CORNEAL HYDROPS ASSOCIATED WITH VERNAL CONJUNCTIVITIS AS A PRESENTING SIGN OF KERATOCONUS IN A CONGOLESE CHILD

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ABSTRACT

Purpose:
To report a case of unilateral corneal hydrops associated with vernal conjunctivitis as a presenting sign of keratoconus.

Method:
Case report. A 10-year-old girl with corneal hydrops of the left eye

Result:
Visual acuity in the affected eye was hand motions and slit-lamp examination revealed a left keratoconic, ectasic, edematous cornea with mild vernal conjunctivitis.

Conclusion:
Hereditary and environmental factors may contribute to the etiology of keratoconus and corneal hydrops.

RÉSUMÉ

But:
Rapporter un cas d'hydrops cornéen associé à une conjonctivite allergique comme signe de présentation de kératocône.

Méthode:
Observation clinique. Une fille de 10 ans avec hydrops cornéen gauche.

Résultat:
Chute de l'acuité visuelle à compter les doigts. L'examen à la lampe à fente montre une cornée ectasique et oedémateuse avec des signes modérés de conjonctivite allergique.

Conclusion:
Des facteurs héréditaires et environnementaux peuvent avoir contribué à l'apparition de l'hydrops cornéen.

MOTS-CLÉS

Hydrops cornéen. Kératocône. Conjonctivite allergique.

KEY-WORDS

Corneal hydrops. Keratoconus. Vernal conjunctivitis.

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INTRODUCTION

Acute hydrops results from a rupture of the endothelium and Descemet's membrane, allowing the corneal stroma to imbibe aqueous humor. The cornea becomes markedly thickened and opaque, resulting in a dramatic decrease in visual function (4,5,11,12). The patient may also complain of pain and redness in the affected eye (5). Acute corneal hydrops is a well-known complication that occurs in 2.6% to 2.8% of eyes with keratoconus (1,5,12,20). Corneal hydrops is more prevalent in young males (6,10,20) and in advanced keratoconus with poor visual acuity (20). Severe allergic ocular disorders (6,10) and excessive eye rubbing (2,7) also may contribute to the development of keratoconus and the occurrence of corneal hydrops (3,6,20).

We report hereby a patient from Central Africa with unilateral corneal hydrops associated with vernal conjunctivitis as a presenting sign of keratoconus.

CASE REPORT

A 10-year-old black Congolese girl with vernal conjunctivitis since the age of 8, was referred to our private clinic in April 26, 1999, for a sudden drop in vision in her left eye.

She underwent intermittent treatment for vernal conjunctivitis with dexamethasone three times daily, for two years before presentation. She did not have any other ocular or systemic disorder. There was no family history of keratoconus. Her parents denied habitual eye rubbing. Examination of the patient's parents and sisters did not show any ocular or systemic disease.

On clinical examination, the best-corrected visual acuity was R.E., 20/20 (with - 0.50 cyl/ 90°) and LE., hand motions. The external examination was normal and no afferent pupillary defect was present. Keratometry readings were 49.0 diopters (D) at 65° and 51.0 D at 155° in the right eye, and greater than 65.00 D with irregular mires in the left.

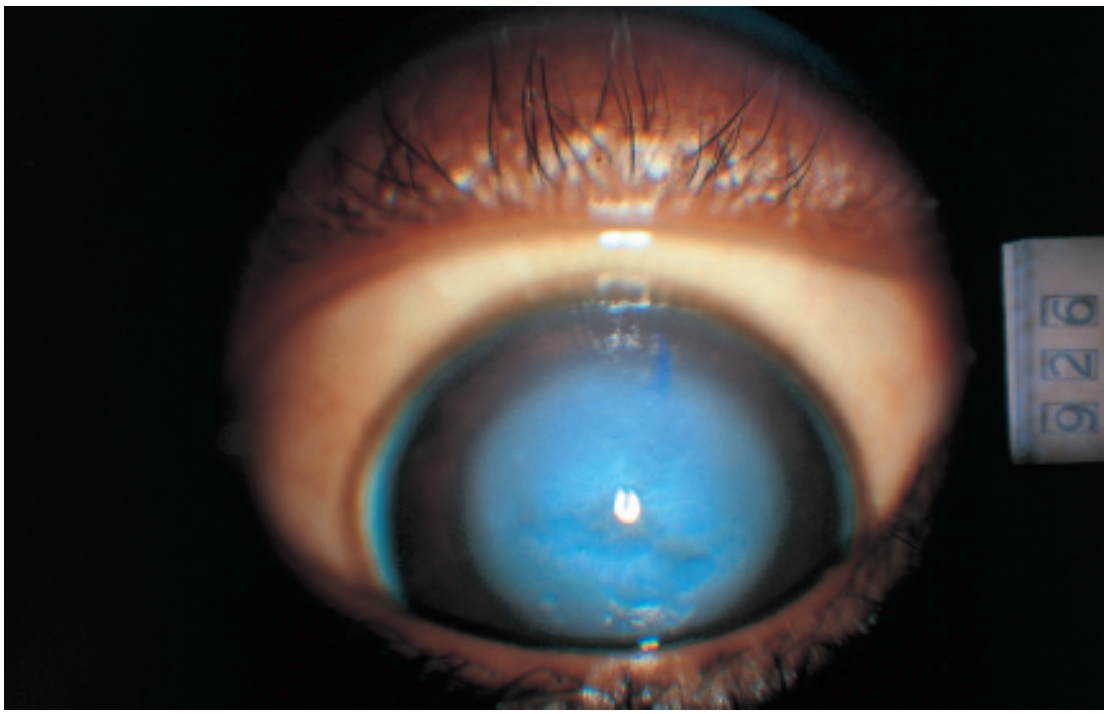
Slit lamp biomicroscopy revealed a left keratoconic, ectasic and edematous cornea (Fig 1 and 2). Papillae (< 1 mm) were found on the upper tarsal conjunctiva and the superior corneoscleral limbus showed multiple small round gelatinous masses and small superficial infiltrates in both eyes. The right cornea was normal on slit-lamp examination. Computer-assisted topographic analysis was unavailable. No other anterior or posterior segment disorders, and no history of previous eye or systemic diseases (except vernal conjunctivitis) were observed. The intraocular pressure was 12 mm Hg in both eyes. Unilateral advanced keratoconus with acute hydrops in the left eye, associated with vernal conjunctivitis was diagnosed.

Treatment of the left eye was started and consisted of topical hypertonic saline drops three times daily, cycloplegic drops (atropine) three times daily, terramycine ointment one time daily, oral acetazolamide 250 mg twice daily, and a shield to prevent perforation. Over an 8-week period, the edema gradually disappeared and the best-corrected visual acuity improved to counting fingers at 4 meters. Marked central corneal stromal scarring was present (Fig 3). No corneal neovascularization occurred. On March 26, 2000, the best-corrected visual acuity was L.E. counting fingers at 4.5 meters. The patient is currently waiting for penetrating keratoplasty in her left eye that however could not be performed in our country.

DISCUSSION

Hydrops is a common complication in keratoconus associated with vernal conjunctivitis or keratoconjunctivitis. Khan et al (10) reported six cases (12%) of acute hydrops in 48 subjects with vernal keratoconjunctivitis. In the study of Cameron (3), acute hydrops occurred in 16 (30%) of 53 keratoconus subjects with vernal conjunctivitis.

Corneal hydrops as presenting manifestation of keratoconus in children with vernal conjunctivitis has been described by Rehany and Rumelt (16) who reported three boys with corneal hydrops as presenting sign. Their age ranged from 5 to 11 years. They presented with corneal hy-



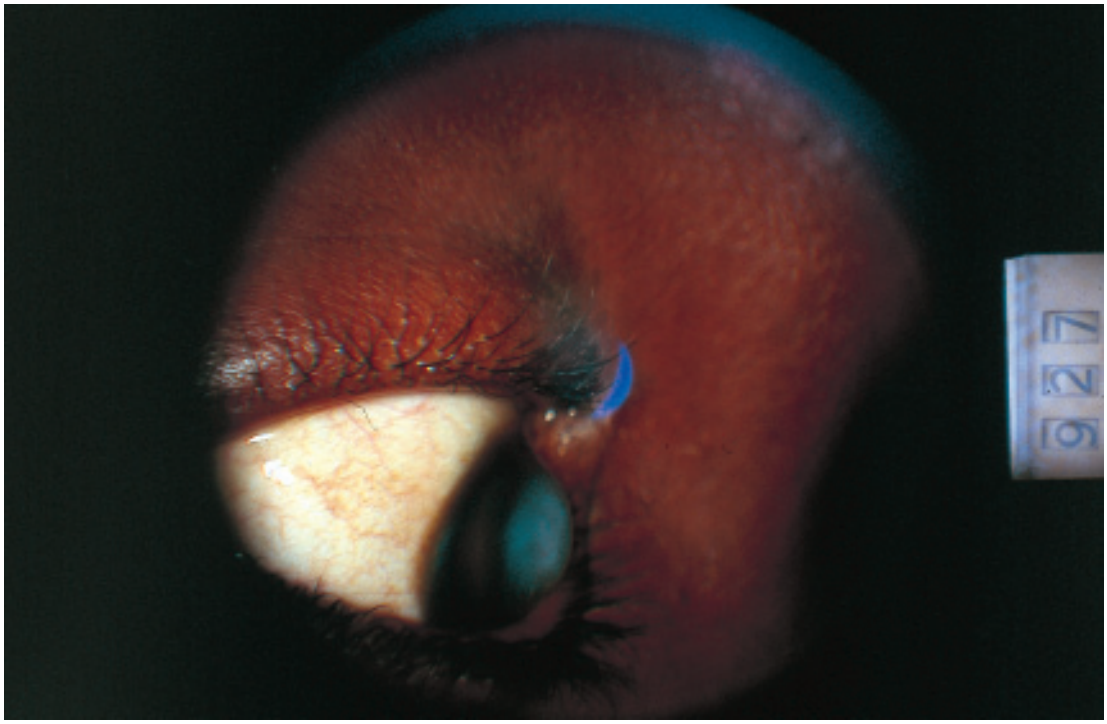


Fig 1 and 2. Acute hydrops as presenting sign of keratoconus in the left eye of a 10-year-old girl.

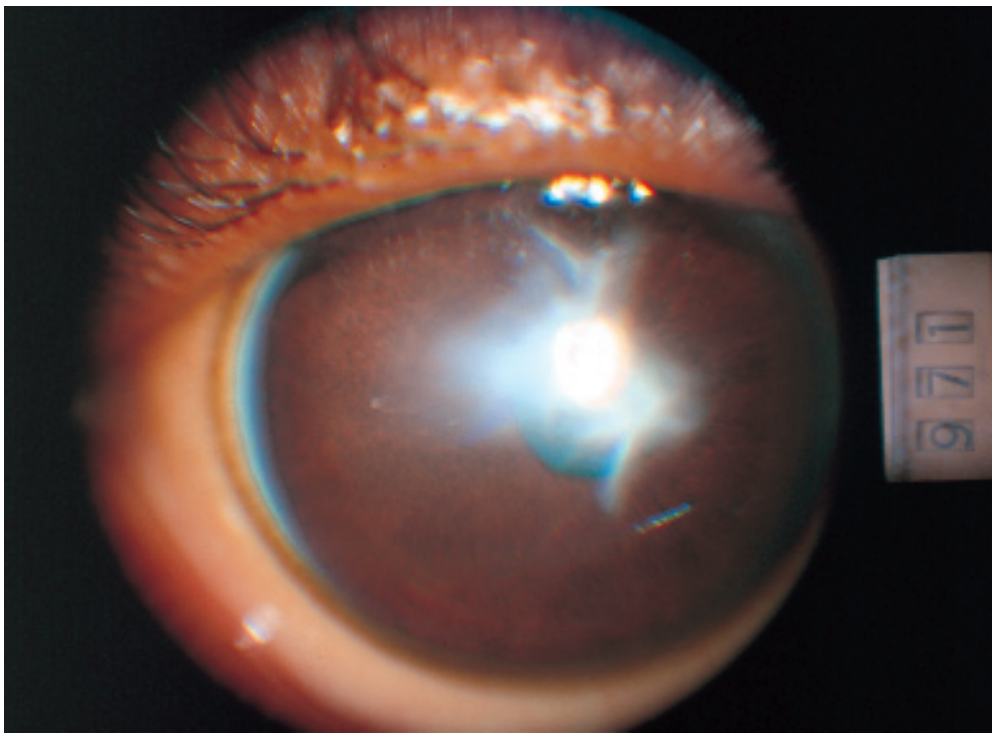


Fig 3. The left cornea shows a central corneal scar after an 8 week-period.

drops associated with mild vernal conjunctivitis. In two of them, vernal conjunctivitis was asymptomatic, and in one child the signs of vernal conjunctivitis appeared after the occurrence of hydrops. No other factors, including mechanical ones such as eye rubbing were noticed (16).

Our patient was a pre-adolescent female (10 years of age) with advanced keratoconus of the left eye associated with vernal conjunctivitis. The symptoms of vernal conjunctivitis were mild. Aside from vernal conjunctivitis, no other known associations including atopy were found. Her parents denied eye rubbing or a history of blunt ocular trauma. Rehany and Rumelt (16) suggested that keratoconus in association with vernal conjunctivitis might be more prevalent in areas of hot climate or close to the equator, although comparative studies have not yet been published. Our report is to the best of our knowledge the first reported case in Central Africa. We are unaware of any previous report of corneal hydrops as presenting sign of keratoconus in Africa and could find no reference to it in MEDLINE.

Treatment includes patching or a bandage contact lens, topical cycloplegic drops, topical hypertonic sodium chloride ointment and/or drops, and reassurance (5,19). In the majority of cases, the defect in Descemet's membrane will close within a 3- to 4-month period. The cornea deturgesces and clears to some degree. The corneal contour may flatten as a result of scarring, but the central opacity often limits the vision (5). Complications of acute corneal hydrops in keratoconus, other than the decrease in vision, are rare. Infectious keratitis (20), corneal neovascularization (17), glaucoma (9,14), corneal perforation (8,13,18) and fistulisation (15) have been described. In the patient described in this study, corneal edema resorbed with treatment without any other complication except scarring.

It is possible that hereditary and environmental factors (vernal conjunctivitis and/or a minimal ocular trauma) contributed to the development of keratoconus and the occurrence of corneal hydrops in our patient.

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