A CASE OF MISTAKEN BLEPHARITIS IDENTITY: STAPH OR DEMODEX?

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INTRODUCTION

- Anterior blepharitis is a common cause of ocular discomfort caused by an infectious agent (bacteria, virus, parasite).
- The most common is staphylococcus aureus (SA) blepharitis observed as crusty collarettes along the lashes and typically resolved with lid scrubs and antibiotic therapy.
- When patients are unresponsive to treatment, one must look for other potential causes and a clue may come from the type and location of the debris observed on the lashes.
- This report describes 3 cases presenting with ocular discomfort and dry eye (DE) and signs of anterior blepharitis which were all secondary to Demodex infestation.
- The case provides an overview of the Demodex mite, its clinical presentation, examination technique and tea tree oil (TTO)-based treatment options.
- It has been reported that Demodex may be more common than we think and clinicians should consider it in their differential diagnosis of any ocular discomfort.

CASE 1

- A 23 yr old female presented with unilateral mild red eye and a history of recurrent blepharitis. Her symptoms included discomfort, dry eye and mild itching (some during allergy season).
- No secretions, no photophobia, and no effect on vision were noted.
- TBU was normal (9-10 sec) and a mild SPK (gr 1) was present adjacent to the upper lid margin.
- Sectoral conjunctivitis was noted with mild blepharitis. A higher magnification revealed CD-type debris at the base of the lashes.
- A biopsy was done to rule out conjunctival dysplasia.
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CASE 2

- A 75 yr old male presented with chronic DE with moderate symptoms (OSDI 18/100), fluctuating vision while reading and light sensitivity. Further questioning revealed mild itching along the lid margin.
- Tear lubricants (Gentell gel and Syntane gel) provided palliative relief.
- A DE work-up revealed a normal osmolarity (OD 310, OS 299 mOsm/L), adequate tear volume, mild of SPK (gr 1) marked MGD (gr 4), TBU 8-9 sec, and anterior blepharitis (gr 2).
- Therapy for the MGD included lipid-based lubricants (Syntane BALANCE, ALCON and LPSOIC ung. B=+L), warm compresses and ocular massage.
- Therapy included TTO-based lid scrubs (TheraLID, Theradent and CURADERM).
- FU revealed an improvement in symptoms (OSDI 10/100) and MGD (gr 3).
- Patient education about blepharitis (ant vs post) was discussed with supplementation of Omega 3 for long term improvement of the MGD.

CASE 3

- A 30 yr old female with Lupus and acne rosacea consulted for chronic DE and severe ocular discomfort (OSDI 67.5/100) with fluctuating vision affecting TV viewing and reading.
- Unpreserved tear lubricants (BIONTEARS, ALCON) provided palliative relief. Antibiotics and lid scrubs were ineffective at relieving her symptoms.
- A DE work-up revealed a shortened TBUT (4-5 sec), a hyperosmolar tear film (OD 322, OS 320 mOsm/L), mild interpalpebral SPK (gr 1), mild MGD (gr 1), ULMS (gr 3) and anterior blepharitis (gr 2).
- A closer look at the blepharitis revealed that the deposits surrounding the base of the lashes were clear and gelatinous, similar to a CD.
- Further probing revealed mild itching along the lid margin, especially in the morning.
- Therapy included TTO-based lid scrubs (TheraLID, Theradent) with mild improvement (OSDI 65/100).
- FU visits added lid scrubs with 4-terpinol (CURADERM, Bright Optical, bol X 3x/wk,qd X 2x/wks) which significantly improved her symptoms (OSDI 25/100).
- The patient reports periods of remission and exacerbation whereby she adjusts the CLIRADEX use.
- Unpreserved artificial tears continue to provide additional relief for her DE.
- Therapy included TTO-based lid scrubs (TheraLID, Theradent) with mild improvement (OSDI 65/100).

DISCUSSION

- Behavioral classification:
  - Staphylococcus:
    - Kingdom: Bacteria
    - Phylum: Firmicutes
    - Class: Bacillales
    - Order: Bacillus
    - Family: Staphylococcaceae
    - Genus: Staphylococcus
    - Species: S. aureus
    - Specie: Staphylococcus aureus
  - Demodex:
    - Genus: Demodicidae
    - Family: Demodex
    - Specie: D. folliculorum

- FROM THE GREEK WORD
  - Staphylococcus: Staph - Kogko - granules
  - Demodex: Deme - ox - ox - eidos

- OCULAR COMFORT

- Demodex infestation: Staphylococcus: Staph - Kogko - granules
- Demodex folliculorum: Demodex - folliculorum

- Debris: Dry, colonized fluid affixed to the lashes and along the lash with growth.
- Clear, waxy debris surrounding the base of the lash (syndrome dandruff/CD)

- Lid margin changes; Tylosis, Erythema, thickening, MGD.
- Acne rosacea, MGD

- Treatment: Gem + antibacterial
- Demodex: Distilled TTO from the Australian native plant Melaleuca alternifolia, preferably with Terpinen-4-ol (or terpinol) (active ingredient against Demodex).

- Demodex infestation:
  - Staphylococcus: Staph - Kogko - granules
  - Demodex folliculorum: Demodex - folliculorum

- Demodex: A comonal mite and has been reported to be in 100% of people >30 yr old. It may be difficult to eradicate all mites (as each produces 12-15 eggs), however infestation may be limited with TTO-based treatments and improving overall ocular comfort.
- Whole TTO is quite irritating to the skin and eyes and needs to be diluted. The most active ingredient in TTO, against Demodex, is Terpinen-4-ol.
- Ocular discomfort is the leading cause of CL dropouts, so addressing it is primary in keeping patients comfortably in lens wear.

CONCLUSION

- Many clinicians equate anterior blepharitis with an over-population of staphylococcus and systematically recommend lid hygiene and topical antibiotics, which are ineffective with Demodex.
- Close attention to the type (collarette vs DC) and location (base vs along the lash) of the debris, along with symptoms (itching along the lid margin vs yellow secretions) should assist the clinician into making a DDx of the cause of the anterior blepharitis (staph vs Demodex).
- Anterior blepharitis is a common cause of ocular discomfort caused by an infectious agent (bacteria, virus, parasite).
- Close attention to the type (collarette vs DC) and location (base vs along the lash) of the debris, along with symptoms (itching along the lid margin vs yellow secretions) should assist the clinician into making a DDx of the cause of the anterior blepharitis (staph vs Demodex).
- Demodex: A comonal mite and has been reported to be in 100% of people >30 yr old. It may be difficult to eradicate all mites (as each produces 12-15 eggs), however infestation may be limited with TTO-based treatments and improving overall ocular comfort.
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REFERENCES