

## HUNAIN BIN ISHAQ ON OPHTHALMIC SURGERY

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### ABSTRACT

Hunain Ibn Ishaq was a doyen in the field of medicine during the Arab era of Unani medicine, and made significant contributions in ophthalmic surgery by adding new therapeutic uses and techniques. He established the ophthalmic surgery on sound systemic footing. His earliest work on the subject may not be ignored by historians.

#### **Introduction:**

The ancient Hakims are univocally accepted as fountain sources of all sorts of knowledge. The acquisitiveness regarding the knowledge always accelerated the Unani system of medicine adding more and more knowledge as per their own efforts. Consequently it became realm of medicine and message of healing on global level.

Besides, some of the physicians preferred different special branches of medicine eg. gynaecology, ophthalmology and obstetrics etc. Likewise their clearcut illuminated footsteps may be seen in the field of surgery which was evolved by Unani Medical Surgeons according to the need and deed. Unani medical surgeons made many advancements in the field of Surgery, of which a few are stated to adduce the condition. However, Exclusive contribution of Unani Medical Surgeons Viz. Abul-Qasim Zahrawi (d. 1000 A.D.) and Ibnul-Quf (d. 1286 A.D.) etc. became model for all the subsequent ages.

**Ophthalmic Surgery:** In the field of Ophthalmic Surgery, the work of Hunain bin Ishaq (809-877 A.D.) and Ali-bin Isa may not be ignored. Their contribution viz. Kitabul-Ashr Maqalat fil-Ain and Tazkeratul Kahaleen are of high altitude. They not only elaborated the research particularly on ophthalmic surgery available upto their time, but also included personal experiments and observations. According to Hassan Nagrami, "Kitabul-Ashr Maqalat fil-Ain is a comprehensive book on ophthalmology with the contents of anatomical informations regarding the eye along with its diseases, aetiology, signs and symptoms and treatment. This is a famous book on ophthalmology.

#### **Hunain Bin Ishaq on Ophthalmic surgery:**

Abu Zaid Hunain bin Ishaq Al-Ibadi was born at Hira (Mesopotamia) in 809 A.D. as the son of Nestorian Christian druggist. He was not only eminent physician of his period but also he was a translator of high

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dignity. He had rendered the books into Arabic more than any of his contemporary translators. Hakim Wasim Ahmed Azmi has given a detailed list of his compilations and translation, according to him, "the total number of Hunain's writings comes to 116". He further says:

"Indeed, Hunain Ibn Ishaq is well known figure as a translator; however, he has also high Status in compilation and writing. According to Qifti, he has authored 36 books and according to Ibn Nadim he is author of 21 books on medicine<sup>1</sup>"

His significant work "Ten Treatises On Ophthalmology, as per Max Meyerhof, is the earliest existing systematic text book of ophthalmology, who has edited the Arabic text from the only two known Mss and presented to the scholars along with English Translation and glossary. The book was published by Max Meyerhof, Govt. Press, Cairo, in 1928". After going through the book it is clearly evident that, he not only elaborated the research work available upto that time, but also included his personal experiences and observations. This learned ophthalmic surgeon enlightened even the minute facts of ophthalmology. Some salient features of his surgical work are as under:

### **Cysts and Tumours:**

Ibn Ishaq was fully aware regarding the therapeutic variations concerning the swelling (tumours) produced by temperate blood. As per his statement:

"..... If there is no plethora, it is treated with dissolvent faculty acting on

the organ itself, attracts more (bad humours) to it than it dissolves"<sup>2,3</sup>

He further says:

"The remedy, which surpasses the flow of matter must not be applied immediately"<sup>2,3</sup>

The above claims and statements given by Hunain bin Ishaq are self explanatory. Need not to mention that the accumulation of pus is inevitable not only for reduction of pus, but also for surgical removal.

### **Purulent Keratitis and Corneal ulcer:**

The line of treatment given by Hunain bin Ishaq is of significant value. He has described gradual steps for its treatment as maturation, moderation and dissolution with the medicinal regimen. Need not to mention that there are number of drugs for the eradication of cataract in primary stage, where as the modern system of medicine seems helpless in this way, quoting Miller:

"No medical treatment by drugs or otherwise has been shown to any significant effect inducing the disappearance of cataract once opacities have developed"

He further states:

"The only way for the treatment of papillomata or simple granulomata is "Surgical Removal"<sup>4</sup>". The surgical procedure has been recommended only in chronic cases not curable with medicinal therapy, in Unani system of medicine.

Likewise, Hunain-Bin-Ishaq has recommended the surgical removal only in

chronic cases, or in other words incurable with remedies. He has prescribed even the strong corrosives and other clearing drugs prior to its removal particularly in the case of pterygium. Modern surgeons are of the opinion that pterygium is best left alone unless it is progressing towards the pupillary area or is dis-figuring, it can not be removed without leaving a scar unless it is replaced by a lamellar corneal graft<sup>5,7</sup>.

Unani physicians and surgeons have given the priority of medical treatment instead of surgical one in these cases, however, in the chronic or uncurable cases they have recommended the surgical treatment for these cases eg. pterygium and trachoma, if they are hard and chronic, they must have treated by excision and scrubbing. If they are thin (mild cases), they can be cured with cleaning remedies like burnt copper, blue vitriol, gall of pigs, rock salt and goats' gall. If these be not efficient, they must be mixed with corrosive and putrifactive remedies<sup>2,3</sup>.

Modern Surgeons also recommended such type of corrosives in addition to systemic treatment, quoting Miller; "Cauterisation may be performed with pure carbolic acid or trichlor acetic acid (10-20%), it acts both as a caustic and anti-septic<sup>4</sup>".

### **Cataract :**

In this chapter, Hunain bin Ishaq has given significant hints for the operation of cataract, more of the techniques are still in the practise quoting the text: "It is safest to operate on the cataract towards the

end of the month and end of the body; if you intend (couching operation) put your needle at the extremely of the eye in the outer corner of the eye, hold the eye ball with your fingers, be at the origin of the needle. Then pierce it, through taking care that the eye ball does not slip from under your fingers, and the needle reach the layers of the cornea or enter between the conjunctive and the cornea and so reach the black of eye and tear it"<sup>2,3</sup>.

This scientific approach may be confirmed by modern books, as I.S. Roy is of the opinion that:

"At 12 'O' Clock position a preplaced 8-0 virgin silk corneoscleral stitch is given and the loop is left loose. Two peripheral iridectomies are done at 10 'O' clock and 2-0, clock position<sup>4</sup>".

Anterior capsule of lense is then pinched near the lower pole with an intracapsular forceps and an upward pull is exerted with a slight side zig-zag movement<sup>4</sup>

Hunain Ibn Ishaq was also aware regarding the dangerous consequences and sequelae, that is why he has subsequently described the precautionary measures, to be adopted during the surgical removal of Cataract, Example:

"Beware of turning your needle in the wrong disrection and of reaching the back of the cornea from inside and tearing it, for that would destroy its pupil and it is (an injury) not likely to be cured. Deal gently with the cataract, until you have remove its place, and beware of treating it wrongly, lest you should tear its layer, and the cata-

ract be difficult for you to collect it and bring it back<sup>2,3</sup>"

Post operative medicinal therapy and measures also play important role in the cataract operation. Hunain Ibn Ishaq has given significant line of treatment and measures for the same. The following quotation is quite enough to highlight this claim.

"After having couched it (the cataract), dress it (The eye) with the yolk of eggs and crushed cumin which you put on a piece of cotton or wool and bind on both of his (Patient's)<sup>2,3</sup> eye.

Let him beware of lowering his head of coughing, sneezing and too much speaking. He may eat moistened his temples and there by disturb his eye .....

The operated patient must sleep on his back and keep his head straight and not more than day or night untill the next day. Then dress it again with egg and cumin and repeat this for three days"<sup>2,3</sup>.

It seems that Hunain bin Ishaq was fully aware about importance of post operative management. Need not be mention that the above measures if adopted may give tremendous result in the field of ophthalmic surgery, particularly operation of the cataract:

Hunain bin Ishaq has the courage to put on record his experiences having positive as well as negative result, as below"

"...It is safe only in a few cases. In general its (the cataract), treatment is a risky one and its benefit cannot entirely relied on"<sup>2,3</sup>.

Hunain Ibn Ishaq has also mentioned the treatment of prolapse of the eye as well as for blood spot.

#### **Discussions:**

After going through the book titled "Kitabul-Ashr Maqalat fil-Ain", it is clearly evident that, Hunain Ibn Ishaq was a capable eye surgeon. Number of ophthalmic ailments eg. swelling (tumours) pus and pustules in the cornea, prolaps of the eye and cataract have been described in length from the surgical point of view. Need not to mention that pre operative, pan operative and post operative measures and medical therapies which are of high appreciation.

#### **Conclusion:**

Hunain Ibn Ishaq was a doyen in the field of Medicine during the Arab era of Unani Medicine, and made significant contributions in ophthalmic surgery by adding new therapeutic uses and techniques. He established the ophthalmic surgery on sound systemic footing. His earliest work on the subject may not be ignored by historians.



सारांश

## हुनैन बिन इसहाख-नेत्र की शल्य चिकित्सा के क्षेत्र में

— के.ए. शफखत आजमी

यूनानी चिकित्सा पद्धति के इतिहास में हुनैन बिन इसहाख को एक वरिष्ठ स्थान प्राप्त है । नेत्र रोगों की शल्यचिकित्सा के क्षेत्र में इसने नवीन चिकित्सीय प्रयोगों तथा तकनीकों का समावेश कर महत्त्वपूर्ण योगदान दिया । इस प्रकार इसने नेत्र शल्य चिकित्सा को एक ठोस सर्वांगीण आधार प्रदान किया । इस दिशा में इसके प्रारम्भिक कार्यों की आयुर्विज्ञानीय इतिहासकारों द्वारा उपेक्षा नहीं की जा सकती ।