



ORIGINAL ARTICLE



Trachoma in Iran: From Past to the End of Twentieth Century

Abstract

Trachoma and its complications, including blindness, is one of the problems that has always threatened human society. This disease was known among Iranian physicians since past time in Iran and there had been signs of disease description and its treatment methods in ancient books.

At the beginning of twentieth century, by discovering the cause of the disease, comprehensive actions were taken by Iranian government to eradicate this disease. These actions included public treatment in community as well as health education in schools. Also clinics and ophthalmologists have begun to treat the disease with new methods.

The results of this study based on the study of documents, remaining evidence and the statistics of patients in different regions indicate that although Iranian government managed to control the disease and its complications, but it never succeeded in eradicating Trachoma.

Key words: Trachom, Iran, Iranian medicine, Qajar

Received: 27 Dec 2018; Accepted: 25 Jan 2018; Online published: 30 Feb 2018
Research on History of Medicine/ 2018 Feb; 7(1): 51-61.

Masoud Kasiri¹

1-MD & PhD Assistant Professor, Department of History, Faculty of Literature and the Humanities, University Of Isfahan, Iran

Correspondence:

Masoud Kasiri
MD & PhD Assistant Professor, Department of History, Faculty of Literature and the Humanities, University Of Isfahan, Iran
masoodkasiri@ltr.ui.ac.ir

Introduction

Eye is one of the most significant organs of human body and so it has always been usual to pay special attention to it. The methods of diagnosis and treating eye diseases have always been the subject of human thought. Ophthalmology is the first human expertise in the medical field; historically, a group of physicians was especially trained for the treatment of eye diseases.

In Islamic civilization, physicians found a high rank in ophthalmology, and for this reason, ophthalmologists had a special status among other physicians. Many eye diseases and their treatment methods, such as Ammar's proposed methods for ophthalmology, were first described by Iranian physicians during the Islamic civilization.

One of the most common diseases of the eye is Trachoma, which Iranian physicians call it "Jarb jafn". In undeveloped societies, trachoma is the most common cause of eye blindness. This disease is a severe and chronic eye infection, which is more common in poor areas with low levels of health, hot and dry areas, dusty weather and developing countries. Trachoma in Iran is prevalent in Southern regions and especially in Khuzestan. Today, in developed and developing countries, the disease is eradicated. However, unfortunately, the most common cause of blindness among the elderly in these areas is trachoma.

In Iran, in addition to the methods used to prevent and treat this disease by physicians, there were also useful measures taken by the government to screen, diagnose and eradicate the disease. Documents, newspapers and publications of that time believed that the educational and therapeutic measures of the Iranian government, especially during the Pahlavi II (1925 B.C.), have contributed greatly to eradicate the disease.

In this study, after a brief introduction of the signs and symptoms of the disease, as well as a brief overview of its history, the measures which are taken in Iran are investigated. The questions raised in this study are:

- How were the diagnosis and treatment measures of Trachomatis in the past?
- What is being done in modern Iran for eradicating trachoma?
- How much have been public health measures effective on eradicating the disease?

Based on the search, there have been many research studies on the methods of prevention and treatment of this disease, as well as a large number of epidemiological studies in this regard, there is no historical study recorded for the eradica-



tion of Trachomatis by Iranian governments after the Constitutional Revolution (1905 B.C.). Among published articles, there was only a historical article discussing the methods of Ibn al-Nafis in treating this illness.¹

Definition, Signs and Symptoms of Trachomatis

Trachoma, also called granular conjunctivitis, also known by Egyptian physicians, is an infectious disease caused by *Chlamydia Trachomatis*. This infection tightens the inner surface of the eyelid. This tightening can lead to eye pain, external surface or corneal fragility of the eyes and possibly blindness.²

Like most chronic diseases, the onset of trachoma is also quiet and covert, so that patients can often suffer from trachoma for months or years without any brief attention to boredom. Thus, the onset of the disease is often seen at the examination of children before entering kindergarten, primary school or examination of soldiers.³

Sometimes, when a person refers to physician for other eye diseases, such as an eye injury, the physician finds out a trachea. If questions are asked from such patients who are filled with tracheal granules on the inner surface of their eyelids, they usually say they have not had eyesores until now.

Sometimes, just some very sensitive individuals refer to physicians for heavy eyelids and fear of light, and they say in the morning, they open their eyes hardly or they have eye drip when they work. Therefore, irritation, fear, exhaustion and exhaustion of the eyes are the first symptoms.⁴

Trachoma has two stages; the first stage is conjunctivitis, an active infection by a bacterium. This stage of the disease is very contagious. In the next stage, the disease damages the cornea. Repeated infections swell the root of eyelashes, and bring eyelashes to the inside of the eye and finally scratch the cornea. This scratch is painful, and causes a scar on the cornea and ultimately becomes cloudy. Frequent, widespread and untreated infection will lead to blindness. Timely treatment will save the individual from blindness.

Trachomatis does not create permanent safety, and there is a risk of reoccurrence. The highest prevalence of the disease is seen in children aged 3 to 5 years. In some societies, more than 90% of children under 5 suffer from the disease.

Trachoma is usually bilateral and is transmitted through direct contact, the use of common personal belongings, contact with mosquitoes and flies, and is commonly transmitted from other members of the family. Therefore, family members should also be examined by a physician. The disease is more common in women than men are.

- 1- Emilie, 1972: 95-110.
- 2- Swanner, 2014: 199.
- 3- Dehkhoda: subtitle of Trachoma.
- 4- Shams, 2017: 361-36.



Early signs of the disease include pain and swelling of the eyelids, secretion, ocular hypertrophy, light scars, hyperhidrosis and blurred vision. All signs of trachoma are more severe in the upper part of the conjunctiva and the cornea than lower part. In case of lack of treatment, blood vessels will grow on the cornea gradually. As a result, recurrence of the infection will cause complications such as tears, eyelid droop and tear duct obstruction.

Usually one week after contiguity, the symptoms will gradually show up. The onset of the disease in children or infants is slow, and the patient may improve with low or no complications. The illness begins in severe cases in adults and complications occur sooner.

Trachoma can be prevented. Transmission of this disease is done by direct contact. Therefore, the contact of children, parents and family members will easily lead to the transmission of the disease. The bacteria can also be transmitted by using towels, blankets or pillows. In addition, a fly can lie on the human face and carry the bacteria. The factors that increase the probability of spreading the disease are as follows:

- Personal hygiene nonconformity
- Inappropriate disposal of waste
- Lack of adequate water for washing
- Use of common bed
- Close contact with animals.⁵

Prevention of this disease depends on proper personal and public health. Trachoma treatment is unsuccessful in the absence of environmental and personal hygiene, and the disease will reappear. Today, the following methods are utilized to treat:

Medical treatment: In the early stages, treatment with oral antibiotics is sufficient to eradicate trachoma. The whole family should be treated at the same time.

Surgical treatment: In the next stage, which includes pain and the appearance of eyelid abnormalities, surgery is required. Moreover, in cases where the cornea is cloudy causing impairment, corneal grafting may help to improve vision, but the result might not be very satisfactory.⁶

History of Combating Trachoma

Trachoma is one of the oldest diseases registered by humans. Species of this disease were clearly explained in Egyptian medical texts and apparently quite prevalent at that time. In the Papyrus of the Eber (1550 B.C.), in which conjunctivitis diseases was examined, it has been reported that the eruption of the eyelashes must be remedied by removing the eyelashes that have been bent over.

5- Darougar: 996-1012.

6- Kasiri, 2011: 175.



In Hamurabi law (1800 A.D.), paragraphs 215 and 216 referred to surgical procedures that resembled eye surgery. It is obvious that it addresses trachoma, not cataracts. From ancient Greek medicine, there is a short essay related to Hippocrates, called "on vision." In this text, the methods of treatment of trachoma prevalent in the fifth century B.C. in the Kennedy region are described. Trachoma was treated with surgery and burning.⁷

In the 6th century, some people including Muhammad ibn Qassum ibn Aslam Ghafaghi Andalesi stated that one of the greatest risks of surgery was a cornea surgery with a hook. The story of the bible about Taubis Eye Spot that was treated with Zardab also explains the prevalence of trachoma in that region of the world.

In the late antiquity (from the second to the sixteenth century), many Greek physicians were more specialized in the study of eye diseases. These physicians included Galen first, then Attius (Atois), Uriasis and Ayunus Bulls. Honin Bin Isaac received the physiologic, the principle of anatomy and therapeutic principle of the Ehsirthe papers of Faye Al-Ain book from their works. This book, as the interpreter and editor, Myrahev correctly stated, is the oldest regular textbook in ophthalmology, since Galen's book, "Diagnosis of Eyes" has been eliminated.⁸

Other traditional medicine books, in the context of eye diseases, we frequently refer to the word "Jarb Jeffen", which is the same as trachoma disease, explain its signs and symptoms. In the book of Nurale'iyon, the first medical treatise written by Abu Roh Mohammad bin Mansour Jarjāni, known as Zarrindast, which is written in Farsi⁹, in response to a question that "If you are asked what kind of jarb fall into the jafan?". It divides it into four distinct species:

The first type is "Hasci", in which when you turn your eyelid, you see red and swollen behind it, and patient has itching and eye drip. The second is Javersey, which is the next stage of trachoma, in addition to previous symptoms, it becomes thicker inside the eyelid. The third is "Tiny" which is more severe than previous stages and in addition to having previous symptoms and a burning sensation from the eye, the redness in the eyelid is so much that inflammation is found from the back of the eyelid. The fourth type is "khazffy", and in this type of most severe condition, pain, burning, redness and inflammation of the eyelid reach the extreme, and the conjunctiva is like rocks; this type leads to reduced vision and causes blindness; its treatment is so difficult. Interestingly, in this book Hippocrates clearly described the disease and mentioned that if the patient reached this stage, it is very

7- Berteren. 2015: rch.ac.ir/article/Details/7518.

8- Alam,1935: 18-26

9- Elgood , 1978: 431.



difficult to treat.¹⁰

When the causes of trachoma were unknown, scientists encountered an epistemological scourge. In fact, the disease was divided not according to its causes but based on anatomy (according to Jalin's opinion on the examination of the affected organ). This is a natural way of approaching, since the agent was unknown until 1935 B.C. Nonetheless, the Sabet bin Qarah Harandi (3rd century) believed that the conjecture of the eye (Sabal) was related to the eyelid trachoma (jarab).¹¹

Both medicine and surgery were used to treat trachoma. Treatment with medicine was topical, but there were also general methods. It was necessary that concentrated blood should be evacuated. This work was done through phlebotomy. Then, they should remove the concentrated sputum. In particular, it was necessary to remove the sputum of the head, which was done by sneeze [10]. Ancient Egypt was the origin of many methods of treatment such as the use of copper sulfate (Cut Blue), which was renowned for the Indian Thytica (blue vitriol). The ability to disinfect it fully justifies the long application of this type of treatment. Some recommended drugs for treating trachoma include: Zeror Takhmiz, Zeror Ramadi, Zeror Mamiran, Zeror Eghlima, Orange suppository, etc.¹²

Fighting Trachoma Post-Constitutional Period

Trachoma is one of the most prevalent diseases in most parts of Iran, especially in the Western, central and Southern parts of the country. Since the cause of this disease was not discovered, there was no definite treatment, so it was normal for most people.

In the post-constitutional period, one of the diseases that the government controlled and treated was trachoma. The number of people with this disease was extremely worrisome and its prevalence was to the extent that the entire country health department writes in a report: "most of the western villages have trachoma (granulation)¹³ in part of the report Dr. Ahijah Al-Dawlah, the United Nations for the most common diseases in Iran states:

"Trachoma or eye disease is very common in Iran, and especially in some parts of the country the disease develops. The villagers who are infected do not care about the disease, and this is the cause of its outbreak... "¹⁴

The main reason for not paying attention to the prevention of this disease was the unknown cause of the disease. Failure to identify the cause of the disease did not allow physicians and the government to make decision. In a general health plan in 1932, it was emphasized that the cause of the dis-

10- Jorjani, 2013: 310-325.

11- Berteren, rasekhoon.net/article/show/1091234.

12- Hakim momen, 2010: 573.

13- Roustaii ,2003: 397.

14- Etelaat newspaper, 1935: 2579.



ease is still unclear, and is considered by some as a family or friends. Because the diffusion agent is still unclear, people should avoid any direct contact with the infected person and protect the body from flies, which may be an indirect agent.¹⁵

Although in 1802 a French surgeon, Dominique John Larry, serving in the Napoleonic army referred to trachoma disorder, the ambiguity about the cause of the disease continued until 1935; in this year, the fight against trachoma entered an advanced stage by discovering the cause of the disease and effective ways of treating.¹⁶ Now, the government and the Ministry of Health decided to teach physicians, their members and provided specialist offices and facilities with treatment of the disease. In each of these offices, one ophthalmologist was assigned to treat the disease.

One of the most famous physicians in ophthalmology was Professor Mohammad Gholi Shams. Recently, government unveiled the memorial stamp 'Tabib Didegan' on the occasion of eradicating the trachoma and was shown at the National Museum of Medical History.¹⁷

Professor Mohammad Gholi Shams (born in 1906), who is known as the Iranian father of ophthalmology, is the son of Dr. Yahya Shams, nicknamed Lissan al-Hakma, and the grandson of Mohsen Mirza Malek Ara, who is nicknamed Shams al-Sha'ra as one of the most famous poets of the Qajar era. After completing elementary and high school education at Sunnolin School in Tehran, he started medical studies at Dar Al Fonoun School.

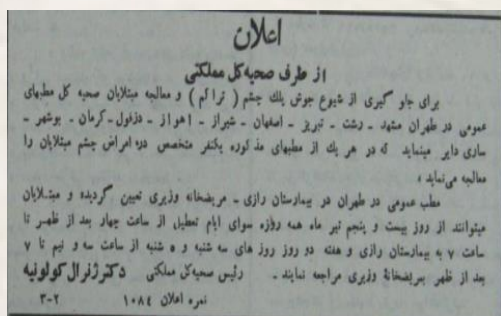
Then, in 1923, he travelled to France and was admitted to the medical system of the city of Lyon, where he was admitted to the post of medical officer. In 1932, before the establishment of the University of Tehran, the Minister of Etemaddoleh Qarheshlu invited the patients to receive medical treatment, returned to Iran, and began teaching as a professor at Dar Al Fonoun.¹⁸

After a visit to Southern Iran and areas where trachoma and blindness broke out, he refused to return to France forever. The first action of Professor Shams in Iran was to order the establishment of an army ophthalmology branch in Hafez Avenue near Aziz Khan crossroads and then to establish a department of ophthalmology in Dar Al Fonoun School building.

He asked a number of physicians to fight trachoma in Southern Iran in the World Ophthalmology Association, he treated patients with Austrian and Iranian physicians. With the efforts of this medical team, trachoma disease in the Southern regions of Iran was almost eradicated (picture 1).¹⁹

- 15- Roustaii ,2003: 397.
- 16- iranianpath.com/last-news-list:2015.
- 17- mehrnews.com/news/2491252.
- 18- museum.tums.ac.ir/vmuseum-cheshm/v-sar-group-list.asp.
- 19- farabih.tums.ac.ir/AboutUs/Introducing/Professor/Shams.





20- Shams, 2017: 361-36.
 21- Etelaat newspaper, 1935: 2579.

Figure 1. Ophthalmologist's Office .

In 1935, after discovering the cause of the illness and familiarizing with new treatments, the Ministry of Health decided to train people, and especially the students most exposed to the disease. Surveys of schools revealed that many students had primary signs of trachoma but did not know their diseases.²⁰ For this reason, this inclusive move should start from schools, so it was decided that teachers would be trained in the summer of 1935. They would familiarize with the principles of prevention and treatment of this disease in order to better manage the disease. For this purpose, for the first time, a large group of teachers was camped in Tehran's Landscape, where the basic principles of prevention and treatment of the disease were trained by ophthalmologists such as Professor Shams. In this class, over a hundred and fifty people throughout the course were engaged in scientific and practical training in the treatment of the disease (picture 2).²¹



Figure 2. Notice on eye health education in schools.

After educational actions were taken, searching among the resources and documents to find new evidence of general measures or conducting epidemiological research on the disease of trachoma until 1959 is inconclusive. Perhaps, the reason for this is the lack of evidence from the control of the disease of trachoma, and since the government did not consider trachoma as a disease, there was a huge threat to the Iranian people. Although a research that was conducted in 1959 under the supervision of Professor Mofidi, professor of parasitology and the head of the Scientific Department and Parasitological Institute, and the result of which was presented by Dr. Hamid Mohsenin, the Iranian government representative at the International Conference on Trachoma in Tunisia, represents a bitter reality. This study showed that the average percentage of trachoma disease in the study areas was about 55% (picture 3).

منطقه مورد مطالعه	تعداد افراد مورد معاینه	تعداد تراخیمها	درصد تراخیمها	تراخیم فعال	درصد تراخیم فعال	تراخیم در صد
منطقه کنار بحر خزر	۱۲۶۴	۵۲۰	۴۱/۷	۱۷۰	۱۳/۴	۳۵۰
منطقه مرکزی	۳۱۲۱	۱۶۰۷	۴۹/۸/۱۰	۶۰۳	۱۹/۳/۱۰	۱۰۰۰۴
منطقه سواحل خلیج فارس	۱۷۴۶	۱۲۷۶	۷۳/۱۰	۶۷۵	۳۸/۶	۶۰۱

Figure 3. Trachoma Medical Geography in Iran.

The report also explains that the percentage of active stage trachoma, the most severe type, in subtropical regions of Iran reaches a number higher than 38 percent, and also indicates that the incidence of disease in ages older than 35 years is severely 10% more women than men (picture 4).

مجله دانشکده پزشکی		۱۰۰۰
۱۳/۴/۱۰	منطقه معتدله رطوبی	
۱۹/۳/۱۰	« خشک	
۳۸/۴/۱۰	« نیمه گرمسیری	

نسبت انتشار تراخیم در بین زن و مرد در مناطق مختلفه بقرار زیر میباشد:

تراخیم در مرد	تراخیم در زن
۳۶/۱۰	۴۵/۷۰/۱۰
۴۹/۵۰/۱۰	۵۸/۵۰/۱۰
۶۹/۴/۱۰	۷۶/۱۰/۱۰

Figure 4. The ratio of disease between men and women.



Perhaps in the analysis of the above statistics, it can be argued that the majority of schoolchildren at that time were boys, so the method of teaching in schools had a greater impact on the reduction of trachoma among boys. On the other hand, most people who were trained at health school since 1935 and were under the age of 35, lower incidence of under-35s indicates that school education had great effects on the reduction of the disease in community.

However, according to the fact that by 1959, there was no acceptable statistics and a comprehensive epidemiological study in the country. These results were more based on speculation; although, due to all actions taken to prevent the complications of this disease and its dramatic decrease, the prevalence is still high among some people, especially villagers in the Southern parts of the country.

Conclusion

The results of this study indicate that Trachoma was known among Iranian physicians since ancient time, and most physicians have described the disease and its treatment methods. However, it was not possible to achieve a definitive approach for treating the disease until the early twentieth century.

By discovering the main cause of disease and its transferring methods, many measures were taken by Iranian physicians to control Trachoma, in addition, they trained health both in schools and community. Other results suggest that although Trachoma was not the main cause of blindness at the beginning of the twenties century in Iran, and Iranian physicians could control the disease and its complications in two decades; they never succeeded in eradicating it. Today, Trachoma still exists in some regions of Iran, although it does not lead to irreversible effects.

References

- Savage-Smith E. Drug Therapy in Trachoma and its sequelae as presented by Ibn al-Nafis. *Pharmacy in History* . 1972; Vol. 14(3).
- Swanner, Yann A. Meunier ; with contributions from Michael Hole, Takudzwa Shumba & B.J. *Tropical diseases: a practical guide for medical practitioners and students*. Oxford: Oxford University Press, USA. 2014.
- Dehkhoda A A , [*Dehkhoda Encyclopedia*] subtitle of Trachoma. [in Persian]
- Mohmadqoli SH. symptoms of trachoma. *ophthalmology*. 2017; Vol 2(7). [in Persian]
- Darougar S. epidemiology of trachoma. *medical science press*, vol 17.
- Kasiri M. [*The effect of modernism on public health and medical geography of epidemic diseases in Iran during the rule of Reza Shah(1925-1941)*]: university of Isfahan. 2011. [in Persian]



<http://rch.ac.ir/article>

Alam H. [*Nameh Ahmadi*]. Tehran university of medical science press. 1935. [in Persian]

Cyril E. [*Medicine in Safavid period*]. Translated by Javidan M. Tehran: Tehran University Publication. 1978. [in Persian]

Jorjani M, [*Nouroloyoun*]. Translated by Beykhabapour. Tehran. 2013. [in Persian]

<http://rasekhoon.net/article>

Hakim M. [*Tohfato' momenin*] Translated by Rahimi. Roja. Tehran. 2010. [in Persian]

Roustaii M. [*Teb va tebabat dar iran*]. Tehran. 2003; Vol 1.

Etelaat newspaper, 1935.

<http://www.iranianpath.com>.

<http://www.mehrnews.com>.

<http://museum.tums.ac.ir>.

<http://farabih.tums.ac.ir>.

