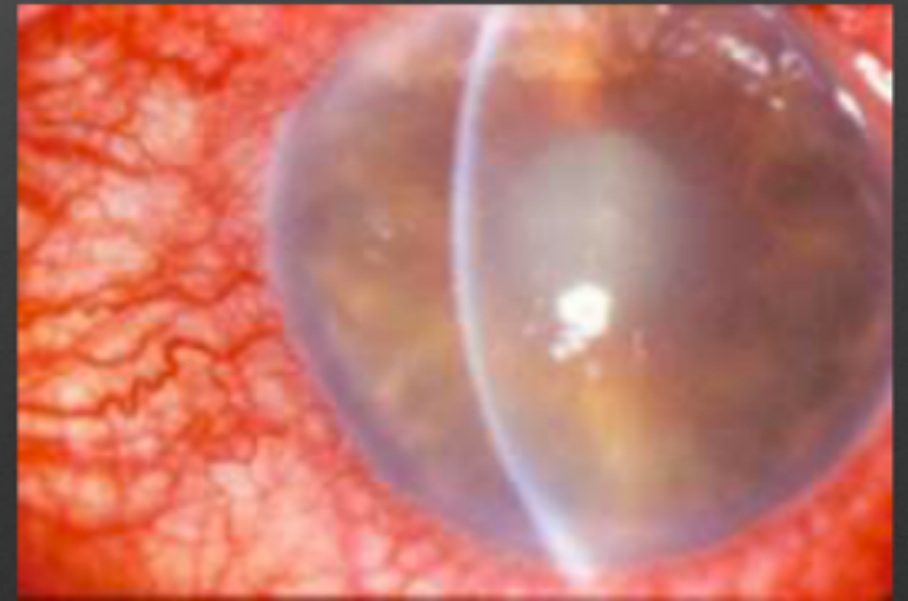
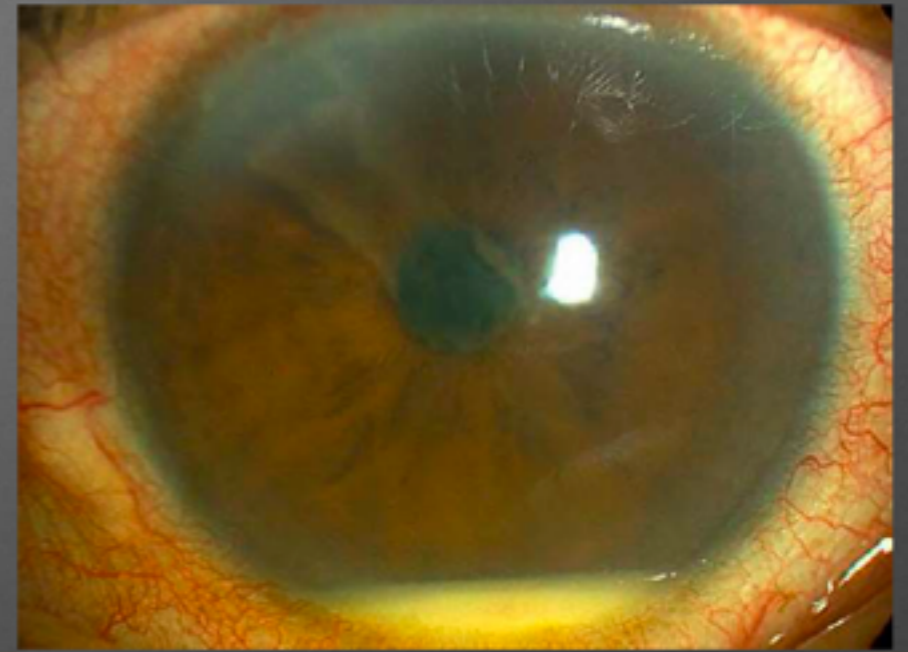
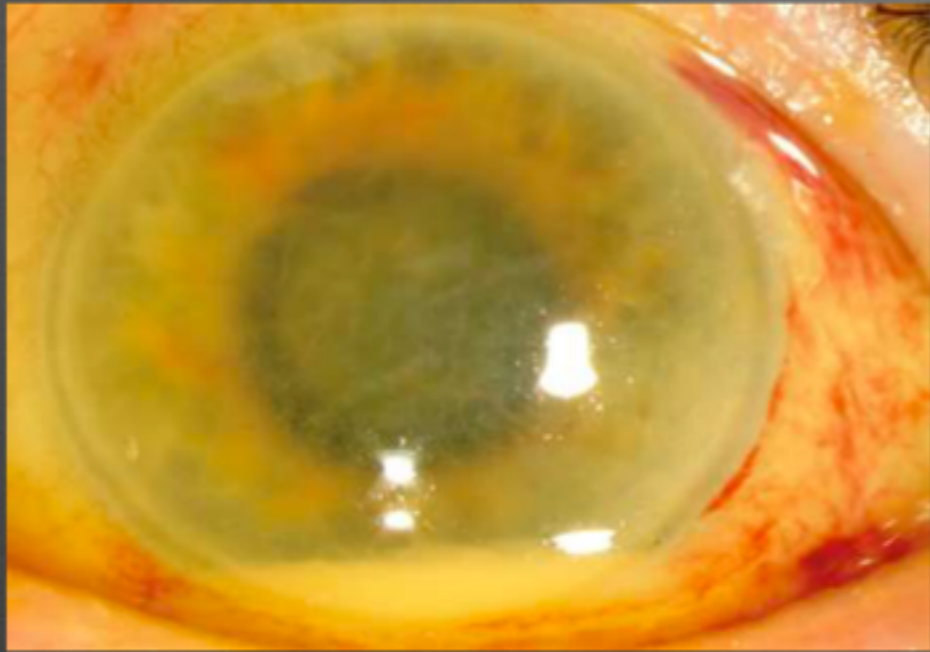


Endophthalmitis and Cataract Surgery

Alan C. Parent, MD, FACS



- DDX :
 - endophthalmitis
 - TASS
 - lens-induced uveitis
 - masquerade syndrome (eg lymphoma)
 - VH

TASS or Endophthalmitis

- can appear almost/ exactly the same
- but treatment are NOT the same
- so do the prognosis
 - needs early diagnosis/ treatment
 - distinguishing between the 2 conditions is an important factor.

Endophthalmitis

- incidence after cataract Sx 0.08-0.3% (1/1,250 - 1/300)

- Aaberg Jr TM et al, Ophthalmology 1998
- Taban M et al, Arch Ophthalmol 2005

- risks :

- blepharitis
- temporal sutureless CCI, poor wound construction
- topical anes.

- Cooper BA, Am J Ophthalmol 2003
- Nagaki Y et al, J Cataract Refract Surg 2003.

- Germs

- 94% of cultured confirmed cases = Gram Positive
- 70% = coagulase-negative Staph

- Endophthalmitis Vitrectomy Study Group



Endophthalmitis : Classic symptoms

- pain, blurred, floaters, light sensitive
- usually start on 4th-7th day after Sx
- some can start on 1st-2nd day after Sx
- note : 25% do not report pain on early days



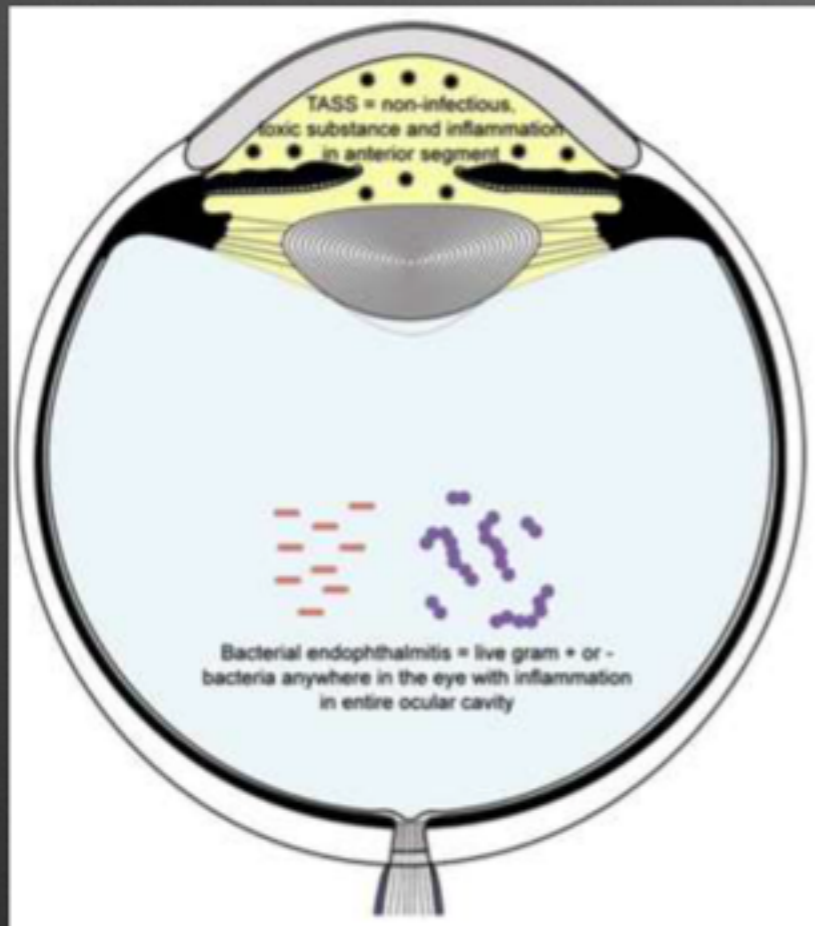
Endophthalmitis : Classic signs

- lid swelling
- conj injection/ chemosis
- purulent/ watery discharge
- corneal edema
- AC cell/ hypopyon
- vit cell, retina inflam./ vasculitis



TASS :

Toxic Anterior Segment Syndrome



- non-infectious **acute post op.** AS inflam.
- cause : **non-infectious substance(s)** enters the AS
- result : **toxic damage** to intra-ocular tissue
 - **mostly corneal endothelium**
- no racial/ age/ sex predilection

TASS : classic signs

- early postop inflammation, limited to AS
 - typically quite severe
 - +/- hypopyon formation
 - +/- fibrin in AC/ iris surface/ IOL
 - IOP : low-normal
- diffuse limbus-to-limbus corneal edema
 - (widespread endothelial damage)
- no/ few reaction in anterior vitreous
- gram stain and culture negative



TASS :

Potential Causes



- 1. issues with cleaning and sterilization
- 2. intraocular medication/ solution
- 3. drops and ointments

- Cutler Peck CM et al. J Cataract Refract Surg 2010
- Mamalis N et al. J Cataract Refract Surg 2010
- David C et al. Eyeworld 2014

TASS vs Endophthalmitis

	TASS	ENDOPHTHALMITIS
timing	the day after Sx , 12-48 hrs	usually >2d after Sx commonly 4-7 days
pain	none-mild-moderate (unless v. high IOP)	more (25% no pain)
discharge	watery	purulent
conj and lid reaction	less	more
corneal edema	limbus-to-limbus edema	localized/ segmental

David B et al. Advanced Ocular Care 2011
 Mamalis N. J Cataract Refract Surg 2006
 David C et al. Eyeworld 2014

TASS vs Endophthalmitis

	TASS	ENDOPHTHALMITIS
AC	fibrin, occasional hypopyon	hypopyon
iris +/-	fixed dilated, often c spotty or diffuse areas of atrophy	SRTL
IOP	normal, high is more suggestive	low-normal
vitreous	clear	vitritis, VH


David B et al. Advanced Ocular Care 2011
 Mamalis N. J Cataract Refract Surg 2006
 David C et al. Eyeworld 2014

Endophthalmitis Prevention

- Preoperative Hygiene
- Proper wound construction
- Povidone-iodine (proven)
- Perioperative antibiotics (never proven)
- Intracameral antibiotics (ESCRS)

ESCRS study of prophylaxis of postoperative endophthalmitis after cataract surgery: Preliminary report of principal results from a European multicenter study.

Barry P¹, Seal DV, Gettinby G, Lees F, Peterson M, Revie CW; ESCRS Endophthalmitis Study Group.

 **Author information**

Erratum in

J Cataract Refract Surg. 2006 May;32(5):709.

- September 2003 - January 2006
- Intracameral cefuroxime/ perioperative Levoquin
- 13,698 patients
- Results: incidence of endophthalmitis 5x higher in patients who did NOT receive intracameral cefuroxime (95% CI, P=.008)

Eye Surgery Center of Michigan Study

- Intracameral Vancomycin 2010-present
- 29,106 consecutive surgeries
- 2 cases of endophthalmitis
- NO cases of HORV

Incidence of Endophthalmitis

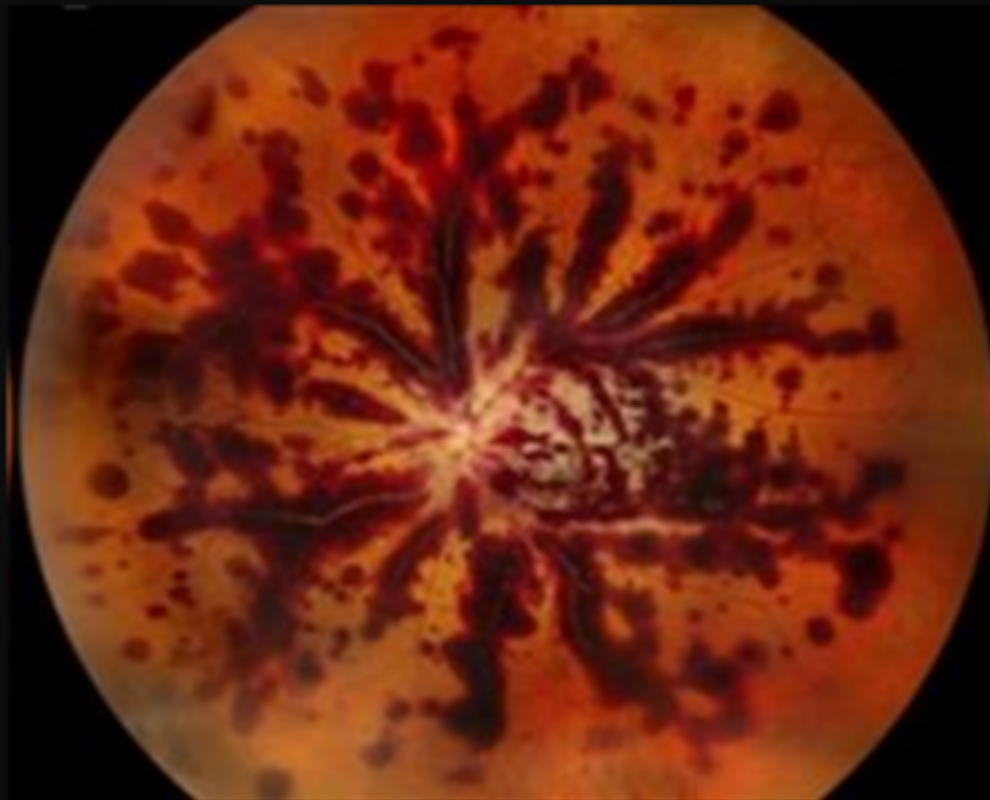
- .1% (1/1,000) EVS study
- .07% (1/1,367) ESCRS study
- .0069% (1/14,508) ESCM study

THATS 1/10th!!!!!!!

Postoperative Hemorrhagic Occlusive Retinal Vasculitis

Expanding the Clinical Spectrum and Possible Association with Vancomycin

Presented in part at: Retina Society Annual Meeting, Philadelphia, PA September 2014; and American Academy of Ophthalmology Annual Meeting, Chicago, IL October 2014.



HORV

- Hemorrhagic Occlusive Retinal Vasculitis
- Type 3 hypersensitivity reaction to Vancomycin
- But at what dose???????

HORV

- All reported cases used dose of 1mg Vancomycin
- ESCM using .1mg (10 fold less dose)
- Mackool study: 40 surgeons, 80,000 consecutive surgeries, .1mg Vancomycin, ZERO cases of HORV

Conclusions

- Endophthalmitis = Bad News
- Very preventable (ESCM 1/10 published incidence)
- HORV not associated with LOW dose (.1mg) intracameral Vancomycin

Thank you!