

Cosmetic and Reconstructive Surgery in the Writings of Albucasis: A Historical Study

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Abstract

Albucasis, or in Arabic al-Zahrāwī (c. 936–1013), was an Arab physician and surgeon from al-Andalus (Spain). He is considered one of the greatest surgeons of the Middle Ages. He was considered a renowned physician and surgeon of the Islamic Golden Age and is often regarded as a pioneer in the field of cosmetics and reconstructive surgery due to the detailed procedures described in the surgical volume of his 30-part medical encyclopedia, *Kitab al-Tasrif*. His contributions spanned several areas that today fall under the umbrella of cosmetic and reconstructive surgery. He detailed surgical techniques for treating gynecomastia (enlarged male breasts), recommending a C-shaped incision to remove glandular tissue and excess skin. In oculoplastic surgery, he provided meticulous descriptions for treating eyelid deformities such as ectropion and entropion, even pioneering the use of preoperative ink marking for precise incisions, a standard practice today. Furthermore, Albucasis addressed congenital defects like syndactyly (webbed fingers), suggesting surgical division of the webbing followed by interposition of a pad to prevent re-fusion, and described procedures for managing conditions like hypospadias (a misplaced urinary opening). His focus on wound management, including the principles of primary and secondary closure, antiseptic use, and careful suturing with materials like catgut, set vital precedents for achieving optimal surgical outcomes and minimizing scarring, which is fundamental to cosmetic results. Albucasis not only described these advanced techniques but also illustrated and invented over 200 surgical instruments, many of which are relevant to modern surgery, cementing his legacy as a father of operative surgery.

Keywords: Albucasis, Cosmetic Surgery, History of Medicine, Arabic Medicine, Islamic Surgical Practices, Medieval Medical Texts.

1. Introduction

Albucasis, or al-Zahrāwī in Arabic, was an Arab physician, surgeon, and chemist from al-Andalus (now Spain). He is considered one of the greatest surgeons of the Middle Ages [1, 2].

Albucasis was born in the city of Alzahara, and lived most of his life in Cordoba. It is also where he studied, taught, and practiced medicine and surgery until shortly before his death in about 1013, two years after the sacking of Alzahara city.

The Damascene physician and historian Ibn Abī Uṣaybi‘a mentioned him very briefly, saying: “He was an accomplished physician, highly knowledgeable in simple and compound drugs, and skilled in treatment. He has well-known writings in the art of medicine, the finest of which is his great book known as al-Zahrāwī. Among the books of Khalaf ibn ‘Abbās al-Zahrāwī is al-Taṣrīf li-man ‘ajaza ‘an al-ta’lif, which is his largest and most famous work, and a book complete and comprehensive in its subject matter.” [3].

Albucasis thirty-volume medical encyclopedia, *Kitāb al-Taṣrīf*, completed in the year 1000, covered a broad range of medical topics, including on surgery, medicine, orthopedics, ophthalmology, pharmacology, nutrition, dentistry, childbirth, and pathology. The first volume in the encyclopedia is concerned with general principles of medicine, the second with pathology, while much of the rest discuss topics regarding pharmacology and drugs. The last treatise and the most celebrated one is about surgery. Albucasis stated that he chose to discuss surgery in the last volume because surgery is the highest form of medicine, and one must not practice it until he becomes well-acquainted with all other branches of medicine. It is well known that when Albucasis finished composing his book *al-Taṣrīf*, he had already spent fifty years of his professional life practicing medicine and surgery. He himself states this in the introduction to *al-Taṣrīf*: ‘... and all that I have tried and tested throughout my life over fifty years.’ From this, it may be inferred that Albucasis lived for more than seventy years, especially since al-Ḥumaydī mentioned in *Jadhwat al-Muqtabis* that Albucasis died after the year 400 AH / 1009 CE [4].



FIGURE 1. Two pages from the Arabic manuscript of the *Kitab al-Tasrif*. Middle East, 13th century, Chester Beatty Library

On Surgery and Instruments is the 30th and last volume of the *Kitab al-Tasrif*. It was without a doubt his most important work and the one which established his authority in Europe for centuries to come. *On Surgery and Instruments* is the first illustrated surgical guide ever written. Its contents and descriptions have contributed in many technological innovations in medicine, notably which tools to use in specific surgeries. In his book, Albucasis draws diagrams of each tool used in different procedures to clarify how to carry out the steps of each treatment. The full text consists of three books, intended for medical students looking forward to gaining more knowledge within the field of surgery regarding procedures and the necessary tools.

The French physician Lucien Leclerc summarized Albucasis standing in the development of world medicine by stating: 'Albucasis represents, in the history of medicine, the highest expression of surgical science among the Arabs, and he is also the most frequently cited authority by surgeons of the Middle Ages.' He then added: 'Albucasis occupied, in French institutions, a position between Hippocrates and Galen, thus becoming one of the pillars of this scientific triad.'

By this latter statement, Leclerc was in fact reaffirming what Riccius had already expressed in the fifteenth century. Leclerc is regarded as one of the specialists in the study of Albucasis; he translated his surgical treatise into French and wrote about him in his book *History of Arab Medicine*, published in 1876, devoting about twenty pages to valuable information on this Andalusian surgeon, especially concerning the Latin and Hebrew translations of al-Taṣrif.

Lucien Leclerc also cites a passage from the book *History of Thought in France* that illustrates the profound impact Albucasis had on the advancement of surgery in Europe. He writes: 'There is a noteworthy fact in the history of surgery in France: in the second half of the thirteenth century, a number of Italian physicians left their homeland in the aftermath of the conflicts between the Guelph and Ghibelline factions and sought refuge in France, bringing with them the works of Albucasis, the famous Andalusian Arab physician who is considered the reviver of medical science. It appears that these works reached Paris through one of the physicians of the School of Salerno, named Roger of Parma (Roger de Parme). He was followed to France by other physicians, including Bruno of Calabria (Bruno de Calabre), Lanfranc, Taddee, Louis of Pisa (Louis de Pise), Silvestre de Piesti, Arman of Cremona (Arman de Cremona), and others...'

From this context we can better understand the statement of Lanfranc, who arrived in France around 1290 CE, when he said: 'Most French surgeons were foolish and irreligious, scarcely knew their own language, and were little more than servants; their ignorance was such that it was difficult to find a single rational surgeon among them.' Hence, our astonishment diminishes when we see Albucasis occupying his place alongside Hippocrates and Galen, together forming what may be described as a scientific triad. [5].

Albucasis touched upon the subject of cosmetic surgery and dedicated many chapters for it in his medical encyclopedia, and as was translated into Latin, the cosmetic chapters were used in the West. His contributions in cosmetic surgery spanned several areas that today fall under the umbrella of cosmetic surgery. He detailed surgical techniques for treating gynecomastia (enlarged male breasts), recommending a C-shaped incision to remove glandular tissue and excess skin. In oculoplastic surgery, he provided meticulous descriptions for treating eyelid deformities such as ectropion and entropion, even pioneering the use of preoperative ink marking for precise incisions—a standard practice today. Furthermore, Albucasis addressed congenital defects like syndactyly (webbed fingers), suggesting surgical division of the webbing followed by interposition of a pad to prevent re-fusion, and described procedures for managing conditions like cleft lip and hypospadias (a misplaced urinary opening). His focus on wound management, including the principles of primary and secondary closure, antiseptic use, and careful suturing with materials like catgut, set vital precedents for achieving optimal surgical outcomes and minimizing scarring, which is fundamental to cosmetic results. Albucasis not only described these advanced techniques but also

illustrated and invented over 200 surgical instruments, many of which are relevant to modern surgery, cementing his legacy as a father of operative surgery [6].

In this paper I would like to shed light on the contributions of Albucasis to cosmetic surgery in his monumental medical encyclopedia, Kitāb al-Taṣrīf, particularly its surgical section, which represents the earliest systematic and illustrated treatise on cosmetic surgery in medical history.

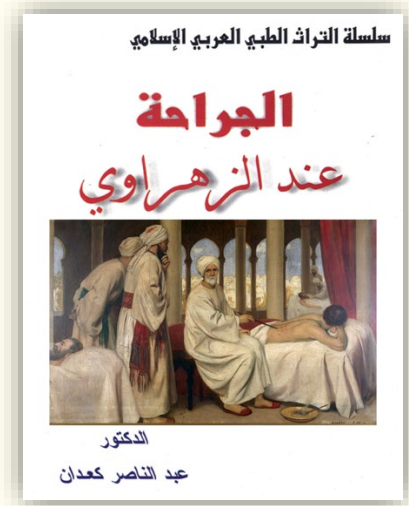


FIGURE 4. The cover image of the book written in Arabic by the author of this chapter (Abdunaser Kaadan, MD, PhD) about surgery according to Albucasis [7]

2. On the treatment of ptosis occurring in the upper eyelid

Albucasis explains the method of surgical treatment after first explaining the causes of the occurrence of ptosis of the upper eyelid, saying that the method of treatment is to incise that adhesion, separate its two lips, and place a small linen wick between them, securing it until healing occurs. One should not use drying or astringent substances in its treatment, for if this is done the ptosis will return more severely than before. Rather, use substances that soften and relax, such as fenugreek. Here Albucasis discusses only the treatment of acquired entropion resulting from poor healing of an eyelid wound, and he therefore advises re-incising the adhesion anew. This approach is close to the modern treatment of what is called cicatricial entropion [8].



FIGURE 5. Ptosis occurring in the upper eyelid

3. On the treatment of entropion occurring in the lower eyelid

In this chapter, Albucasis distinguishes two types of lower eyelid entropion: the congenital type and the acquired type, among whose causes are injury and cauterization [9]. Albucasis explains in detail the procedure for correcting lower eyelid entropion, which closely resembles what is now called excision of the Zioland muscle with skin tightening, achieved by removing an elliptical segment of skin and the orbicularis oculi muscle at the roots of the eyelashes [10].

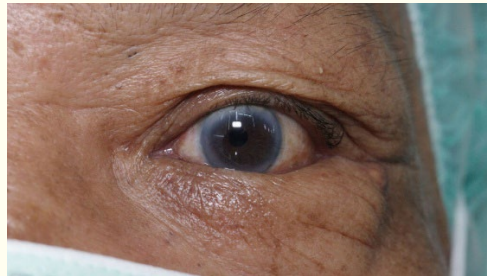


FIGURE 6. Entropion occurring in the lower eyelid

4. On the treatment of warts that occur on the eyelids

Albucasis indicates in this chapter that these warts that appear on the eyelids may be moist or dry. They should be grasped with forceps or a hook and cut from their bases with a scalpel. Then powdered vitriol should be applied to the site. If bleeding occurs, cauterize it with a small, gentle lenticular cautery. Cauterization after excision is preferable, for warts often recur if any part of their base remains; but when they are cauterized with fire, those roots are destroyed and they do not return [11].



FIGURE 7. Warts of the eyelids

5. On the treatment of chalazion occurring in the eyelids

Albucasis indicates that it often happens that something appears on the eyelids resembling hail in its hardness and firmness; for this reason, it is called barad (chalazion). It consists of an accumulation of thick moisture in the upper or lower eyelid. The method of treatment is as follows: if the chalazion is prominent on the outer surface of the eyelid and can be moved in different directions, its treatment is easy. Make a transverse incision over it, then gently dissect it from all sides until it is freed; then seize it with a hook and excise it. If it is only possible to remove it after cutting through the eyelid, this will not harm the patient at all. If the incision is large, bring it together with sutures and treat it until it heals; if it is small, there is no concern, for the ointment will close and heal it. If the chalazion inclines inward toward the inner surface of the eyelid, then evert the eyelid and grasp the chalazion with a hook without the need for an incision, and excise it from all sides. If the eyelid is penetrated during the excision, this will not cause any harm. After removing the chalazion, wash the eye with salt water and treat the site with agents that promote healing until the patient recovers [12].

There is no doubt that the barad described by Albucasis is the same condition now known as chalazion, which occurs in the upper or lower eyelids. It is a chronic granulomatous lesion that develops in the Meibomian glands as a result of retention of glandular secretions caused by obstruction of their ducts. For purposes of treatment, Albucasis divided chalazion into two types: one located on the outer surface of the eyelid and another located on the inner surface of the eyelid. This distinction remains therapeutically important to this day. In the case of an external chalazion protruding on the outer surface of the eyelid, a surgical incision parallel to the eyelid margin is performed, followed by dissection and excision of the cyst (which corresponds to what Albucasis described). In the case of a chalazion protruding toward the inner surface of the eyelid, treatment is carried out by making a surgical incision after everting the eyelid; the incision is made perpendicular to the eyelid margin on the inner surface, in order to avoid injury to the conjunctival vessels, which run vertically relative to the eyelid margin [13].



FIGURE 8. Chalazion

6. On correcting molars that erupt abnormally (malposition molars)

Albucasis says if the molars erupt out of their proper course, they disfigure the appearance, especially when this occurs in women and young people. One should therefore examine the case: if a molar has erupted behind another molar and it is not possible to straighten or file it, then extract it; but if it is attached to another molar, then cut it [14].

This chapter represents a part of cosmetic surgery in dentistry. By 'erupted teeth' is meant teeth that protrude above the level of occlusion. At present, the specialty of orthodontics has resolved many problems related to erupted teeth through the use of bite-raising or bite-lowering appliances, depending on the case, as well as problems of dental crowding. Nevertheless, there is still, at times, a need to reshape the incisal edge of certain teeth to achieve a form required by the aesthetic situation, such as giving the canine a quadrilateral incisal shape in cases of loss of the lateral incisors. As for the filing of fractured teeth mentioned by Albucasis, there is no doubt that this remains necessary; today, some fractured edges are trimmed to prevent irritation of the tongue or lips, naturally using different instruments as a result of the development of tools, which have evolved to their modern forms.



FIGURE 9. Malposition molars

7. On the treatment of male breasts that resemble those of women (Gynecomastia)

Albucasis indicates that the breasts of some people may swell at the time of puberty until they come to resemble the breasts of women, and they remain as an ugly swelling. Whoever dislikes this should make a crescent-shaped incision over the breast in this manner, from point B to point C. Then remove all the fat, fill the wound with a healing medicament, bring the two lips of the wound together with sutures, and treat it until it heals. If the breast inclines downward and becomes lax because of its size, as happens with women, then one should make two incisions on its upper sides, resembling a crescent shape, each joining the other at their ends, so that the larger line surrounds the smaller, in this manner, from point B to point C. Then strip away the skin between the two incisions, remove the fat, and apply the suturing and powders and whatever treatment is needed until it heals. If it is not possible to remove all that should be excised because of the patient's agitation or because of bleeding, then the wound should be packed with cotton soaked in a caustic ointment, and left until it consumes what remains of the fat; thereafter it should be treated until it heals [15].

It is clear that in this chapter Albucasis explains the surgical treatment of gynecomastia in males. So, he refers to gynecomastia that occurs at the age of puberty as a cause of this condition and describes in detail its surgical management. It is now well known that gynecomastia has multiple causes, some of which are physiological—such as that occurring at puberty or between the ages of 50 and 70—and these do not require treatment because they regress spontaneously. Other cases are pathological, as in conditions such as liver cirrhosis, hyperthyroidism, Addison's

disease, testicular tumors, adrenal tumors, the use of antihypertensive medications, or estrogen therapy in cases of prostate cancer.

At present, management of this condition is primarily non-surgical and focuses on treating the underlying cause, unless the patient desires intervention for cosmetic reasons. Even then, it is recommended that at least two years pass before surgery is performed, as many cases improve spontaneously [16].

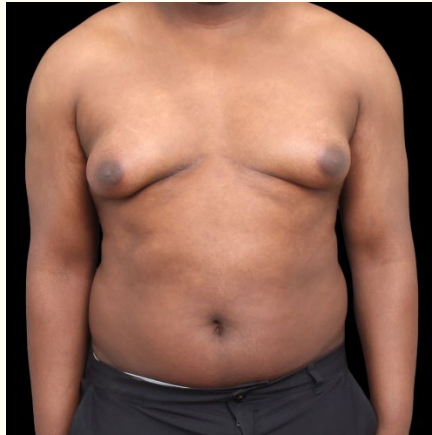


FIGURE 10. Gynecomastia

8. On excision of an extra finger and incision for the separation of fused fingers

In this chapter Albucasis explains the supernumerary finger that develops on the hands of some people, saying it may be entirely fleshy, or it may contain bone, or it may even have a nail. Some of these grow at the base of a joint of one of the fingers, while others grow on one of the phalanges. Those that grow on the phalanges do not move, whereas those that grow at the finger joint may move. If it is purely fleshy, its excision is easy: it should be cut at its base with a broad scalpel. As for those that grow at the base of a joint, their treatment is difficult, so one should refrain from cutting them. Those that grow on a finger at one of the phalanges should first have their flesh cut away in a circular manner down to the bone; then the bone should be sawn with one of the appropriate small saws, and thereafter treated until healing occurs [17]. Of course, this case represents polydactyly, where Albucasis refers to different types of extra fingers according to their form and site of origin. For their treatment, he first recommends making a circular incision through the skin down to the bone, followed by cutting the bone using one of the saws. This approach is very close to the method used today in the excision of a supernumerary finger.



FIGURE 11. Polydactylysm

Then, Albucasis indicates to the fusion that occurs between fingers, saying that this happens quite often. It may be congenital, or it may result from the healing of a wound, a burn, or the like. The adhesion should be incised so that the fingers return to their natural form. Then a wick or cloth soaked in rose oil should be placed between them to prevent rapid re-adhesion and to keep them separated, or a thin sheet of lead may be placed between them until the area heals as it should. Likewise, if fusion occurs between some of the fingers and the palm, that adhesion should be incised in whatever manner is feasible and appropriate to restore the proper shape of the limb [18]. Albucasis here first classifies syndactyly into two types according to its cause: congenital and acquired, the latter resulting from the healing of a wound or a burn. For treatment, he recommends incising this fusion. Albucasis may have been the only Arab physician of his time to mention and describe the condition of fused fingers and its method of treatment.



FIGURE 12. Syndactyly

9. On excision of pterygium

Albucasis decides that pterygium occurs in two forms: either it is fibrous (nervous), resembling a firm, thin membrane, or it is non-fibrous, resembling a solid white moisture which, if touched by an instrument or grasped with a hook, breaks apart and cannot be held by the hook. Both types begin at the greater canthus and then gradually advance little by little until they cover the pupil, obstructing light and the

movement of the eye. The method for excising it is as follows: the patient should place his head in your lap, then open his eyes while you lift the eyelid with your hand. You then seize the pterygium with a slightly curved hook and draw it upward. Next, take a needle threaded with a strand of horsehair or cow hair or with a thread, slightly bend the tip of the needle, insert it into the middle of the pterygium, pass it through, tie the pterygium with the thread, and draw it upward. Then, with the hair, strip the side of the pterygium that lies adjacent to the pupil, as if sawing it with the hair, all the way to its end. After that, cut what remains at the base near the canthus with a delicate scalpel or small scissors, leaving the natural tissue of the canthus intact, lest cutting it cause persistent tearing. The pterygium may also be drawn up with the hook alone, or with the thread as described, and then the edge may be stripped with a smooth scalpel [19].

It is well known now that Pterygium consists of a conjunctival invasion of the cornea with a triangular shape, and it is a common condition. Albucasis here distinct between two types of pterygium—fibrous and non-fibrous—may correspond to what is now known as progressive pterygium (which is thick, fleshy, and richly vascularized) and stationary pterygium (which is thin, membranous, and poorly vascularized). Albucasis statement that pterygium begins at the greater canthus (the medial canthus) accords with current knowledge, which confirms that pterygium always arises from the medial side. Again, Albucasis explains in detail the method for removing pterygium. What is particularly striking in this description is the great precision with which the procedure is outlined. He specifies the use of a “smooth scalpel with a blunt edge,” so that the instrument does not injure the corneal membrane, which would otherwise lead to corneal perforation [20].



FIGURE 13. Pterygium

10. On warts growing at the tip of the nose

Albucasis mentions that it often happens that a wart grows on the tip of the nose and enlarges and increases over time until its appearance becomes unsightly. It should be cut at its first appearance and completely excised, after which the site should be treated either with cauterization or with a caustic medicament that serves in place of cautery. If excision is delayed until it has grown large, then one should examine it: if it is hardened, firm, dark in color, and of diminished sensation, do not treat it with the knife, for it is a cancerous tumor. I have often seen those who cut such a tumor suffer a great calamity as a result. But if the tumor is soft to the touch, not dark in color, and you judge that complete excision is possible, then evacuate the patient and cut it without fear or hesitation, and treat the site with drying and astringent agents until it heals [21].

This chapter represents a description of nasal warts that grow on the tip of the nose. Albucasis statement that this wart enlarges and increases over time until its appearance becomes unsightly may correspond to what is now called rhinophyma. This condition is currently understood as a hyperplasia of the cutaneous system of the nasal pyramid, particularly in its lower half. It typically occurs after the age of fifty and is characterized by increased sebaceous gland secretion with inflammatory edema of the skin, while the underlying nasal framework remains normal beneath these deformities. This condition is treated surgically today by nasal resurfacing (dermabrasion or excisional shaving) [22].

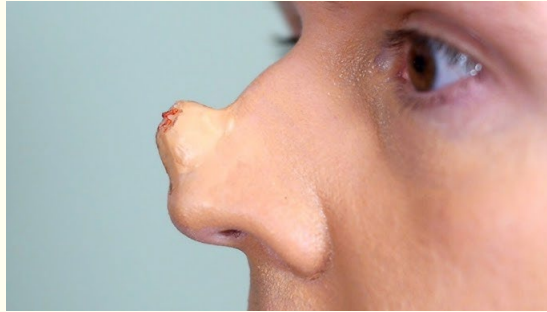


FIGURE 14. Wart at the tip of the nose

11. On laxity of the scrotal skin

Albucasis says that in many people, the skin of the scrotum becomes lax without the tissues within it becoming lax, and its appearance becomes unsightly. Whoever wishes to treat this should lay the patient on his back and excise all the lax skin down to the firm skin beneath, then bring the two edges together. If you wish, you may first place three or four sutures in the excess lax skin, secure them well, then cut away the skin between the sutures, and thereafter treat it as other wounds are treated until it heals and the sutures fall away [23].

In fact, modern medical textbooks do not contain any description of this condition. It appears that this condition was described by several Arab physicians. Avicenna says in his description: "Chapter on relaxation of the scrotum: the scrotum may become elongated and lax, resulting in an unsightly condition. For its treatment, it should be continuously tightened with astringent agents and bandaged with them, and sexual intercourse should be reduced. Some physicians excise part of the scrotum and the excess tissue and suture the remainder so that it becomes upright and its size is normalized. The better and safer method is to place the sutures first, then excise the excess." [24].

This condition may correspond to what is now known as scrotal edema resulting from ascites or lymphatic vessel injury.



FIGURE 15. laxity of the scrotal skin (scrotal edema)

12. On the excision of an enlarged clitoris

Albucasis says that the clitoris may sometimes increase beyond its natural size so that it becomes unsightly, and in some women, it may enlarge to the point that it protrudes like that of men and inclines toward sexual intercourse. In such cases, the excess of the clitoris should be grasped with the hand or with a hook and excised, but one should not cut deeply, especially at the base, lest bleeding occur. It should then be treated as other wounds are treated until it heals [25].

Many Arab physicians discussed enlargement of the clitoris. Avicenna says: "Something resembling a penis may appear on a woman, preventing intercourse; she may even be able to perform with other women something resembling copulation. This may be due to a greatly enlarged clitoris. It is treated by excision after laying the woman on her back, grasping the clitoris, and cutting it carefully from the depth and the base so that bleeding does not occur." [26].

Now, clitoral malformations are among the known congenital anomalies. Absence of the clitoris is the rarest, followed by clitoral duplication, which is also rare and treated with reconstructive surgery. Clitoral hypertrophy, although uncommon, is the most frequent of clitoral anomalies. Today, this condition is treated surgically by excising the clitoris if it is excessively large [27].

13. "On the treatment of children born with the urinary opening (meatus) in an abnormal position (hypospadias)

Albucasis indicates that some boys are born with the urinary opening at the end of the glans, so that they cannot urinate forward unless they lift the urethra with their hand, and semen cannot reach the uterus in a straight line, which is a very undesirable condition. The method of treatment is to lay the patient on his back, then stretch the glans firmly with your left hand and incise the tip of the urethra with a sharp scalpel or a fine lancet, as if carving a small projection, so that the center protrudes like the glans and the opening is positioned correctly. Take care to control bleeding, which occurs frequently, by cauterizing or otherwise stopping it, and treat the wound until it heals [28].

This case we call it now hypospadias. This is one of the most common congenital malformations of the urinary system. Albucasis treated this condition by what he called 'incising the tip of the urethra with a scalpel or sharp lancet.' Today, this malformation is corrected through urethroplasty procedures, which are tailored according to the position of the urethral meatus: glandular hypospadias, penile hypospadias, penoscrotal hypospadias, or perineal hypospadias [29].



FIGURE 16. Hypospadias

14- On observation of malpractice and ethics

Albucasis prefaced the treatise related to surgery of his book *al-Tasrif* with a very important introduction, related to malpractice and ethics, from which I consider it necessary to reproduce some important points and then to set out the most significant conclusions that may be drawn from it.

Albucasis says, “The author of this book said, ‘When I had completed for you, my sons, this book—which constitutes the totality of the theoretical science of medicine—and had reached the utmost limit in its clarity and explanation, I thought it proper to complete it for you with this treatise, which pertains to manual practice. For manual practice, though highly esteemed in our land and in our time, has utterly disappeared, to the point that its knowledge has almost vanished and its traces have been cut off. All that remains of it are scant outlines in the books of the ancients, which careless hands have corrupted and which error and confusion have overtaken, so that their meanings have become obscure and their benefit remote. I therefore resolved to revive it and to compose this treatise on it by way of explanation, clarification, and concision, and to include illustrations of cautery irons and all other instruments of practice, since this is an added means of elucidation. For in our time there is no craftsman proficient in manual practice, because the art of medicine is long and its practitioner must undergo training and discipline. Before all this, however, there is the science of anatomy, as described by Galen, so that one may understand the functions of the organs, their forms, temperaments, connections, and separations, and may know the bones, nerves, and muscles—their number and origins—as well as the pulsating and non-pulsating vessels and the sites of their emergence. For this reason, Hippocrates said, ‘Physicians in name are many, but indeed few,’ especially in the art of manual practice. We have already mentioned something of this in the introduction to this book; whoever is not knowledgeable in the anatomy we have described cannot but fall into errors by which people are killed, as I have witnessed in many who imagined

themselves learned in this science and claimed it without knowledge or understanding. My sons, you must know that manual practice is divided into two kinds: one accompanied by safety and another in which harm occurs in most cases. I have indicated in every place in this book the procedures that involve risk and danger; you must beware of them and avoid them, lest the ignorant find a pretext for blame and censure. Take for yourselves firmness and caution, and for your patients gentleness and deliberation. Follow the best path that leads to safety and a praiseworthy outcome, and avoid dangerous diseases that are difficult to cure. Keep yourselves free from what you fear may bring suspicion upon you in your religion and your worldly affairs, for this better preserves your dignity in this world and the next, according to your station. For Galen said in one of his counsels, “Do not treat wicked patients, lest you become wicked physicians.” [30]

Here, Albucasis acknowledges that there were many physicians in his time who practiced surgery; however, they did not master the craft and committed numerous errors, to the extent that one could find virtually no one who was truly proficient in manual practice in that era. Then, he concluded by offering advice to young physicians, whose youthful enthusiasm often drives them to use the scalpel without sufficient deliberation or caution. He warns them against the risks inherent in such recklessness, for fear that they may fall into serious errors. In this way, Albucasis appears as a seasoned and experienced surgeon, much like a modern surgeon who has spent decades in operating rooms, where increasing experience is accompanied by greater prudence, heightened caution, and constant vigilance.

15- Conclusion

This historical study demonstrates that Albucasis (al-Zahrāwī) occupies a foundational position in the history of cosmetic and reconstructive surgery. Through a careful reading of the surgical section of *Kitāb al-Taṣrīf*, it becomes evident that his work goes far beyond general surgery and enters domains that closely correspond to modern cosmetic, plastic, and reconstructive practices. Albucasis addressed conditions that affect both function and appearance, showing a sophisticated awareness of the psychological and social dimensions of bodily deformity—an approach that aligns closely with contemporary concepts of cosmetic surgery.

The procedures analyzed in this paper, including the management of eyelid deformities, chalazion, pterygium, gynecomastia, dental anomalies, syndactyly, polydactyly, nasal lesions, scrotal laxity, clitoral hypertrophy, and hypospadias, reveal a remarkable level of anatomical knowledge, surgical precision, and clinical judgment. Albucasis consistently emphasized careful incision planning, tissue preservation, control of bleeding, prevention of recurrence, and optimal wound healing—principles that remain central to modern surgical practice. His distinction between congenital and acquired conditions, as well as his adaptation of surgical techniques according to anatomical location, reflects a methodical and evidence-based approach a century ahead of its time.

Equally significant is Albucasis' contribution to surgical instrumentation. His detailed illustrations and descriptions of instruments not only facilitated the transmission of surgical knowledge but also standardized operative techniques, enabling safer and more reproducible outcomes. The wide dissemination of *al-Taṣrīf*

through Latin translations ensured that his influence extended deeply into medieval European surgery, shaping surgical education for nearly five centuries.

Albucasis should be recognized not merely as a medieval surgeon, but as a true pioneer of cosmetic and reconstructive surgery. His work represents a critical bridge between ancient surgical traditions and modern operative medicine, underscoring the profound and enduring impact of Arabic-Islamic medical scholarship on global medical history.

Conflict of Interest

The author declares no conflict of interest.

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