

A Rare Finding of an Early Anterior Polar Cataract after Burn Injury

**Fatine El Alami^{1*}, Rajaa Boubsir¹, Selma Chiguer¹, Adil Mchachi¹,
Laila Benhmidoune¹, Abderrahim Chakib¹, Rayad Rachid¹
and Mohamed Elbelhadji¹**

¹Adult Ophthalmology Department, 20 Août 1953 Hospital / Ibn Rochd University Hospital, Faculty of Medicine and Pharmacy, Hassan II University, Casablanca, Morocco.

Authors' contributions

This work was carried out in collaboration among all authors. Author FEA designed the study, wrote the first draft of the manuscript and managed the literature searches, Authors RB and SC managed the analyses of the study. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Ocular chemical injuries are true ophthalmic emergencies that require immediate and intensive intervention to minimize severe complications and profound visual loss [1]. They mostly affect young active men; causes include domestic accidents, workplace-related injuries and assaults [2]. Acid or base chemical burns can lead to serious lesions, of which corneal ulcer and limbal or conjunctival ischemia are the most common. However, several other complications have been described in the literature such as chronic dry eye, symblepharons and rarely cataracts. Our work reports a case of an early onset cataract after a chemical burn, this is an unusual complication especially by its type and its time of onset.

Keywords: Eye burn; chemical burn; cataract.

*Corresponding author: E-mail: fatineelalamii@gmail.com;

1. INTRODUCTION

Chemical injuries represent between 11.5%-22.1% of ocular traumas [3]. Often bilateral, they mostly affect male subjects, exposure occurs at home, work place or secondary to assault. [4-6]. Gravity damage depends on the nature and type of substance involved, as well as the length of time the substance was in contact with the eye [7]. The severity of the injury can range from mild disruption of the ocular surface to extensive damage of the deeper structures of the eye. Initial clinical exam is sometimes difficult to perform in the presence of burning symptoms. Nevertheless, it enables the physician to classify the injury, establish a prognosis, and most importantly, guide the therapeutic management. These remain the fear of the ophthalmologist because despite a treatment well behaved, they can lead to visual loss.

2. CLINICAL CASE

We represent a case of a 31-years-old patient, with no medical past history, admitted for painful

red eye with a bilateral decreased visual acuity due to an eye blast attack of sulfuric acid dating back to 3 hours prior to admission. The initial ophthalmological examination shows Bilateral burn stage 4 according to Hughes classification, the best-corrected visual acuity (BCVA) was 2/10 for the right eye and 4/10 for the left eye, with total desepithelialisation (Fig. 1), subtotal limbic ischemia and corneal edema for both eyes. Digital ocular tension was normal. Initial steps in management consisted of rinsing the eye and application of topical steroid, topical antibiotic, lubricant, autologous serum and cycloplegic eye drops. Oral vitamin C and tetracyclines were introduced. The patient also received autohemotherapy by conjunctival injections alternatively with autologous serum or whole blood twice a week associated with symblepharon ring.

Six days after admission, the patient presented bilateral anterior polar cataract, more diffuse on the left eye (Fig. 2), with some improvement on visual acuity going up to 6/10 on the right eye and 3/10 on the left eye.

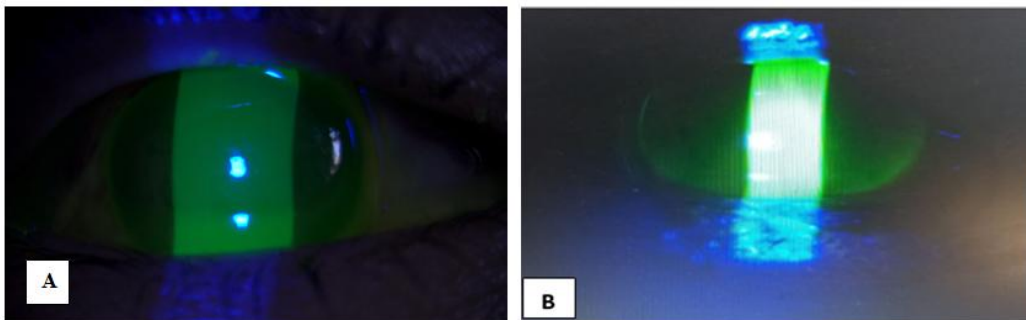


Fig. 1. Total desepithelialisation A. Right eye, B. Left eye

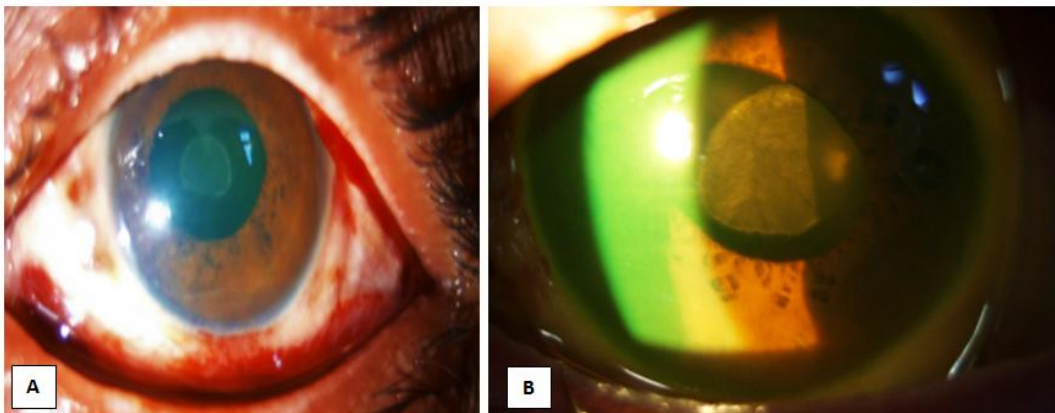


Fig. 2. Bilateral anterior polar cataract A. Right eye B. Left eye

3. DISCUSSION

Chemical burns by strong acids or bases are responsible for the most serious injuries. Associated with the destruction of limbal stem cells, they present as recurrent epithelial ulcerations, chronic stromal ulcers, deep stromal revascularization, conjunctival overlap, or even corneal perforation.

Cataract is a late onset and rare complication of eye burns, a study conducted in a Nigerian hospital [8] included 12 patients with chemical eye burns, founds a single patient who developed a cataract after 5 years.

Thus, not only cataract is an unusual complication of chemical eye burn, the early occurrence of such a lesion has never been reported. The majority of cataracts after ocular burns are found during electrical damage, Hashemi et al. [9] reports a case of bilateral intumescent cataract complicating electrical burn.

Concerning chemical burns, Awan et al. [10] reports the case of a posterior subcapsular cataract found 1 year after base burn, no case of cataract after acid burn has been described.

Several mechanisms are mentioned in order to explain this clouding of the lens, in particular the importance of corneal epithelial damage responsible for a greater exposure of the lens, the direct imbibition of the lens by the chemical products, the exposure of the lens fibers to irradiation and ultraviolet in electric burns as well as the inflammatory process accompanying the burn [11]

Actually, the clouding of the lens after eye burns are often either posterior or total capsular and sometimes intumescent. The anterior polar variety, which is found often in congenital cataracts, remains particular in this condition.

4. CONCLUSION

Ocular chemical injuries are associated with significant morbidity leading to vision loss and ocular surface damage. Cataract after ocular burns remains a late rare complication that can be sought during follow-up. The anterior polar cataract, which is often found in congenital cataracts, remains a peculiar site of opacification of the lens during ocular burns. Although early cataract is exceptional, its extraction allows an improvement in visual acuity especially in case of good restitution of the ocular surface.

CONSENT

As per University standard, written consent form patient was taken.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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