FEATURE ARTICLE: Corneal Melts: A nightmare that both Frosty the Snowman and optometrists share

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As winter grows near, you may be looking forward to a fun-filled season of winter sports and snowman making, yet even in the dead of winter warm weather may move in and melt your fun. The rare corneal melt showing up at your office may likewise put a damper on your day. A corneal melt is a rare yet potentially blinding condition that manifests itself through rapid and severe corneal stromal thinning. Corneal melts can occur in both the central and peripheral cornea, with central melts tending to be infectious while peripheral melts are often sterile. Differentiating between the two types can sometimes be difficult, yet a misclassification can lead to devastating results.

The following are the key signs that can help you identify corneal melts:

- Rapid corneal stromal thinning
- Corneal edema
- History of systemic vasculitis

The etiology of corneal melts is poorly understood, yet they have been associated with the following conditions:

- Ocular surgery (e.g., cataract surgery, LASIK, Intacs ring segments, pterygium removal, DSEK)
- Systemic autoimmune diseases (e.g., Rheumatoid arthritis [most common], Sjögren syndrome, Wegener granulomatosis)
- Topical medications (e.g., Bromfenac, Nepafenac)
- Infectious keratitis (e.g., atypical mycobacteria, Streptococcus pneumoniae)

Case reports most commonly site underlying autoimmune disease and recent ocular surgery as the primary instigators of corneal melts, and treating the underlying autoimmune disease (e.g., with systemic steroids) or removing the instigating surgical complication/device (e.g., Intacs) is the preferred treatment course. While many corneal melts can be halted and permanent damage can often be avoided, lasting vision loss, corneal perforations, and eye loss from endophthalmitis may occur in advanced cases. Therefore, recognizing this condition early and providing a swift referral can save your patient’s vision and your peace of mind.

References:
Dr. Pucker received his doctor of optometry and Master of Science degrees from The Ohio State University. He is a Fellow of the American Academy of Optometry, and he is currently a Senior Research Associate and pursuing a Ph.D. in vision science at The Ohio State University. Dr. Pucker’s research interests include the tear film, ocular inflammation, myopia development, and contact lenses.

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