

Grand Rounds



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Subjective

- CC: light sensitivity and follow-up from seeing ophthalmologist in Hong Kong
- HPI: 26yo Asian female who stated that while in Hong Kong, a bug flew into eye causing a foreign body sensation that would not resolve. She visited an ophthalmologist there and was started on fluoromethalone drops, which she had been taking for 3 weeks at the time of presentation. She still complained of mild foreign body sensation and photosensitivity. She also remembered a recent “cold” from which she still had rhinorrhea.

Subjective

- POH: high myopia, wears contact lenses
- PMH: asthma
- Family History: hypertension, thyroid carcinoma
- Social history: non-contributory
- ROS: non-contributory except per HPI
- Medications/Allergies: none

Objective

	OD	OS
<u>BCVA:</u>	20/20	20/20
<u>M</u>	-6.00 sph -6.25 +1.00 x100	
<u>Pupils:</u>	4 → 3	4 → 3
<u>IOP:</u>	10	10
<u>EOM:</u>	Full	Full

Objective

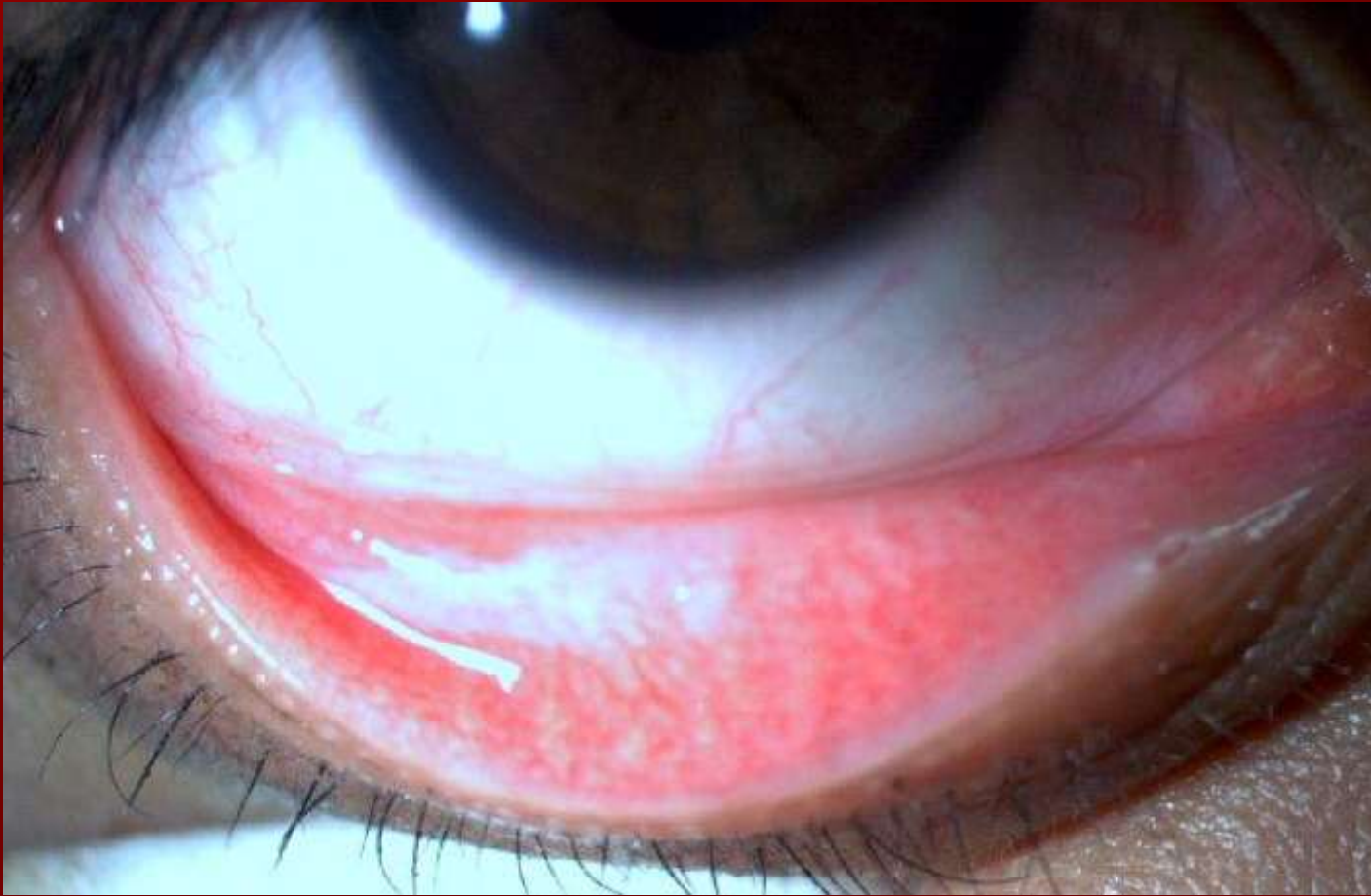
	OD	OS
Ext	wnl	wnl
L/L	wnl	wnl
Conj	very mild injection with mild follicular formation OU	
K	Multiple small circular subepithelial infiltrates OU (OS>OD)	
AC	no cell or flare	same
Iris	wnl	wnl
Lens	wnl	wnl
Vit	wnl	wnl
DFE	wnl	wnl

Objective



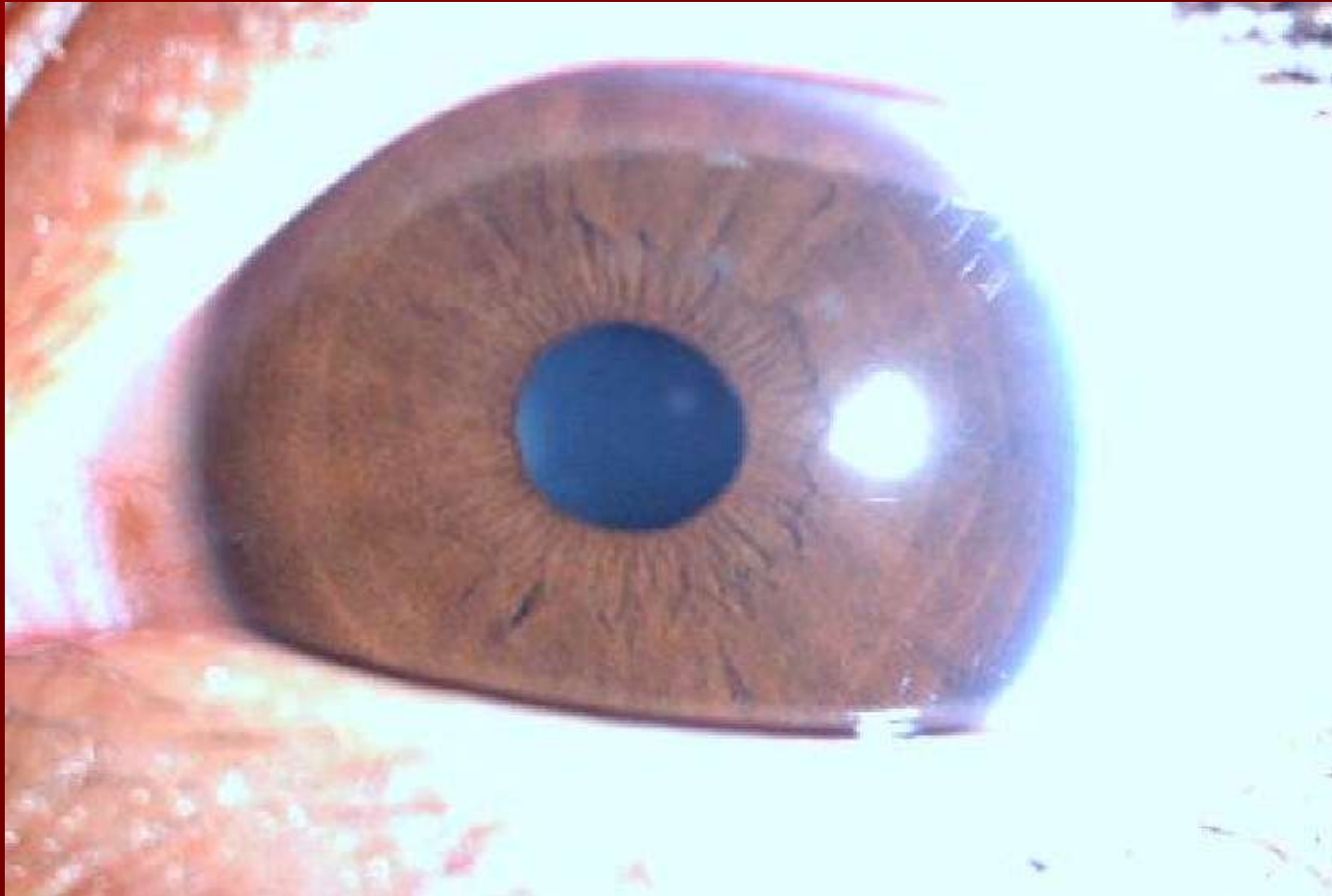
Photo taken by patient during trip to Hong Kong.

Objective



Slit lamp exam of right inferior conjunctiva showing very mild erythema and clearing follicle formation.

Objective



Slit lamp exam (diffuse beam) of left eye showing several areas of corneal haze.

Objective



Slit lamp exam of left eye showing subepithelial infiltrates.

Assessment / Differential Dx

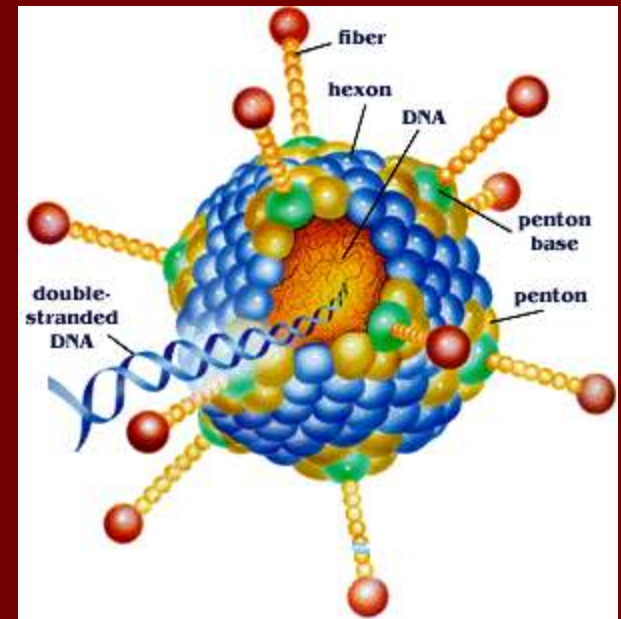
- 26yo Asian female with recent upper respiratory tract infection, foreign body sensation in both eyes, photosensitivity, follicular conjunctivitis, and multiple subepithelial infiltrates OU.
- DDX
 - Epidemic Keratoconjunctivitis
 - Follicular conjunctivitis
 - Pharyngoconjunctival fever
 - Allergic conjunctivitis
 - Bacterial conjunctivitis
 - Contact lens complication
 - Corneal abrasion with recurrent erosion

Course

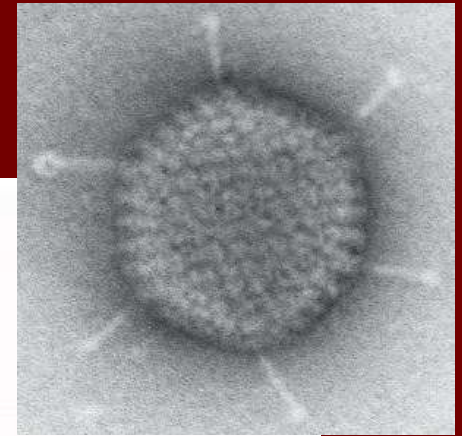
- Pt determined to have classic EKC.
- She was asked to begin to taper her FML and to f/u in 1 month.
- On f/u, she stated she had stopped the FML after 2 more weeks of use, and was “feeling much better with less stinging.”
- BCVA was still 20/20 OU, and several subepithelial infiltrates remained.

Adenoviruses

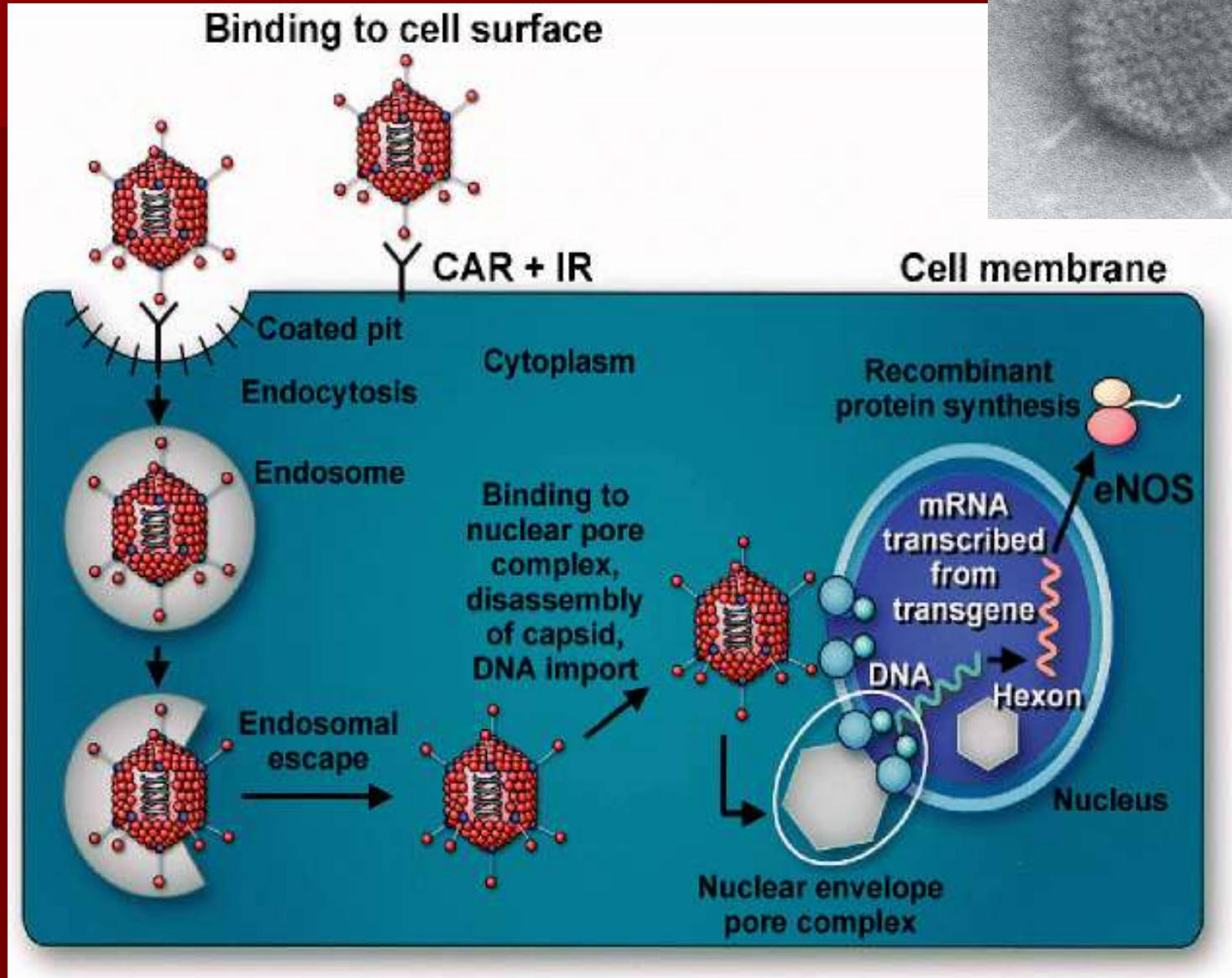
- 54 serotypes with 6 subgroups (A-F)
- Icosahedron shape with projecting capsid proteins
- Discovered in 1953 from adenoids
- Causes:
 - Upper respiratory tract infections
 - Ocular surface infections
 - Meningoencephalitis
 - Acute hemorrhagic cystitis in young boys
 - Diarrhea in children
 - Respiratory and hepatic failure in immunocompromised hosts



Adenoviruses



(3)



(4)

Adenoviruses

- Transmission occurs mainly in environments causing crowding → schools, nursing homes, military, etc.
- Can also be transmitted by contaminated equipment in physicians' offices ⁽⁵⁾
- Usually present as 1 of 3 classic syndromes:
 1. Simple follicular conjunctivitis
 - a. Self limited and not assoc with systemic disease
 - b. Resolves before pts seek care
 2. Pharyngoconjunctival fever
 - a. fever, headache, pharyngitis, follicular conjunctivitis, and preauricular adenopathy
 - b. Similar to flu-like symptoms
 3. Epidemic keratoconjunctivitis (EKC, usually subgroup D, serotypes 8, 19, and 37)

Epidemic Keratoconjunctivitis

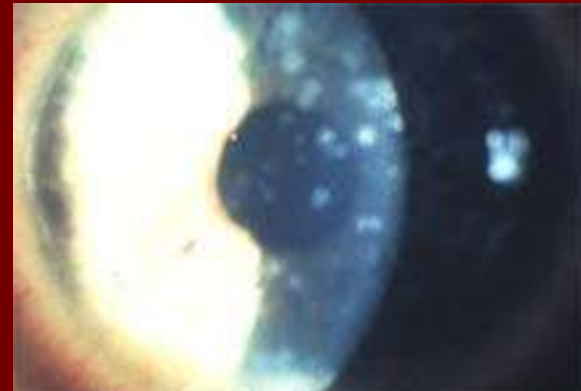
■ Symptoms

- Tearing
- Photosensitivity
- Foreign body sensation
- May be preceded by URI

■ Signs

- Bilateral involvement
- Follicular conjunctivitis
- Punctate epithelial keratitis followed by subepithelial infiltrates
- Subconjunctival hemorrhages
- Pseudo- or true membranes may form in the conjunctiva
- Prominent preauricular adenopathy

Epidemic Keratoconjunctivitis



Epidemic Keratoconjunctivitis

■ Course

- Viral shedding lasts for 10-14 days
- 7-14 days after onset of symptoms, multifocal subepithelial infiltrates appear from the cytokine driven ^(7,8) immune response against adenoviral replication within the keratocytes in the superficial corneal stroma
- Photophobia and reduced vision can last months to years.
- Other complications include scarring and symblepharon formation from membranes that develop, which contain leukocytes, angiogenic factors, and proliferating endothelial cells⁽⁹⁾

Epidemic Keratoconjunctivitis

■ Diagnosis

- Mainly clinical diagnosis but can be important in healthcare setting to control spread of infection.⁽¹⁰⁾
- PCR, Rapid immunodetection assay, and paired serologic titers exist if needed

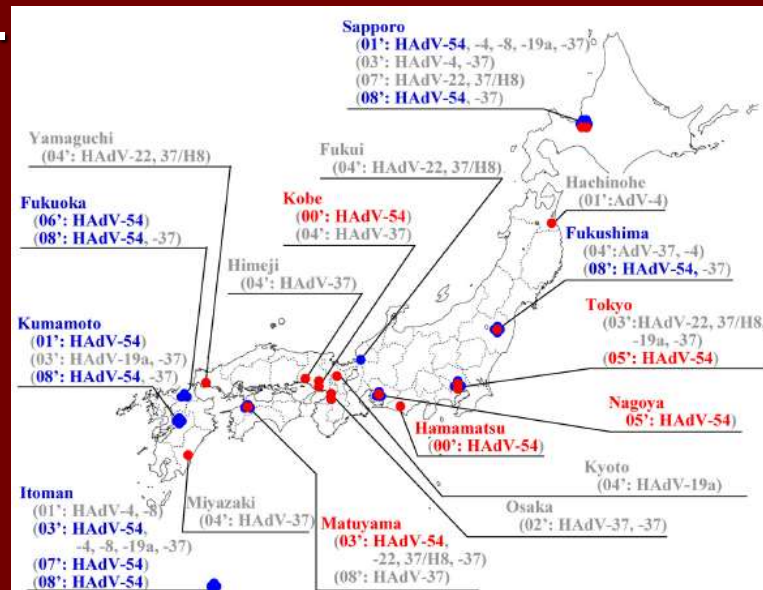
■ Management

- Supportive – cool compresses, artificial tears, topical antibiotics if signs of bacterial superinfection occur
- Conjunctival membranes – need to be removed q2-3 days
- Topical steroids may reduce photophobia, improve vision from infiltrates, and prevent scarring but prolong viral shedding and worsen HSV infection, so wait until infiltrates or membranes begin to form. Also difficult to wean.
- Personal hygiene is important (including taking sick days).

Epidemic Keratoconjunctivitis

■ Serotype 54 (11,12)

- Discovered in 2000 in Kobe, Japan
- Very similar to serotype 8, which was cause of confusion from 2003-2005.
- 343 isolates of EKC in Japan were obtained from 2000-2008, roughly 1/3 of nosocomial and isolated outbreaks were due to this serotype.



Thank you.

References

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