

Tracing Ocular Conditions in 15,921 Interwar Refugees, Veria, Greece (1926-1940)

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Abstract

Objective. This historical epidemiological study aims to investigate ocular conditions in Greek refugees during the Interwar period (1926-1940) in the region of Imathia, Greece. **Materials and Methods.** The archival material encompasses 15,921 patients who were admitted to the Refugee Hospital of Veria, Imathia, Greece. Descriptive statistics were estimated. **Results.** Twenty-two cases of ocular conditions were identified. Ten patients had anterior segment conditions, such as keratitis, blepharoconjunctivitis, conjunctivitis, epithelioma, leukoma and an operated cataract. Another patient was diagnosed with ocular trachoma. Four patients presented sympathetic ophthalmia; two additional patients suffered from ophthalmia due to syphilis. One patient was diagnosed with ocular malaria. Four cases of ocular traumas were recorded, among which an ocular burn due to gunpowder, a motorcycle accident leading to a retro-ocular hematoma, and a kick in the eye resulting in ocular trauma were notable. **Conclusion.** The disease spectrum in Greek refugees reflects the adverse conditions during the Interwar era.

Key Words: Trachoma ▪ Keratitis ▪ Malaria ▪ Syphilis ▪ Ophthalmology.

Introduction

Refugees are considered highly vulnerable, and their movements are a matter of concern for contemporary societies. During the early 20th century, eye disorders were a global health issue (1). Following the end of World War I, and especially after the Asia Minor Catastrophe (1922), approximately 1,500,000 refugees from Pontus, Asia Minor and Constantinople arrived in Greece. This study begins with the Lausanne Peace Treaty of 1923, which ended the Greco-Turkish War and called for the first obligatory exchange of populations in history, based exclusively on the criteria of religion. After the end of the Balkan Wars and the First World War, the violent uprooting of local populations occurred on a massive scale. The catastrophic defeat of the Greek army in Asia Minor in September 1922 resulted in a huge refugee wave

from Turkey to Greece, when thousands of Greek Christians abandoned their ancestral homes. The Treaty of Lausanne, signed on July 24, 1923, delineated the compulsory exchange of populations between Greece and Turkey.

In 1924, the General Hospital of Veria was founded under the name “Refugee Hospital of Veria” by the mayor of that period (1924-1929), Ioannis Markou. The hospital had 45 beds, and was housed in the two-story building of the National Bank of Greece, at number 12, 16th October Street. Doctor Stavros Mouratoglou (1893-1941/1944) was the first director of the hospital, and Vori Grizanovsky the first nurse. During its first years of operation, only internal medicine patients were treated. In 1927, it was renamed “Municipal Hospital”, and the first Board of Directors was appointed on July 28, 1929. The Chairman of the Board was the Bishop of Veria, Naoussa Polykarpos, and Stavros Mouratoglou

was its director. During the 1930s the departments were the following: Internal Medicine, Gynecology, Surgery, Radiology, and Microbiology (2).

This study aims to evaluate ocular disorders in Greek refugees during the Interwar period in the region of Central Macedonia, Greece, by examining the archives of the Refugee Hospital of Veria, Imathia, which includes 15,921 cases from between March 5, 1926 and October 27, 1940, namely the entry of Greece into World War II.

Materials and Methods

Our data were collected from the General Hospital of Veria, a city in northern Greece. The Hellenic Data Protection Authority issued a “Data Controller’s permit” (21.11.2013, Ref. ΓΝ/ΕΞ/5965-2, Permit Number 1235) for the above archival material. Additionally, permission was granted by the 3rd Health District of Macedonia (09.01.2014, Reference Number Δ3β/297). Moreover, the details of the study were reviewed and approved by the relevant institutional review board committee (22.01.2014, Reference Number 472). The unpublished archival material encompasses 15,921 patients who were admitted to the Refugee Hospital from 5.3.1926 to 27.10.1940. The archives were entered into a pre-coded database; de-identified information about gender, age, place of residence, region of origin, cause of hospitalization, length and date of hospitalization, was entered into the database from the archive records. Quality control of the database was performed by the research team, by double checking the records using random selections of unique codes. Cases of ocular conditions were identified in the database. Descriptive statistics were estimated, including frequencies for categorical variables and range for numeric variables. Statistical analysis was conducted with STATA/SE, version 13 (Stata Corp., College Station, TX, USA).

Results

Twenty-two cases of ocular conditions were identified (Table 1). Ten patients (four males, six fe-

males, of ages ranging between 10 and 75 years) had anterior segment conditions, such as: keratitis (bullous, parenchymatous, ulcer of the cornea), blepharoconjunctivitis, conjunctivitis, epithelioma, leukoma and operated cataract. Another patient was diagnosed with ocular trachoma, manifesting as bullous keratitis.

Four patients (three females, one male, of ages ranging between 1 and 45 years) presented sympathetic ophthalmia, which may have been associated with previous trauma, or a severe infection in the other eye.

Interestingly, two patients, a 10-year-old male and a 22-year-old female, suffered from ophthalmia due to syphilis. Malaria was the leading cause of hospitalization in general (8,408 of 15,921 cases). One female, a 16-year-old patient, was diagnosed with ocular malaria.

We also noticed four cases of ocular trauma, among which three were rather impressive. An ocular burn due to gunpowder was noted in a 19-year-old male; a motorcycle accident led to a retro-ocular hematoma in a 3.5-year old child; and a case of potential child abuse was also noted, with a kick in the eye resulting in ocular trauma in a 2-year-old male.

Discussion

Ocular disorders were noted in our large cohort of patients. Anterior segment diseases prevailed, including keratitis, blepharoconjunctivitis, conjunctivitis, inflammation of the eyelid, epithelioma, leukoma and operated cataract. Nevertheless, cases that would seem rare even today also emerged in this historical cohort.

Ocular manifestations of malaria are rare (3). Although our cohort included 8,408 malaria cases, only one patient was diagnosed with ocular malaria. At that time, malaria was a considerable public health issue in Greece. After a fierce anti-malaria battle that spanned many decades of the 20th century, Greece has been declared “malaria free” since 1974. Notably, the Hellenic Center for Disease Control and Prevention reported an outbreak of malaria between 2015 and 2018, which coincided with the current movement of refugee populations (4).

Table 1. Details about Ocular Conditions in the Study Sample

Conditions grouped	Admission (year)	Gender	Age (years)	Diagnosis
Anterior segment conditions	1933	F	18	Blepharoconjunctivitis-keratitis
	1934	F	65	Conjunctivitis
	1935	F	70	Epithelioma
	1935	M	75	Blepharoconjunctivitis
	1935	F	20	Leukoma
	1936	F	60	Operated cataract
	1938	M	40	Bullous keratitis
	1938	F	40	Keratitis
	1939	M	10	Parenchymatous keratitis
	1939	M	43	Keratitis - ulcer of the cornea
Trachoma	1938	M	38	Ocular trachoma, manifesting as bullous keratitis
Ophthalmia	1927	M	36	Ophthalmia
	1932	F	45	Ophthalmia
	1933	F	1	Ophthalmia
	1933	F	17	Ophthalmia
Ocular syphilis	1939	M	10	Ophthalmic syphilis
	1940	F	22	Ophthalmic syphilis
Malaria	1933	F	16	Ocular malaria
Ocular trauma	1931	M	36	Ocular trauma
	1933	M	19	Ocular burn due to gunpowder
	1939	M	2	Ocular trauma, kick onto the eye
	1939	M	3.5	Retro-ocular hematoma due to motorcycle accident

F=Female; M=Male.

Two cases of ophthalmia due to syphilis were also noted; indeed, syphilis may affect the eye in various ways, yet rarely. Manifestations of syphilis in the eye can include ocular inflammation associated with vasculitis, vitritis and anterior uveitis (5, 6).

Trachoma was also identified in our study sample. Some cases of keratitis may also have harbored trachoma, but no specific designation of trachoma was noted, except for one case. Nearly one hundred years after our study period, trachoma is the leading cause of infectious blindness worldwide, especially in developing countries. Although the World Health Organization has established an international effort to prevent and treat trachoma, under the acronym "SAFE", trachoma may be still a public health problem due to mass displacement of populations (7).

As a total, the small number of hospitalizations due to ocular diseases could be attributed to a lack of seeking healthcare, or treatment administered by general practitioners on an outpatient basis. Tracing the history of ophthalmology in the Greek state before the establishment of the Chair of Ophthalmology, we learned that the scientific domain of ophthalmology was taught as part of the curriculum of the General Surgery course. The first Professor of General Surgery was Ioannis Olympios (1802-1869), who was appointed to this position in 1837 at the newly established Othonian University, later and still today known as the National and Kapodistrian University of Athens. The modern and contemporary history of Ophthalmology in Greece begins with the establishment of the Athens Eye Hospital in 1843, and the Chair

of Ophthalmology in 1856 at the Othonian University of Athens, with the first Professor Andreas Anagnostakis (1826-1897) (8, 9).

Greek refugees faced major adversities during their integration following the Asia Minor Catastrophe. Thousands of refugees were arriving daily in Greece from the ports of Smyrna, Çesme, Aivali, Panormos, Artaki, Mudania, Kios, Dikeli of Samson (Samsun), Kerasous (Giresun), Constantinople, etc. The first refugee wave included Greeks who had abandoned the coast of Asia Minor and were evacuated in panic to the ports of Thessaloniki and Piraeus (10). By mid-December 1922 around 890,000 people had already been transported by ship from Thrace, Pontus, and Anatolia to Greece and the islands (11). The exodus of Greeks from their homes was completed in 1925, with the assistance of the Joint Exchange Committee (11). The Asia Minor Catastrophe forced the Greek Government to rebuild and reorganize its public institutions. The resettlement of 1,221,849 refugees led to an unprecedented increase in the country's population in just a few months, and it entailed economic, public health, and social upheaval. The extensive health problems proved to be challenging for the Greek Government. The high mortality rates among the refugees indicated the lack of preparedness for health care in the Greek public infrastructure (12, 13).

At a later phase, the events that followed the Asia Minor Catastrophe had an important effect on the evolution of ophthalmology in Greece. The increased need for treatment of ocular disorders led to the establishment of ophthalmology departments in many Greek hospitals. Moreover, the spread of transmissible diseases, such as ocular trachoma, resulted in the foundation of anti-trachoma medical centers. In addition, numerous ophthalmologists that had resided in Constantinople (Istanbul), and other areas of Asia Minor, settled in Athens and Thessaloniki.

Although the Ophthalmology Department at the University of Athens was established in 1856, the University Department in the co-capital Thessaloniki was set up much later (in 1943), possibly leading to differences in perceptions and health-care seeking behavior in the region. In any case,

refugees have unique eye care needs, according to a recent systematic review (14).

Limitations of this Study

The limitations include the fact that there was no independent validation of diagnoses by other experts of this period. There was no information about the total set of clinical findings and laboratory tests conducted. Moreover, the subcohort of ocular disorders was small compared to the abundance of 15,921 cases hospitalized during this period. Furthermore, there was no information regarding the specific treatments that the hospitalized patients received for their ocular conditions. In addition, there were no data regarding cases of ocular disorders recorded in Veria prior to the Asia Minor Catastrophe 1922, as the Veria hospital was founded in 1924, and no health records were available before that.

Conclusion

Refugees and immigrants are vulnerable populations. The disease spectrum of Greek refugees reflects the adverse conditions faced by this heterogeneous group upon their arrival in Greece. Further studies are needed as refugees seem to have unique eye care needs across various time periods.

What Is Already Known on this Topic:

After the Asia Minor Catastrophe, approximately 1.5 million refugees arrived in Greece. In 1924, the Refugee Hospital of Veria was founded in Veria, Central Macedonia, Greece, and was responsible for the treatment of refugees that settled in that area. Greek refugees faced great adversity during their integration into Greek society, including poor health conditions.

What this Study Adds:

The ocular health of Greek refugees has not been adequately studied. For this reason, we evaluated ocular disorders in Greek refugees, during the period of 1926-1940 in the region of Central Macedonia, Greece, by examining the archives of the Refugee Hospital of Veria, Greece, which includes 15,921 patients. Ocular disorders were noted in our large cohort. Anterior segment diseases prevailed, including keratitis, blepharconjunctivitis, conjunctivitis, inflammation of the eyelid, epithelioma, leukoma and operated cataract. Various ocular traumas were also noted. Nevertheless, cases that would seem rare today also emerged in this historical cohort, such as ophthalmia due to syphilis, ocular malaria and sympathetic ophthalmia.

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