



Epidemiological Aspects of Keratoconus at the Mohammed V Military Instruction Hospital in Rabat

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ABSTRACT

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Introduction: Keratoconus is a non-inflammatory corneal dystrophy or degeneration, manifested by a forward deformation of the cornea, normally in the center, usually appearing in adolescence and causing, if it progresses, a decrease in visual acuity due to significant irregular and variable astigmatism.

Materials and methods: This is a retrospective study carried out at the Military Hospital of Rabat on 76 patients with keratoconus, followed in consultation between January and December 2021.

Results: Were included 83 patients (i.e. 166 eyes) with a confirmed diagnosis of keratoconus or mild form of keratoconus.

The average age of patients was 27.2 years, ranging from 13 to 65 years, 59.5% were male.

Allergic conjunctivitis was the most frequently found association. The most reported functional signs: visual blurring, glare, decreased visual acuity. 54% of eyes had visual acuity $\leq 1/10$, refraction found myopic astigmatism in 58% of cases.

Discussion: Keratoconus is a non-inflammatory disease characterized by thinning and bulging of the cornea.

Its incidence is estimated between 50 and 230 per 100,000 inhabitants. The average age of discovery is between 10 and 20 years old. Several classifications are available, however there is no international consensus to classify keratoconus.

On the margins of these classifications, the terms “suspicious”, “rough” or “beginner” Keratoconus have appeared. If a beginner keratoconus is a proven form, the terminologies of suspect vary according to the authors.

Conclusion: The natural history of keratoconus is variable, this pathology has benefited from many diagnostic and therapeutic advances.

Hopes are placed in the exploration of corneal biomechanics.

KEYWORDS:

keratoconus,
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INTRODUCTION

Keratoconus, from the Greek Keratos for cornea and Conus for cone shape, is that of a classically idiopathic, asymmetrical, non-inflammatory corneal dystrophy,

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characterized by thinning and progressive deformation of the cornea. On the optical level, this deformation induces regular and irregular astigmatism (high degree optical aberrations) caused by a marked alteration in the geometry of the cornea [1].

It is usually bilateral and asymmetrical, with 40% of forms being familial forms. There is no gender predominance for Keratoconus. It is a pathology that generally begins at puberty, and evolves until the age of 30 to 40 years before stabilizing [2]. The objective of this work is to evaluate the epidemiological data in patients with keratoconus followed in

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the ophthalmology department of the Mohammed V Military Hospital in Rabat.

MATERIALS AND METHODS

This is a retrospective study carried out at the Military Hospital of Rabat on 83 patients with keratoconus, followed in consultation between January and December 2021.

RESULTS

Were included 83 patients (i.e. 166 eyes) with a confirmed diagnosis of keratoconus or mild form of keratoconus.

Among our patients 59% were male and 41% were female (Figure 1)

The average age of patients was 27.2 years, ranging from 13 to 65 years, 59.5% were male.

Allergic conjunctivitis was the most frequently found association.

An associated general pathology was present in 31% of the patients and 21% of them had an allergy.

The analysis also found 9% of known family cases, particularly in siblings (Figure 2).

The functional signs suffered by our patients were as follows:

- Visual blurring and glare reported by all patients.
- A decrease in visual acuity reported by 80 patients.
- 2 patients had monocular diplopia, and 4 cases reported deformation of objects.

Keratoconus was bilateral in 68 patients.

At the time of the consultation, 45% of the eyes had visual acuity less than or equal to 1/10.

The refraction objectified a myopic astigmatism in 60% of the eyes.

The average keratometry value of our patients was 54.87 diopters.

55.4% of patients belonged to stage 1 (Figure 3)

DISCUSSION

The average age of the patients was 27.2 years, ranging from 13 to 65 years, 59.5% were men, which is close to the results obtained by Maadane et Al. And also by Zadnik et Al. [2, 3] Regarding the distribution by sex, we find that there is a slight male predominance, which is found in several epidemiological studies [5-9].

Keratoconus is a non-inflammatory disease characterized by thinning and bulging of the cornea.

As for the etiopathogenesis, it is multifactorial and imprecise, we retain that the combination of 5 factors is the source of the disease:

- Heredity
- Atopy
- Chromosomal abnormalities
- Alterations of connective tissue
- And finally the mechanical constraints in particular the ocular frictions

Its incidence is estimated between 50 and 230 per 100,000 inhabitants and its prevalence at 54.5 per 100,000 (about 1/2000) [1].

It is classic to locate the onset of the disease at puberty even if the age of onset of keratoconus is probably variable and difficult to define precisely.

Concerning associated diseases: the most common associations found were trisomy 21, Leber congenital amaurosis, mitral valve prolapse and collagen diseases.

Environmental factors may also contribute to a wide variation in prevalence.

The role of heredity has been suggested following the observation of many family cases, however it is difficult in the face of a family attack to distinguish between heredity and the action of common risk factors on the members of a same family.

In the majority of cases, the diagnosis of keratoconus was relatively easy in the installed forms. On the other hand, the more frequent crude forms often go unnoticed and have little consequence because they are generally stable.

Screening is crucial because the operative risks are increased in the event of corneal surgery and most keratoconus are myopic and therefore potential candidates.

Several classifications involving different morphological parameters or optical aberrations are available. However, there is no international consensus to classify keratoconus.

CONCLUSION

Keratoconus is a pathology of the young subject which has a significant impact on personal, social and professional life. It has benefited from numerous diagnostic and therapeutic advances.

Hopes are placed in the exploration of corneal biomechanics.

FIGURES

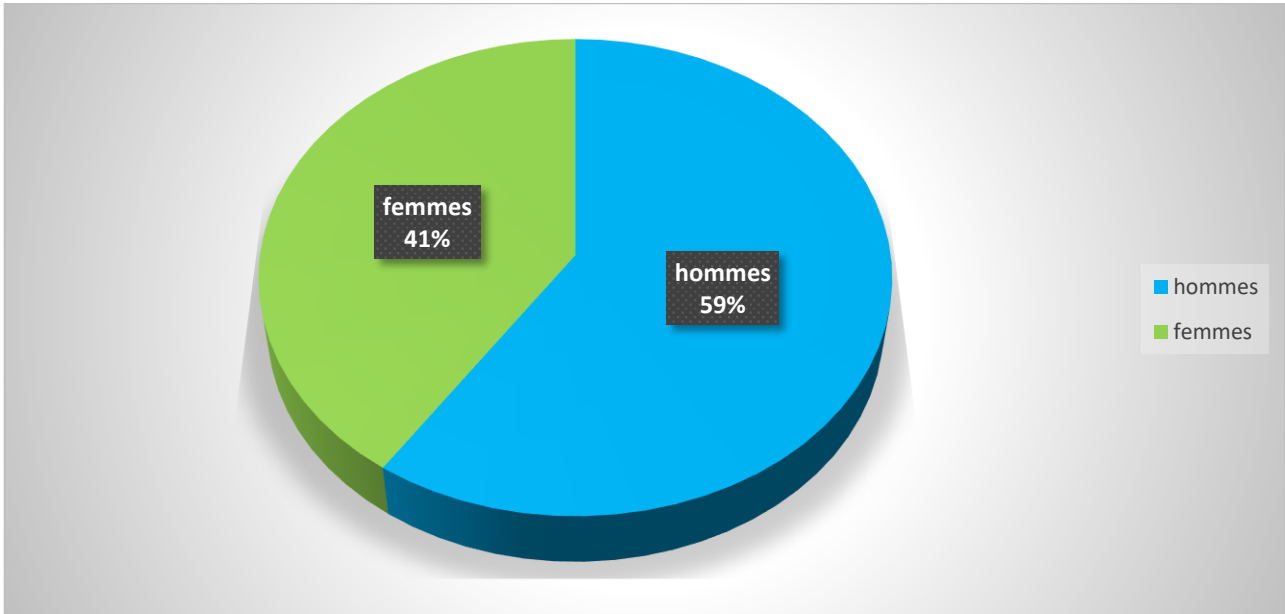


Figure 1: Distribution of keratoconus according to gender.

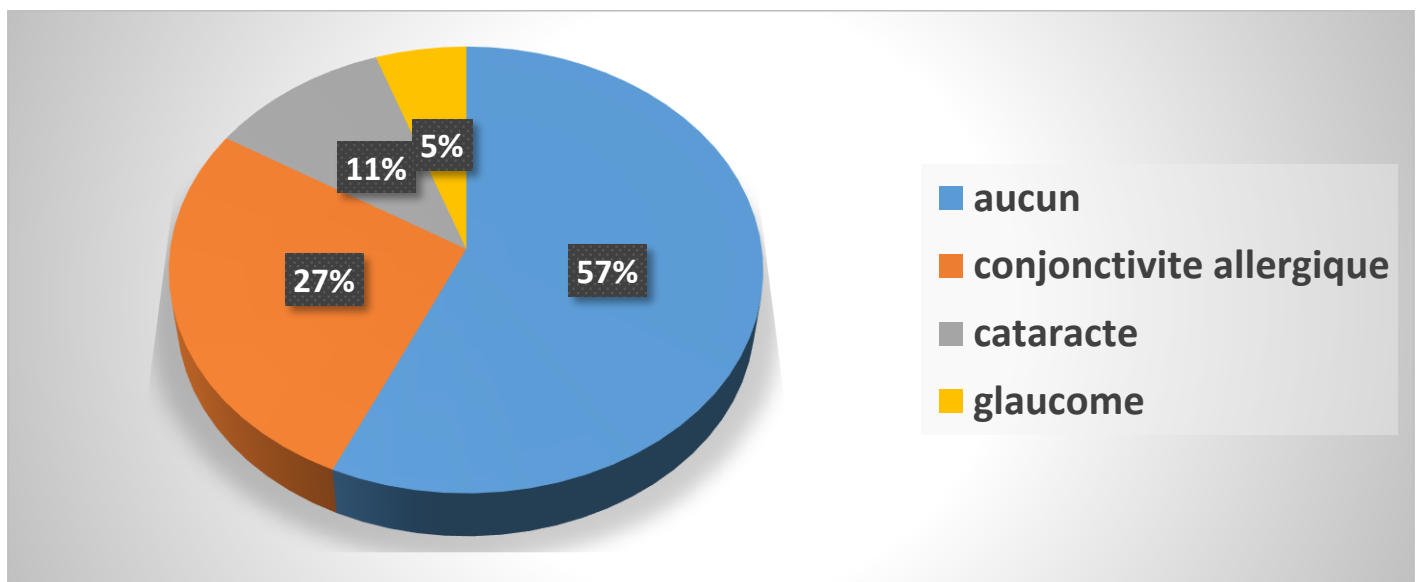


Figure 2: Associated ocular pathologies.

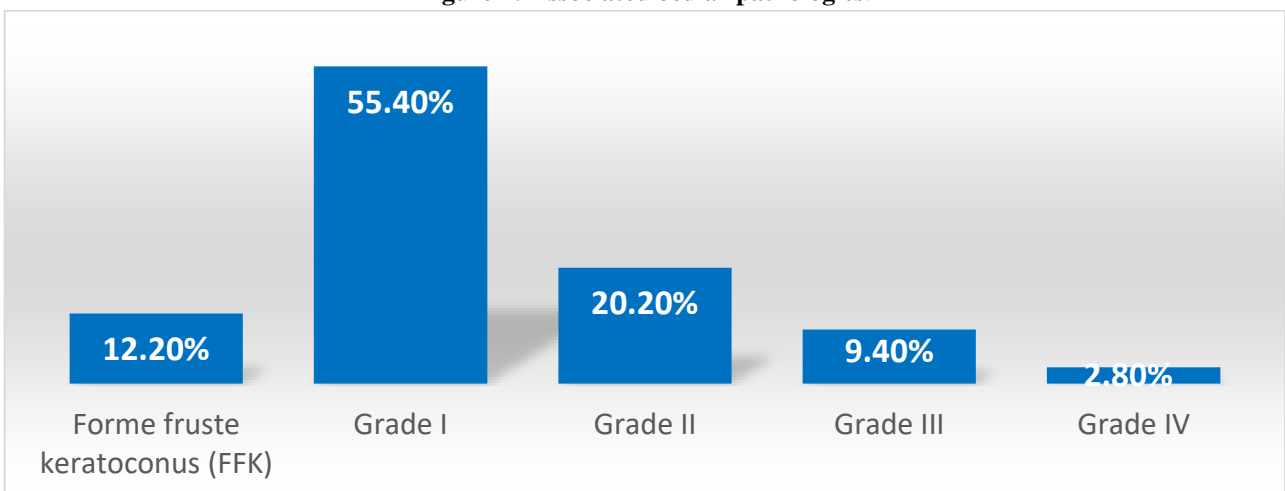


Figure 3: Distribution of keratoconic eyes according to grade.

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