

## History of Ophthalmic Surgery and Contributions of Unani Scholars

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Ophthalmological diseases mainly cataract has its own history from the treatment point of view. Hippocrates the Father of Medicine himself treated cataract by depressed or couched method, since in his time the same methodology was adopted by other Greek scholars. When *Tib* reached into the land of Arabia the system derived other techniques and instruments for the management of cataract. Surgeons of the Arab land and renowned Unani scholars such as Galen, Albucasis (Zahravi), Isa bin Kahhal, Ibn Al-Haitham and Avenzoar (Ibn Zohr). They operated and managed the cataract cases and were known as renowned Ophthalmologists of their times. Later on these pioneer works were transmitted as well as translated by French scholars and other Europeans. They modernized such works and finally transmitted through their hands. Despite having rich literature rendered by Unani scholars and works done by Unani and Arab scholars, the knowledge has been transferred and unfortunately we are the follower in today's scenario.

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### Introduction, History

The knowledge of surgery is as old as is the prehistoric man, the man used to check bleeding from the wounds in those days by pressing the two edges with the finger or by suctioning at the wound. The Edwin Smith papyrus (1600 B.C.) is considered the earliest surgical papyrus. Although ophthalmology was one of the most important area in Islamic medicine.<sup>1</sup> In ophthalmology Arabs have special credit as they performed almost all eye operations. Avicenna was the first person to treat lachrymal fistula by probing and he knew the cataract was due to lens opacity.<sup>2</sup>

The most original and significant contribution to the anatomy of eye came from a Physicist Ibn Al-Haitham (Al-Hazen), his well known contribution was to establish a relation of optics to the anatomy of eye and his pioneer work was to create the science of physiological optics. He gives the theory of vision in his treatise *Kitab-ul-Manazir*, and also gives the functional anatomy of the eye on the basis of close textual analysis and its detailed comparison with Galen together with such representative of Galenic tradition in Arabic as Hunain bin-Ishaq and Isa bin Kahhal. It will be shown that Ibn Al-Haitham's description is comprehensive but contrary to the established views, significantly different from the humoral and teleological traditional account.

Ibn Al-Haitham's anatomy, in fact, represents the first effort to quantitatively define the biconvexity and the forward position of lens as well as the optical axis in strictly anatomical terms i.e. the structure of the eye, moreover he investigated, functional significance of the parts of eye as an optical system.

The contribution of Unani scholars in the field of Ophthalmology is a pioneer work dates back with the history of medicine, Hippocrates, the Father of Medicine himself was treating cataract by couching method. In this methodology the lens is depressed in vitreous humor with the help of couch (fine probe needle) and the same methodology was adopted by several other Greek and later on by Arab surgeons.

Antyllus, Galen, Albucasis, Isa bin Kahhal, Hunain bin-Ishaq and several other surgeons, as well as traditional practitioners of those days; adopted the method as well as added a lot in ophthalmologic surgeries including lens extraction methods.

The historical sketch of the treatment of cataract as mentioned were<sup>3</sup>:

1. Simply depressed method or couched. This operation though followed abundantly is of great antiquity, having been known to the Egyptians and Hindus and was probably the only one practiced up to the Christian era.
2. First mentioned by Galen apparently as a recent invention, it may be extracted entire, for he says some have taken in hand to remove cataract also.
3. The lens may be broken up and left to be absorbed. Galen clearly described the operation, which rightly confines to soft cataracts or as he terms it to those of more serous humours.
4. The lens may be broken up and at once removed by suction; this operation recently introduced in modern medicine was long practiced in Persia. According to Al-Zahrawi it was invented there in his time (11th century).

Razi who was himself a Persian, and had special inducements to study the treatment of cataract, attributes to earliest mention both of extraction and suction to Antyllus' remarking: Antyllus said: "some have also made an opening under the pupil and have extracted the cataract, this can be done when the cataract is small, but if large it cannot be extracted, for the aqueous humour comes out with it. And some have used a glass instrument (*Concilium vitruim*), and by sucking it, have sucked out the cataract with it"<sup>3</sup>.

Albucasis is the most important person in the field of surgery, famous Arab surgeon, gives vivid descriptions and illustration of methods of operation as well as instruments, in his famous treatise *Kitab al-Tasrif*, which is a comprehensive manuscript on surgery, divides surgery into three parts in his book viz.

1. Cauterization and vascular surgery
2. General surgery and ophthalmic surgery
3. Treatment of fracture and dislocation

Isa bin Kahhal, a famous ophthalmic surgeon of Arab land, his title name Kahhal is enough for his introduction as ophthalmologist (*kohal* = *Surma*). He was committed to ophthalmology and relevant surgeries; he performed the operation of cataract, lachrymal sac disorder as well as pterigium and pinguecula etc.<sup>4</sup>.

In addition to above mentioned, Hunain bin-Ishaq had his own independent work on ophthalmology; his book *Kitab al-Ashr Maqalat-fil-'Ain* includes twenty chapters on anatomy and physiology of eye with proper illustrations<sup>5</sup>.

These men of medicine placed the practice of ophthalmology to the dignified level of a profession by succeeding centuries; have not obliterated entirely the superstition that they considered.

The knowledge of ophthalmology thus gathered, transmitted and translated by scholars of France and other Europeans and they modernized the works and finally transmitted the modern world through their hands. Despite having rich literature experiences and works done by Unani and Arab scholars, the knowledge has been modernized, and unfortunately we are just the followers in today's scenario.

Moreover the ophthalmology department in all Unani institutions finds no separate recognition and establishment, which is more unfortunate and needs measures aimed at the revival of this art in the light of our grand historical record of achievements in the field of ophthalmology.

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