **Penetrating Keratoplasty**
- Infections
- 208  **PKP: the bottom line**
- Hard to get tissue reimbursed

- Fewer and fewer corneal specialists
  - Fewer and fewer surgeons want to do them
  - Rehab takes up to a year
- 209  **New and Improved**
- DSEK
  - DSAEK
  - Endothelial Keratoplasty
- 210  **Fuch's Endothelial Dystrophy**
- Stromal then epithelial edema
  - Epithelial edema in the form of
    - microcysts
    - bullae
  - Bullae can rupture causing pain
- 211  **Fuch's Endothelial Dystrophy Pearls**
- Use specular reflection or Conan Cellcheck
  - No need to alarm patient unless signs of edema
  -
- 212  **Operative Day One**
- Surgeon will keep patient around for at least one to two hours to be sure graft is positioned correctly
  - Patient must remain supine for 24 hours
- 213
- 214  **DSAEK Post Op Visits**
- 1 day
  - 1 week
  - 1 month
  - 3 months
- 215  **Look for**
- Flap positioned well on cornea
  - Clarity of cornea.....should improve steadily
  - AC reaction
  - 
  - Patients will be on antibiotic and steroid just like Cataract patients
- 216  **Finally.....**
- Each surgeon has their own regimen for each procedure
  - "Scrub in" with the surgeon and know their routine and preferences
  - Communication is critical both ways
  - Be accessible to your patients after hours, and be sure to have your surgeon's cell #
- 217  **"How Did I Manage That?"  
Cases from the Crypt**
- 218  **First, a few rules to live by...**
-

- 
- 219  **Rule 1: Be a Good Observer!**
- 220  **Rule 2: Don't Panic!**
  - Even if others before you missed the dx doesn't mean you will
  - Calmly assess the eye, one medical finding at a time
- 221  **Rule 3: Don't Be Afraid to Tackle New Things**
  - Glaucoma is an area of untapped potential for optometrists!
  - Dry eye
  - Lacrimal procedures
  - And just about everything else!
  - If you are referring, always ask "what are they going to do that I cannot"
- 222  **My Eye is Running!**
- 223  **78 WM**
  - Long history of dry eyes, blepharitis, and multiple treatments by multiple doctors
  - Question: "Of all the symptoms you are having, which one is the most annoying"
  - Answer: "The tears running down my face"!
- 224  **48 WF**
  - Longstanding history of "irritated eyes"
  - Put on restasis, lid scrubs, antibiotics, ointments...the kitchen sink!
  - Extern comes out of room with history that looks like a term paper!
  - BOTTOM LINE:
  - "What is the most annoying symptom that you would like to get rid of?"
- 225 
  - 41 WF
  - Breast cancer survivor
  - Worried about itching and "tearing" OS > OD, worse when "out of contacts"
  -
- 226  **Your Diagnosis?**
  - Ectropian due to eyeglass frames!
- 227
- 228  **True epiphora**
  - examine punctal openings (size and apposition to globe), then dilate/irrigate to determine site of blockage
- 229  **Irrigating Cannulas/Dilators**
  - Burnstine Lacrimal Cannula 23 ga
  - Shahinian Lacrimal Cannula, straight (bullet tip 23 ga)
  - 
  - KATENA.COM
- 230  **Irrigation**
- 231  **30 WF Psychologist**
  - History of one year of "tearing" of right eye

- Do tears run down face? "yes"
- Lacrimal irrigation: blockage in the common, fluid runs out the upper punctum with mucus
- Irrigated again with antibiotic and prescribed for two weeks
- DCR is the next step

232  **Take Home Pearl**

- Always ask about tearing..."do the tears run down your face?"
- Think about adding lacrimal procedures to your practice!
- 

233  **The Case of the Slippery Slope**

- 48 WM golf buddy
- Myrtle Beach annual guys trip
- 

234

- "My glasses are sliding down my nose, Paul"
- My response: get rid of that 50 lb. frame!

235

- He sees a dermatologist as a routine check for other skin lesions
- Dx: Basal Cell

236  **Has a Mohs procedure, doing well**

237  **Scary Man**

- 24 WM
- "My right eye has been swollen for 5 days"
- Best friend had pink eye lasting 7 days

238

- Sent by OD for oral antibiotic for "preseptal cellulitis"
- 

239

- VA 20/40 best with infiltrates
- Huge node on r side
- 4+ follicles and sub-conjunctival hems
- 

240  **Real Dx:**

- EKC
- Swollen lids can be a hallmark
- Red eye and node distinguish this from a preseptal

241  **New Dx and Tx??**

- Adenodetector?
- Betadine?

242  **Until definitive studies are done...**

- I prefer a clinical assessment and Pred Forte
- Tincture of Time
-

243  **The Case of the Nastier Pink Eye**244  **62 WM Wine Manager @ Trader Joes**

- My left eye has been "very sore" and "swollen" for a week
- Saw doctor a few days later, Lotemax prescribed with no effect
- 

245  **Management**

- Working diagnosis: Scleritis
- Mission: knock out the inflammation before it spreads posteriorly
- How: Pred Forte q 1 hour with a Medrol Dose Pack

246  **7 days Post Treatment**247  **60 mg Oral Pred added**

- Almost total clearing after 2 weeks

248  **Differential Diagnosis: always rule out a conjunctival abrasion/laceration**249  **Speaking of "Pink Eye".....**

- 24 BF working in Garden Section of a WalMart while someone was power blowing sidewalk, something entered her eye on a Friday
- Wakes up Sunday with discharge OD, sees us Monday

250  **Management**

- Fourth generation fluoroquinolones are good but not good enough alone: Iquix, Besivance
- 
- Fortified Vancomycin and Tobramycin
  - Vancomycin 25mg per ml & Tobramycin 14mg per ml\*
  - Amphotericin 10 mg/ml Q 1 H
- 
- Add Pred Forte when the time is right

251 252  **Socketed with a Soccer Ball**

- 14 WM
- Hit in right eye the day before with a soccer ball
- Saw eye doctor the next day, told pt that he had a retinal detachment that needed immediate surgery, made appt for patient
- 













253 

- Comes in with one eye dilated
- VA 20/20 -3
- 1+ cell and flare in AC

254  **Fundus Appearance**255  **Good News**

- 1 • Doctor knew something was wrong
- Made appointment for patient

2

- 
- 256  **What's Wrong with This Picture?**
  - Got parents into panic mode...hard to win back confidence after that!
- 257  **30 WM Hit with Bungee Exercise Band**
- 258  **Other Findings**
  - Bilateral abrasions
  - Angle Recession: Yearly Exams for Life
- 259  **The Real McCoy**
- 260  **Patient "told to see someone" soon**
  - Given a few names of possible specialists
  - Nothing written in the chart except "possible RD"
  - Patient saw no one for two weeks
  - Finally chose a doctor at local university eye department who encouraged a suit
- 261  **What's Wrong with This Picture?**
  - No appointment made for patient
  - Shabby record keeping
  - Resulted in a two year lawsuit which OD lost!
- 262  **Avoiding a Lawsuit: Tip**
  - <sup>1</sup> • Make Appointments for Patients!
  - Don't leave it to chance
  - Treat the chart better than you treat the patient
  -
- 263  **Referring patients**
  - 
  - Be firm...let them know they can change appt
  - If they refuse, write it in the chart
  - Send a referral letter by fax or mail, with confirmation
  - Call on the important cases and document day/date/time of call and details
  -
- 264  **The Mystery Membrane**
- 265  <sup>1</sup>
  - 4+ c/f ou
  - Cyclitic membrane in temporal aspect of aqueous of left eye
  -
- 266  **Management**
  - Pred Forte q1h
  - Atropine 1% QID, didn't have Neo 10% that day
  - RV 2 days
  - Synechiae OS persist, but membrane is.....
- 267  **Work-Up**
  - History

- May or may not present with light sensitivity and pain
- Usually describe gradual VA loss +/- floaters

268  **Laboratory Studies**

- When to run?
  - Recurrent or bilateral disease
  - Review of systems (+)
  - Concomitant scleritis
  - Posterior involvement
  -
- How to order? Use Rx pad or form, send patient to outpatient lab or hospital
- Will they accept order from OD? Usually not a problem, they want your business!

269  **Laboratory Studies**

- What to order? A good battery of screening tests for anterior uveitis:
- CBC, Erythrocyte Sedimentation Rate, FTA-ABS, HLA-B27, Rh Factor, ANA, Medical consult
- Don't forget herpes

270  **Laboratory Studies**

- A good battery for posterior uveitis:
- Angiotensin converting enzyme (ACE), Toxoplasmosis titer, Chest X-Ray, TB test, Medical consult

271  **Interpreting Results**

- Don't expect to know normal values
- Rely on printout to give you normal/abnormal values
- Example:

	<u>Outside Range</u>	<u>Within Range</u>	<u>Range</u>
ACE16-66		55	

272  **What to do with the results?**

- Interpret and react
  - Positive FTA-Abs – ID consult/IV PCN
  - Positive PCR\* for HSV – oral acyclovir
  - Positive spiral chest CT scan – Pulmonary consult – suspect sarcoid
  - HLA-B 27 positive plus positives on ROS (low back, joints, mucosae, gut) – Rheumatology / GI consult – suspect HLA-B27 associated diseases
  - 
  - “Polymerase Chain Reaction” test

273  **Clinical Features**

- Cell and flare--grade each separately
- Open up the beam, slit lamp on high, beam splitter off, and room pitch black
- 

274  **Clinical Features**

- Hypopyon:
- Think possible bacterial or fungal infection
- REFER OUT for a/c tap
- 

275  **Clinical Features**

- Cyclitic Membranes
- KP
- Corneal folds
- Posterior synechiae
- Vitritis
- Retinitis
- Periphlebitis

276  **Pearl**

- DILATE before you make the diagnosis of “anterior uveitis”

277  **Management**

- Be Aggressive!
- Taper slowly: lag tapering behind improvement
- Think about punctal occlusion
- Don't be afraid of steroid responders

278  **Steroids**

- Pred Acetate 1%
- Use in high doses initially (q2h at least!)
- Severe AC reaction warrants q30 minutes, at least for a day or two

279  **Durezol: new steroid approved for post-op inflammation and now, uveitis**280  **Steroids**

- Don't forget about sleeping hours
- Decadron ointment
- Can be made up by a compounding pharmacy \*
- 
- \*Leiters pharmacy 800-292-6773

281  **Steroids**

- If poor response to topicals, think about oral Medrol dose pack
- Steroid injection another alternative

282  **Oral &/or Regional Injection**

- Violent, “plastic” uveitis
- Posterior involvement
- Associated macular edema
- History of requiring such therapy

283  **Non-Steroidals**

- Oral NSAID's can't hurt, will probably help with pain and inflammation
- Can use any OTC, double up on recommended dosage

284  **Dilating Agents**

- Mild cell and flare: Homatropine 5%
- Moderate to severe with/without evidence of synechiae: Atropine 1% or Scopolamine,
- Phenylephrine 10% (cardiovascular history)
- Give loading dose in office, then Rx QID for about 2 weeks, then taper
- 

285  **Clinical Pearl**

- Have several bottles of 1% Atropine and 10% Phenylephrine on hand at all times, as most pharmacists don't carry either of them!

286  **Elevated IOP**

- Either from steroid response or (more likely) from uveitic glaucoma
- Usually don't want to stop the steroids, so add Beta Blocker
- No prostaglandins!

287  **Elevated IOP**

- Be sure angles are open
- Must rule out pupillary block
- Relieved by dilation or laser PI, either argon or YAG

288  **Tapering The Drops**

- Lag tapering behind improvement (PF + dilating agents!)
- Don't be in a rush to taper
- Warn patients at outset they may be on drops for 4 to 6 weeks

289  **Tapering Drops**

- Example of tapering schedule:

Day 1	4+ c/f	PF	Q1/2 h
Day 2	sx better	PF	Q1/2h
Day 3	2-3+ c/f	PF	Q 1h
Day 5	2+ c/f	PF	Q 2 h

290  **Recap of Pearls:**

- Be aggressive!
- Use brand name Pred only
- Lag tapering behind improvement
- Don't over promise healing time
- Think about systemic disease

291  **A Bump in the Road**

- 8 yo WF in for routine exam
- VA 20/20
- Slit lamp exam reveals iris elevation temporally OD
- 

292 

- Pupil shape normal
- Gonioscopy normal except for elevation
- Dilated exam using 4 mirror lens: difficult to see anything

293  **Question:**

- A patient with these clinical findings *most likely* has a(n):
  1. Iris cyst
  2. Iris melanoma
  3. Ciliary body melanoma
  4. Anatomical variant

294 

- Differential Diagnosis: Benign iris cyst vs. ciliary body melanoma

- DX: Iris cyst

295 

- 23 WM
- Routine exam 1 year ago, "normal"
- Sees OD this visit, notes "bump on the iris nasally right eye"

296 

- Bump on nasal iris
- Gonio view obstructed
- Pupil very round and symmetrical with fellow eye
- IOP totally normal

297 **Pearls**

- Look to see if pupil distorted
- Use 4 mirror lens to see behind iris
- Follow closely with photos, 6 month followups

298 **Bonus Case : Does Your Face Hurt?**

- 73 BF
- 1 week hx of severe mucopurulent drainage OS and a red eye
- Began noting "raw, irritated" skin above and below eye with itching

299 

- Was applying frequent hot soaks to area around OS
- Awoke the morning we saw her with swelling below RLL

300 **Your diagnosis?**301 **Atopic Dermatitis**

- Think of it as a form of eczema triggered by a variety of irritants
  - Soaps, harsh chemicals, heat, stress, foods, and certain infections such as
- Staph Aureus: a frequent cause of this condition with skin response in periorbital region

302 **Management**

- Vigamox drops OS QID
- Tobradex ointment for eczema
- Benadryl OTC 25mg tabs QID
- Total resolution 4 days later with photos to prove it!

303 **Notes:**