

Al-Zahrawi (Albucasis) - A Light In The Dark Middle Ages In Europe

"Without doubt Albucasis was the chief of all surgeons."

Pietro Argallata

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Summary

In this article, Al-Zahrawi's life and his works are stressed and his place in the Islamic surgery is pointed out. Moreover, his books' importance is examined and some samples are given from these books.

Key Words: Al-Zahrawi, History of Medicine, Islamic Medicine

Abu al-Qasim Khalaf bin Abbas Al-Zahrawi (A.D. 936-1013), known to the West by his Latin name *Albucasis*, was born in Al Zahra'a, six miles northwest of Cordoba in Andalusia. He was simply the greatest Muslim surgeon, with European surgeons of his time coming to regard him as a greater authority than even Galen, the ancient world's acknowledged master. It is clear from **Al-Zahrawi's** life history and from his writings that he devoted his entire life and genius to the advancement of medicine as a whole and surgery in particular.

What is known about **Al-Zahrawi** is contained in his only written work: *At-Tasrif liman 'Ajiza 'an at-Ta'lif* (**The Method of Medicine**). *At-Tasrif* is a medical encyclopaedia compendium of 30 volumes compiled from medical data that **Al-Zahrawi** accumulated in a medical career that spanned five decades of teaching and medical practice. He apparently travelled very little but had wide experience in treating accident victims and war casualties.

The last and largest volume of *At-Tasrif*, "On Surgery," was nothing less than the greatest achievement of medieval surgery. It was the first independent surgical treatise ever written in detail. It included many pictures of surgical instruments, most invented by **Al-Zahrawi** himself, and explanations of their use. **Al-Zahrawi** was the first medical author to provide illustrations of instruments used in surgery. There are approximately 200 such drawings ranging from a tongue depressor and a tooth extractor to a catheter and an elaborate obstetric device.

The variety of operations covered is amazing. In this treatise **Al Zahrawi** discussed bloodletting, midwifery and obstetrics, the treatment of wounds, the extraction of arrows and the setting of bones in simple and compound fractures. He also promoted the use of antiseptics in wounds and skin injuries; devised sutures from animal intestines, silk, wool and other substances. He described the exposure and division of the temporal artery to relieve certain types of headaches, diversion of urine into the rectum, reduction mammoplasty for excessively large breasts and the extraction of cataracts. He wrote extensively about injuries to bones and joints, even mentioning fractures of the nasal bones and of the vertebrae, in fact '**Kocher's method**' for reducing a dislocated shoulder was described in **At-Tasrif long before Kocher was born !**

Al-Zahrawi outlined the use of caustics in surgery, fully described tonsillectomy, tracheotomy and craniotomy operations which he had performed on a dead foetus.

He explained how to use a hook to extract a polyp from the nose, how to use a bulb syringe he had invented for giving enemas to children and how to use a metallic bladder syringe and speculum to extract bladder stones.

Al Zahrawi was the first to describe the so-called "**Walcher position**" in obstetrics; the first to depict dental arches, tongue depressors and lead catheters and the first to describe clearly the hereditary circumstances surrounding haemophilia. He also described ligaturing of blood vessels long before **Ambroise Pare**.

Al-Zahrawi is the first to detail the classic operation for cancer of the breast, lithotrities for bladder stones, and techniques for removing thyroid cysts.

He was considered one of the early leading “plastic surgeon” as he performed many plastic surgery procedures. In the 11th chapter of volume 30 of his book he put many principles in that surgical field . He used ink to mark the incisions in his patients preoperatively which became now as a routine standard procedure. In (chapter 26) he explained the differences between primary and secondary wound closure and also the importance of wound Debridement before closure. In (chapter 47) he described the surgical options to treat Gynecomastia as he recommended removal of the glandular tissue by a C-shaped incision. For large breasts with excess skin that cannot be corrected with glandular excision alone, “...make two incisions so that the edges join each other, then remove the skin and glandular tissue in between and suture the edges of the defect...”. This technique is still considered for such condition nowadays.

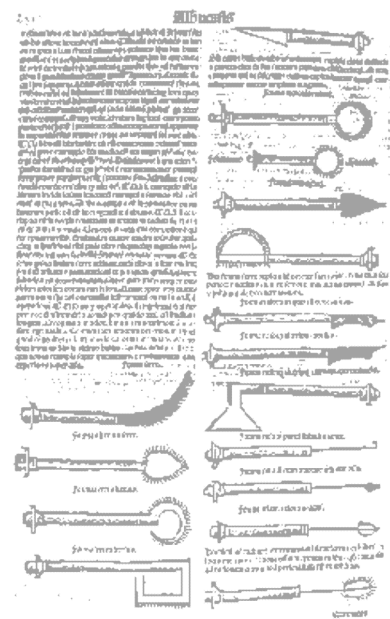
Al-Zahrawi had a special interest in eyelid surgery. He gave sensible suggestions on the use of fine instruments, of which he had a wide variety. He described surgical management of different pathologies such as entropion, ectropion, trichiasis and symblepharon.

In the treatment of entropion, **Al Zahrawi** advised eversion of the eyelid with fingers or with a traction suture. An incision under the eyelashes from medial to lateral is then carried out so that the skin is separated from the lid margin. A leaf-shaped piece of eyelid skin is excised, and lash eversion is achieved as the defect is sutured primarily.

He also classified ectropion as congenital and acquired and he advised eversion and resection of a base-down triangular segment from the inner layers for lower lid laxity to treat to cases of eye ectropion.

His book *At-Tasrif* is also the first work in diagramming surgical instruments, detailing over two hundred of them, many of which **Al-Zahrawi** devised himself. Many of these instruments, with modifications, are still in use today.

Once *At-Tasrif* was translated into Latin in the 12th century, **Al Zahrawi** had a tremendous influence on surgery in the West. The French surgeon **Guy de Chauliac** in his 'Great Surgery', completed in about 1363, quoted *At-Tasrif* over **200 times**.



A page from a 1531 Latin translation by Peter Argellata of El Zahrawi's treatise which shows many surgical and medical instruments.

With the reawakening of European interest in medical science, *At-Tasrif* quickly became a standard reference and was translated into Latin five times. The arrangement of the work, its clear diction, and its lucid explanations all contributed to its popularity and great success.

Al Zahrawi was described by **Pietro Argallata** (died 1423) as "without doubt the chief of all surgeons". **Jaques Delechamps** (1513-1588), another French surgeon, made extensive use of *At-Tasrif* in his elaborate commentary, confirming the great prestige of **Al Zahrawi** throughout the Middle Ages and up to the Renaissance.

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