

I've got a case of what? -- Sexually Transmitted Diseases/Infections & The Eye

1 hour

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Description:

Sexually transmitted diseases and their related infection agents can be devastating to the human visual system, resulting in anterior and posterior segment manifestations as well as the presence of opportunistic infections in some conditions. A brief review of the clinical characteristics, both ocular and systemic, of multiple STIs will be presented. Additionally, newer literature findings and recommendations for diagnostic strategies, treatments, and management of STIs will be discussed with case examples provided.

Learning Objectives:

- Explain the basic pathological and clinical findings that occur in the eyes of individuals with ocular manifestations of sexually transmitted diseases.
- Understand the impacts of management strategies on microbial resistance and be able to discuss challenges to and values of monitoring programs.
- Discuss clinical characteristics of Chlamydia, Neisseria gonorrhea and HIV within the eye, as well as necessary systemic testing and systemic treatment options for those STDs, both existing and those under investigation

Outline:

I. Introduction and Relevancy

- A. Infection rates review: The last 20 years and current trends
- B. Potential public health reasons and consideration

II. Case I: This Rash Just Won't Go Away....

- A. 19-Year-Old White Male
- B. Chief Complaint
 - 1. Irritated, Red Eye
 - 2. Sensitivity to light with mild decreased VA
- C. Ocular History: Contact lens wearer
- D. Medical History/Review of Systems
 - 1. Persistent Rash on torso
 - 2. No additional problems or medications noted

- E. Social History
 - 1. Risk behaviors
 - 2. Environmental considerations
- F. Ocular Examination Findings
- G. Impression/Plan
 - 1. Differential Diagnosis
 - 2. Serology Testing and results

III. Conditions to be covered – Review of Sexually Transmitted Diseases/Infections (STD/STI)

- A. Herpes Viral Strains
- B. Human Immunodeficiency Virus (HIV)
- C. *Neisseria Gonorrhea*
- D. Chlamydia
- E. Syphilis

IV. Case II: I noticed this bump on my eyelid....

- A. 23 yo Black Male
- B. Chief Complaint
 - a. Irritated, Red Eye with recent bump on upper lid
 - b. Corresponding mild decreased VA
- C. Ocular History: negative
- D. Medical History/Review of Systems
 - a. (+) Dx with Chlamydia 6 months prior
 - b. Negative for other STD's 6 months prior
- E. Social History
- F. Clinical evaluation
- G. Impression/Plan
 - a. In office management
 - b. Referral and serology considerations

V. What may be seen □ Overview of Anterior Segment Manifestations

- A. Lid and Face Lesions
 - 1. Herpes Simplex Virus (HSV) Vesicles
 - 2. Molluscum Contagiosum
- B. Conjunctivitis/Keratoconjunctivitis
- C. Keratitis
 - 1. May be diffuse or focal areas of corneal inflammation
 - 2. Epithelial – Positive NaFl staining

3. Stromal associated with edema
 - a. Interstitial
 - b. Disciform
4. Additional associated findings of adjacent tissues
 - a. Injection may be focal corresponding to area of defect or diffuse
 - b. Secondary uveitis if severe

D. Uveitis

1. Early Ocular Signs
 - a. Miosis
 - b. Perilimbal flush (red-blue injection)
 - c. Cells (lymphocytes) and Flare (protein exudates)
 - d. Keratic precipitates (KP) – Granulomatous vs. Non-granulomatous
 - e. Reduction of IOP
2. Late Ocular signs
 - a. Possible posterior synechiae (iris to lens) – may threaten vision
 - b. Elevated IOP
3. Cataract

VI. **Case III: It started it some floaters I couldn't swat away....**

- A. 32 YO African American Male
- B. History:
 - a. Chief Complaint: Sudden loss of vision OS x 6 days
 - b. Ocular History: Unremarkable
 - c. Medical History/Review of Systems
 - i. Withheld
 - ii. Taking 3 unknown medications
- C. Exam findings
- D. Impression/Plan

VII. **What may be seen □ Posterior Segment Manifestation Overview**

- A. Retinal Complications
 1. Vasculitis
 - a. Periphlebitis – Inflammation of the outer coat of a vein or the tissue surrounding
 - b. Frosted angiitis
 2. Retinal Necrosis
 - a. Acute Retinal Necrosis (ARN)/ Bilateral ARN (BARN)
 - b. Progressive Outer Retinal Necrosis (PORN)
 3. Retinitis

- a. CMV
- b. Syphilis
- B. Neurologic/Neuroretinitis

VIII. Sexually Transmitted Diseases/Infections with Ocular Manifestations

- A. Viral Infections associated with sexual transmission
 - 1. *H. Simplex*
 - 2. *Molluscum Contagiosum*
 - 3. *HIV/ AIDS*
- B. Bacterial and Other Systemic Infections spread by sexual transmission
 - 1. *N. Gonorrhea*
 - 2. Chlamydia
 - 3. Syphilis
- C. Serology
 - 1. CBC with Differential
 - 2. ESR
 - 3. Plating & Titers for specific condition/Chlamydia & *N. Gonorrhea* often together
 - a. Chocolate Agar or Thayer-Martin cultures for *Neisseria Gonorrhea*
 - b. Nucleic acid amplification test (NAAT)
 - i. More sensitive and specific than other chlamydia tests
 - ii. May use urine from both men and women (no pelvic exam reqd)
 - 4. Changes to recommendations testing for Syphilis
 - i. EIA (Reverse sequencing standard) & RPR
 - ii. Consideration with FTA-ABS
 - 1. False positive results may occur with patients (+) SLE
 - 2. False positive result for FTA-ABS between Syphilis and Lyme
 - 5. Viral load & CD4 testing

IX. Other Viral Etiologies: Conjunctivitis & Keratoconjunctivitis

- A. *Molluscum Contagiosum*
 - 1. Highly contagious dermatologic condition
 - 2. Most commonly seen in childhood
 - 3. Associated with HIV infection in adults
 - 4. Ocular complications if occurring on lid margin – “viral shed”
 - i. Secondary follicular conjunctivitis
 - ii. Possible infiltrates and keratitis
 - iii. May develop significant ocular surface complications
- B. *Molluscum Contagiosum* – Management
 - 1. Ocular -

- i. Refer to remove lid lesion – surgical excision needed (Oculoplastics)
 - ii. Remove in timely fashion to avoid secondary complications
- 2. Treat ocular surface, including prophylaxis:
 - i. No approved topical anti-viral medication available
 - 1. Zirgan consideration
 - ii. Prophylactic treatment for surrounding tissues (cornea) initiated
 - iii. Artificial tears
 - iv. Combination medication if keratitis is significant
- 3. Ed. patient and consider referral for systemic testing
 - i. STD's including HIV testing
 - ii. May need to treat co-morbidity

V. HIV infection

- A. Human Immunodeficiency Virus – retrovirus
 - a. Results in immunocompromised patient
 - b. Different strains
 - c. Chronic disease
- B. Anterior segment manifestations –
 - a. Microsporidia - Appearance on the cornea
 - i. NaFl stain
 - ii. Diffuse and very small
 - iii. Opportunistic infection
 - b. Kaposi's Sarcoma
 - i. Differential diagnosis: subconjunctival hemorrhage
 - ii. Lid and/or bulbar & palpebral conjunctiva
 - iii. Focal treatments
 - c. Secondary Infections – Includes: molluscum contagiosum
 - d. Dry eye
- C. Posterior segment manifestations –
 - a. HIV retinopathy
 - i. Cotton wool spots
 - b. ARN/ BARN
 - c. PORN
 - d. Opportunistic infections
 - i. CMV retinitis
 - ii. Toxoplasmosis
- D. Testing and Management
 - a. CD-4 count/ Viral Load
 - b. Triple “cocktail” □ HAART (Highly Active AntiRetroviral Therapy)
 - c. Prophylactic Antibiotic Treatment

VII. Neisseria Gonorrhea

- A. Bacterial Conjunctivitis associated with systemic condition - *Neisseria Gonorrhea*
 - 1. Staining procedure requires Thayer-Martin or Chocolate agar

2. Bacteria that can invade the intact cornea
- B. Characteristics of *N. Gonorrhea* Conjunctivitis
 1. HYPERACUTE presentation with copious mucopurulent discharge
 2. (+) pre-auricular node possible due to severe acute response
 - i. Generally associated with viral infections but so severe
- C. Treatment: REQUIRES SYSTEMIC AND TOPICAL MEDICATION
 1. SYSTEMIC: Penicillin IM BID x 10 days w/1g of Probenecid or Ampicillin 3.5g daily
 2. TOPICAL treatment to protect the cornea

VIII. Chlamydia

- A. An intracellular obligate organism, having properties of both bacteria and virus
- B. Chlamydia Related Conjunctivitis
 1. Mixed Papillary and Follicular Conjunctivitis
 2. Different types of ocular manifestations:
 - i. TRACHOMA
 - a. Starts as chronic follicular, sup. palpebral conjunctivitis
 - b. Followed by papillary hypertrophy
 - c. Conjunctival scarring may cause trichiasis & superior corneal involvement
 - d. HERBERT'S PITS (*limbal follicles*)
 - ii. ADULT INCLUSION CONJUNCTIVITIS:
 - a. Most common acute follicular conjunctivitis, chronic, recurrent.
 - b. Unilateral symptoms with mucopurulent discharge
 - c. (+) PAN
 - d. Second week may develop inferior keratitis with infiltrates and pannus. Lower fornix.
- C. TREATMENT:
 1. **Trachoma:**
 - i. Oral Tetracycline 250mg QID x 3 weeks with topical tetracycline ung 5x/day for one month.
 - ii. Avoid milk and DO NOT USE in pregnant patients
 2. **Adult Inclusion:** Doxycycline 100mg
 - i. Past recommendations: Zithromax 1g x 1day □ WHY and WHY NOT
 - ii. Education, Reporting and Considerations

IX. Syphilis

- A. General Information
 1. Characterized as "the great imitator"
 2. Caused by a SPIROCHETE, *Treponema Pallidum*

3. May be Congenital vs. Acquired

B. CONGENITAL Infection

1. Transplacental transmission in the 2nd/3rd trimester
2. 60% Mortality rate
3. Manifest at two - ten weeks of age
4. Eye findings associated with congenital syphilis
5. SYSTEMIC TREATMENT for congenital syphilis

C. ACQUIRED

1. Access the body through mucous membranes or skin
2. Reaches lymph nodes within hours and spreads throughout the body
3. Transmission usually through sexual transmission
 - a. Initial incubation: 1-13 weeks, average 1 month
4. Three stages
 - a. Primary: Chancre lesion at inoculation site (~1mo)
 - b. Secondary: Cutaneous rash. (~1.5 to 3 months)
 - i. May resolve or persist for months.
 - ii. INVOLVES PALMS OF HANDS/SOLES OF FEET
 - c. Tertiary: NEUROSYPHILIS
 - i. Benign lesions of skin, bone, viscera (Gumma) ~3 -10 yrs
 - ii. Tabes Dorsalis

D. Testing/ Diagnosis

1. *Microscopic bacterial identification*: A surface scraping from the ulcer or chancre
2. *Laboratory testing*:
 - a. EIA- New standard with reverse sequencing
 - b. Role of : VDRL or RPR - To screen and follow
 - c. TPHA = Treponemal pallidum hemagglutination assay
 - c. FTA-ABS (Fluorescent Treponemal Antibody-Absorption)
 - i. May result in a cross-reactivity/false-positive with Lyme
 - ii. False (+) may occur in females with Lupus (SLE)

E. Syphilis Treatment:

1. Penicillin G IM, usually administered by injection.
2. Or, Tetracycline 500mg QID PO x 15 or Erythromycin