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Keeping an eye on atopic dermatitis

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Warren R. Heymann, MD

April 12, 2018

Dirk Elston, MD

Editor, Journal of the American Academy of Dermatology

Dear Dirk:

I am submitting the first of the monthly "A Clinician's Perspective" entitled "Keeping an Eye on Atopic Dermatitis" commenting on the article by Jeon et al, "Atopic dermatitis is not a risk factor for keratoconus: A population-based cohort study." I hope that you and the readership find it worthwhile.

Thank you again for this outstanding opportunity. Please let me know if you have any questions or comments.

With warmest regards,

Sincerely,

Warren

Keeping an Eye on Atopic Dermatitis

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In this issue, Jeon et al performed a population-based study of atopic dermatitis (AD) composed of two analyses (1 – patients < 20 years old with AD compared to controls, assessing the incidence of newly diagnosed keratoconus; 2 – a nested case-control study of AD patients < 30 years old with keratoconus compared to a control population). The authors concluded that AD in young Korean patients is not associated with a risk of keratoconus, acknowledging that this ethnic study may not be applicable to other populations. (1)

Ocular disease in AD may manifest as conjunctivitis, a potential predisposition to keratoconus, and anterior subcapsular cataracts. Glaucoma, posterior subcapsular cataracts, and, and infectious keratoconjunctivitis may complicate therapy with corticosteroids; dupilumab has been associated with conjunctivitis. A significant and disease severity–dependent increased risk of development of conjunctivitis, keratitis, and keratoconus was demonstrated in adult Danes. (2)

Conjunctivitis in the general population is usually allergic conjunctivitis (AC); it is more common in atopic individuals and can present in up to 56% of these patients. The most serious of form of conjunctivitis is allergic keratoconjunctivitis (AKC) because of corneal involvement. AKC occurs in adults who are predisposed to the atopic phenotype and can lead to eyelid tightening, loss of eyelashes, cataracts, and a higher incidence of keratoconus and other sequelae (conjunctival scarring, eyelid thickening, ptosis, corneal vascularization, ulceration, thinning, infection, and vision loss). (3)

Keratoconus manifests as a characteristic cone-like steepening of the cornea associated with irregular stromal thinning, resulting in a cone-like protrusion and significant loss of vision. Optical effects include a variable reduction in visual acuity, image distortion, and increased sensitivity to light. Keratoconus may remain subclinical, simply being classified as a slightly asymmetric oblique astigmatism. Keratoconus may occur at puberty (late teens for men and early twenties for women) and may progress until the third to fourth decade, beyond which there rarely any progression.

The etiology and pathogenesis of keratoconus are not known. Several associations have been identified, which include rigid gas permeable (RGP) contact lens wear, chronic eye rubbing, Down syndrome, atopic disease, Leber congenital amaurosis, connective tissue disease, tapetoretinal degeneration, and inheritance.

Treatment of keratoconus is based on severity, ranging from contact lenses in the mildest cases, to corneal collagen cross-linking, intra-corneal ring segments, and corneal transplants in the most severe cases. (4)

In a retrospective study 434 patients with keratoconus, utilizing Scheimpflug imaging (a rotating camera photographing corneal cross-sections illuminated by slit beams at different angles), it was demonstrated that those with an atopic syndrome (allergic asthma, atopic dermatitis, and/or allergic rhinitis), were significantly younger, but showed no topographical changes except in corneal densitometry compared with keratoconus patients without an atopic disease. This suggests that an atopic syndrome

may trigger an earlier presentation of keratoconus. (5)

Even if future studies confirm that the association keratoconus to atopic dermatitis is weaker than previously assumed, I will continue to recommend that atopic patients have routine ophthalmological assessments to detect any early findings and seek urgent evaluation in the presence of ocular symptoms.

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