

Brief report

Cataract Surgery in Albucasis Manuscript

Arman Zargaran, PharmD, PhD candidate*

Alireza Mehdizadeh, MD, PhD*

Abdolali Mohagheghzadeh, PharmD, PhD, PostDoc*

* *Research Office for the History of Persian Medicine, Shiraz University of Medical Sciences, Shiraz, Iran*

Correspondence to: Alireza Mehdizadeh, MD, PhD; alireza.mehdizadeh@gmail.com

Abstract

Cataract has a long history and was known about 2500 BC in Egypt. In the medieval times, physicians and surgeons used surgical approaches to ease cataract (*āb morvārid*). Albucasis, as a Great Spanish Muslim surgeon (936-1013 AD) has a detailed and accurate description of cataract surgery procedure and patient care in his manuscript, *Al Tasreef*. His description can show surgical development to ease cataract in medieval time.

Keywords: History, Cataract Surgery, Albucasis

Cataract has a long history which started about 2500 BC in Egypt.¹ In the medieval times, physicians and surgeons used surgical approaches to ease cataract removal (*āb morvārid*).² In this regard, Abu Qasim Khalaf Ibn Abbas Al Zahrawi (Albucasis) was one of the most famous surgeons who is known as father of the cataract surgery.³ Albucasis identified cataract surgery as a distinct part of medical sciences for the first time.⁴ He was born in 936 AD in Al-Zahra, northwest of Cordoba in Spain and died in 1013 AD.⁵ The title of 30th chapter of his manuscript, *El Tasreef* is "On Surgery or Hand Work".⁴ Albucasis explained surgical procedure to ease cataract extraction in the 23th part of 2nd section in this chapter as below. He also illustrated some of the surgical tools for cataract surgery (Figure 1).⁶

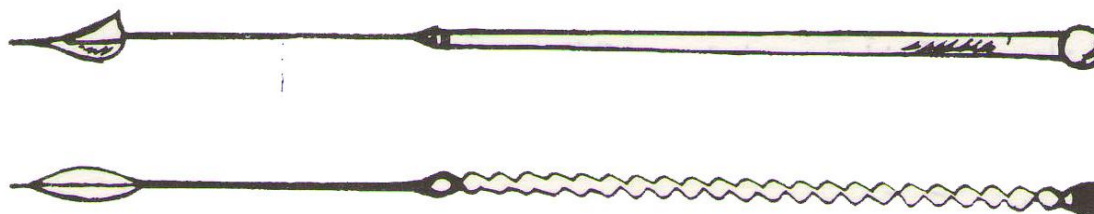


Figure 1. Schematic picture of surgical tools which described by Albucasis in cataract surgery, they were made from copper with triangle shaped head.

"Patient has to be seated directly in front of the sunshine, while his normal eye is completely covered, if his left eye has to be treated, hold his eyelid up with your left hand. Then put the needle to the border of iris adjacent to the corneoscleral limit. Now push and twist the needle until getting inside the eyeball then you feel that it is gone into an empty space. You will see the needle in the centre of the pupil because of corneal transparency. Now hold the needle where cataractous lens has been formed and push the needle down a few times. If all parts of the lens are discharged, patient can see while the needle is still in his eye. If not, push down the needle once more, then bring back the needle to its original place in the anterior chamber and then turn the needle gently and pull it out. Now dissolve Turkish salt in water and wash the eye then put a clean cotton pad coated with white egg, rose water and oil on the eye and cover both eyes with the pad. In some cases when the eyeball is resistant and hard, and the needle is not able to be inserted we should use special surgery needle. Patient has to lay down on his back in a stable bed in a dark room and he should avoid moving or coughing. He should be given soft food not to turn his head to the right or left side. His eye bandage on his eyes has to be kept for 3-7 days. Bandage has to be open in a dark room which examining

the eyes by showing the patient some objects. Then put the bandage back again and leave the patient for some days.⁶

Albucasis' description of surgical procedures in cataract can show the knowledge about cataract surgery in medieval time. He presented certain protocols and cares for patients that do indicate the high level of treatment process for cataract surgery in 10th century AD. It is a continuous progress of development of cataract surgery which we have inherited today and indeed in such an unimaginable perfection.

* Authors do not have any conflict of interest.

References

1. Ascaso FJ, Lizana J, Cristóbal JA. Cataract surgery in ancient Egypt. *J Cataract Refract Surg* 2009;35(3):607-8.
2. Eichenbaum JW. Trends in cataract surgery. *Bull N Y Acad Med* 1992;68(3):367-89.
3. Wijesinha SS. El Zahrawi (936-1013 AD), the father of operative surgery. *Ann R Coll Surg Engl* 1983;65(6):423.
4. Annajjar J, Abu Alkasem AL Zehrawi (Albucasis 936-1013). *Childs Nerv Syst* 2010;26(7):857-9.
5. Amr SS, Tbakhi A. Abu Al Qasim Al Zahrawi (Albucasis): Pioneer of modern surgery. *Ann Saudi Med* 2007;27(3):220-1.
6. Albucasis. [On surgery and instruments]. Aram A, Mohaghegh M (trans). Tehran: Tehran University, 1996;77-9.