

The severe corneal abscess : report of 14 cases

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ABSTRACT

Aim: Present the clinical, microbiological and therapeutic corneal abscesses treated in the ophthalmology department of the Military Hospital of Rabat (Morocco). Methods: We conducted a retrospective study over 4 years in patients hospitalized at the military hospital in Rabat for severe corneal abscess. Results: Fourteen patients had a unilateral corneal abscess. The average age was 46.28 years. Was male predominance. The average period of consultation was 7 days. The average length of hospital stay was 19 days. A risk factor was identified in 78.5% of cases with contact lens wear (21.4%), the closed eye injury (21.4%) and eye surgery (14.2%). The removal of corneal helped isolate the causative organisms in 78.5%, coagulase negative Staphylococcus and Pseudomonas aeruginosa were the species most frequently encountered. All patients received broad-spectrum antibiotics after appropriate to the sensitivity. The anatomical evolution was good for 13 patients (92.8%), with one case of evisceration. Functional recovery after treatment was good for one patient and seven patients were scheduled for a cold corneal transplant. Discussion: The delay of consultation after the onset of functional symptoms, the importance of inflammation in the anterior chamber, the virulence of the organism and poor initial visual acuity was correlated with an unfavorable functional outcome. Conclusion: The corneal abscess is a serious disease of the cornea, an urgent therapeutic care and guided by microbiological diagnosis is a crucial factor for visual prognosis.

Key words: Corneal abscess, epidemiology, infectious agents, risk factors, treatment.

INTRODUCTION

Corneal abscess is a serious disease that represents a major cause of corneal blindness. Corneal perforation and endophthalmitis are the most serious complications and visual acuity is often diminished by central corneal opacity. The prevalence of this condition is increasing [1] because of the frequency of risk factors. The incidence varies geographically [2], for example 11 per 100,000 people per year in the United States to 799 per 100,000 people per year in Nepal. The main risk factors are eye injuries in developing countries and wearing contact lenses in industrialized countries; south of India 64.4% corneal abscesses are traumatic, the United States 52% were related to wearing contact lenses in the 80 [2]. The diagnosis is clinical. The diagnosis is essentially

microbiological. The therapeutic management must be early and oriented according to the etiological and appearance of abscesses. The objectives of this study were to define the epidemiological, clinical, bacteriological, therapeutic and evolutionary severe corneal abscesses supported in the ophthalmological Military hospital service in Rabat (Morocco) with review of the literature

MATERIALS AND METHOD

We conducted a retrospective study of patients hospitalized for corneal abscesses at the Military Hospital in Rabat on a decline of 4 years. The patient hospitalization criteria were an immune compromised state, poor adherence to treatment, diameter of higher abscess to 2 mm and a depth greater than 50% of the corneal thickness, a central location of the lesion, intraocular inflammation, a fortiori pre-perforation and perforation. The parameters studied were age, sex, and general ophthalmic history, date of admission, hospitalization period, the risk factors, the visual acuity, biomicroscopy, microbiological results corneal samples made, treatment introduced in the service and evolution. we have also taken into account the following clinical features: the lesion size, location (central, paracentral, peripheral), the existence of an intraocular inflammation. Visual acuity was assessed by Snellen. For each abscess corneal scraping was performed. The sampling is done by mechanical debridement deep abscesses without corneal anesthesia.

RESULT AND DISCUSSION

We counted 14 cases of severe corneal abscesses, over a 4 year period. The sex ratio was 1.8 (9 men 5 women). The mean age was 46.28 years, ranging from 16 years to 77 years. The achievement was always unilateral (50% right eye and 50% left eye) .The average time for consultation after onset of symptoms (redness, pain and decreased visual acuity) was 7days from 2 days to 14 days . 6 risk factors have been identified in 78.5% of cases (Table 1).

Table 1: Distribution of risk factors in our series

Risk factors	Number	Percentage
Contact lenses	3	21,4%
corneal trauma with a vegetable agent	3	21,4%
Cataract surgery	2	14,2%
Immunosuppression: chemotherapy for bladder cancer	1	7,1%
Pillowcase with corneal vascular appeal	1	7,1%
dry syndrome	1	7,1%
not find	3	21,4%

Clinical aspects:

The initial visual acuity, during hospitalization, was minimal between counting fingers very close and good light perception, only one case had no light perception (patient monitoring for neovascular glaucoma, cataract surgery for detachment and of the retina). At the initial examination, 13 were central abscess (Figure 1) and 1 had paracentral. There was no inflammatory reaction in the anterior

chamber in 6 cases (40%), a hypopyon was present in 6 cases (40%) and in 2 cases (20%) anterior chamber was unusable because of the large volume of abscess. the diameter of the abscess was between 2 and 5 mm in 3 cases (21.4%) and greater than 5 mm in 11cas (78.6%).



Figure 1: A large central abscess in the right eye.

Microbiological characteristics:

A germ was identified in 11 patients (78.6%). A multimicrobiennes achievement were found in 3 cases. Staphylococcus coagulase negative and Pseudomonas aeruginosa were the most common species, respectively 41.17% and 17.64% of the bacteria isolated. (Table 2)

Table 2: Distribution of germs in our series

Germs	Number	Percent
Coagulase negative staphylococcus	7	41,18%
Pseudomonas aeruginosa	3	17,66%
Staphylococcus aureus	1	5,88%
Haemophilus spp	1	5,88%
Neisseria spp	1	5,88%
Streptococcus spp	1	5,88%
Enterococcus spp	1	5,88%
Serratia marescens	1	5,88%
Candida albicans	1	5,88%

Treatment:

The therapeutic protocol in our service was based on a combination of hospital preparation of antibiotics topically: vancomycin 50 mg / ml and ceftazidime 20 mg / ml immediately prescribed in 9 patients (64.2%) in 5 cases (35.7%) treatment has appealed primarily to commercial antibiotics in case of non availability or pending the preparation of fortified eye drops, eye drops mainly fluoroquinolones (ciprofloxacin or ofloxacin), fusidic acid gel and aminoglycoside drops, antibiotic therapy was adjusted after susceptibility testing. For a patient who presented a multimicrobienne reached (Pseudomonas aeruginosa, Serratia marescens and Candida albicans) was added Amphotericin B diluted to 2.5 mg / ml eye drops to both fortifiés. Un corticosteroid treatment under the conjunctiva (1day / 2) secondarily was administered to 11 patients who presented with large abscess prélésionnel significant edema. A systemic antibiotics was prescribed in case of pre-perforation or perforation in 2 cases (14.2%) combines a third generation cephalosporin (cefotaxime 1grammes, 4 times / day intravenously) and quinolones (ofloxacin 400mg 2 times / day orally).

Adjuvant therapy was based on artificial tears, healing, treatment cycloplegic (atropine), hypotonic (beta-blocker) if the risk of perforation and an occlusive dressing.

Evolution :

The average length of hospital stay was 19 days (ranging from 7 days to 27 days), and the average follow-up was 6 months. 2 patients were lost to view. Complications were observed corneal perforation and three corneal neovascularization (Figure 2).

A disabling corneal pillowcase persisted in 13 cases (92.8%) (Figure 3).

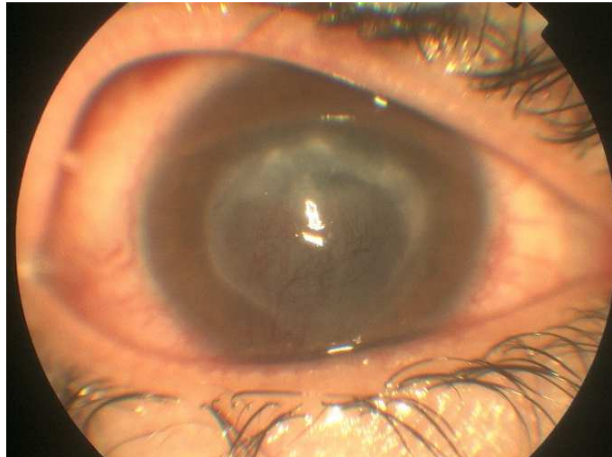


Figure 2: Pillowcase with central corneal corneal neovascularization in the right eye.

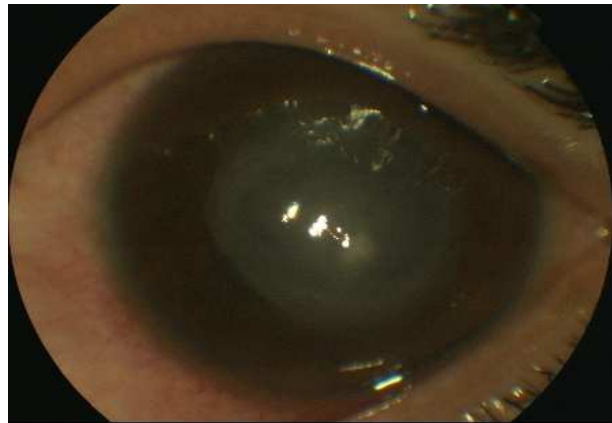


Figure 3: Taie debilitating central corneal.



Figure 4: Néphélie Paracentrale left eye

In one case light perception was negative before hospitalization due to a detached retina old. For a

patient, the infection had no detrimental effect on the visual function as it has left a small paracentral nephelion (Figure 4), and 12 patients visual acuity remained very low (perception positive light or even finger movements).

Seven patients were scheduled to cold for a cornea transplant. And one case of evisceration was programmed cold. (Table 3)

Table 3: Evolution and management of complications in our series.

Evolution	Number	Supported
Good (VA = 10/10)	1 case	-
Pillowcase with corneal neovascularization	3 case	-
Pillowcase and corneal perforation	1 cases	Evisceration
Taie corneal	9 cases	7 case Scheduled for corneal transplant
		2 cases Lost sight of

DISCUSSION

This study concerns the serious corneal abscesses requiring hospitalization, thus excluding cases of corneal abscesses have responded well to outpatient treatment. In our series corneal abscesses affect all ages, with a favorite adult whose age varies between 16 and 77 years, with a slight male predominance, 9 men 5 women (sex ratio = 1.8). These results are consistent with the literature [3]. The risk factors are identified in more than 9/10 (90%) in large series [4] (11/14 cases (78.5%) in our series). They vary from one region to another. Indeed, trauma oculaires represent the leading cause of corneal abscess in developing countries, 65.4% in South India [6] while wearing soft lenses is hydrophilic in industrialized countries [5] 52% in the US [7] and 26% in New Zealand. [8] In our series wearing contact lenses and the closed eye trauma, especially vegetative agent, represents the most common causes and eye surgery, especially cataract surgery, represents our third cause. Les incriminated other risk factors were the immunosuppression (bladder cancer to chemotherapy), corneal pillowcase with vascular appeal and dry eye syndrome.

Our isolation rate of bacteria was 78.5% comparable to that of the US series (53% to 73%) [2]. This is explained by the severity of the corneal removal and rapid transport to the laboratory with immediate inoculation adequate culture medium. The relative frequency of different bacteria responsible for corneal abscesses varies from one region to another. [8] The pseudomonas est the most bacterium implicated in Bangladesh (30%) [9] (1983), Taiwan (37.7%) [10] (2004) and France (29.2%) [2] (2006), Staphylococcus aureus en India (65%) [11] (1983), Streptococcus pneumoniae en south Africa (38%) [12] (1985). In our series the coagulase negative staphylococcus is the most offending germ (41.17%) compared to the results of the study Bourcier et al whose negative staphylococcus coagulase was isolated in one third of cases [13].

Treatment are posé on intensive antibiotic therapy topically including a loading dose and a dose of entretien. Puisqu'il is serious abscess was given as first line after corneal levy fortified eye drops, prepared extemporaneously, vancomycin 50mg (against gram-positive) and ceftazidime 25mg

(against gram-negative), if not available or pending the preparation of fortified eye drops were given on fluoroquinolones because they have a broad spectrum (gram-positive and gram-negative) and plus they have good penetration intracorneal [14], +/- aminoglycosides (gentamicin). Treatment is adjusted after depending on the results of susceptibility testing. The indication of a systemic antibiotic therapy should be considered in cases of generalization risk of eye infection starting point or corneal perforation when fears of a spread of infection. [8]

The use of topical corticosteroids (sub conjunctival) is controversial: they are very useful to decrease the extent of stromal scarring and iris adhesions. We prescribe them only when the infection is under control, and under strict ophthalmologic monitoring (after 48 hours).

The unfavorable functional outcome is the delay in the consultation after the start of the functional symptoms (average time of 7d from 2d to 15d) the only case that has responded well to treatment with recovery of AV = 10/10 consulted 48 hours after the onset of the symptoms, but also the importance of the inflammatory reaction in the anterior chamber, virulence of the organism and poor initial visual acuity.

CONCLUSION

The management of corneal abscess is difficult, it is based surune prior analysis of risk factors, mode of infection, and research adaptédu causative organism. Hospitalization estsouvent necessary to ensure enrouté rapid development of optimal treatment and a surveillanceétroite.

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