CONTRIBUTION OF AL ZAHRAWI IN GYNECOLOGY AND OBSTETRICS

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ABSTRACT

Current development of surgery is due to medical practitioners and surgeons practices and experiment throughout the history. Abdul Qasim al-Zahrawi (036-1013 A.C) was the greatest Muslim surgeon. He exerted a very deep influence up on the development of European surgery up to the 16th century. Infact he was the greatest surgeon of all time and the founder of modern surgery, the “Father of Surgery” .His renowned medical encyclopedia, “al- Tasrif” consisted of 30 sections and contained illustration of surgical instruments. It was first published in the year 1000 and it covered a broad range of topics from dentistry to child birth. Albucasis was an accomplished Obstetrician, but he also practice gynecology.

KEYWORDS: Al Zahrawi, History, Gynecology &Obstetrics, Unani system of medicine.

INTRODUCTION

During 8th to 15th century when Europe was in dark ages a great civilization was flourishing in Middle-East and southern part of Europe under Muslim empire. It was from Muslim Spain, that the era of modern civilization dawned over the whole Europe. Cordoba was the capital of Spain in 9th century which became the center of learning. The city had several teaching institutions and had the largest collection of books in the then known world which included
the original works of Aristotle and other great philosophers and scholars. European scholars flocked to the universities in Baghdad and Cordoba and returned home to spread the knowledge they gained. During this period a great surgeon who is truly recognized as father of surgery was born in Cordoba. Abu Qasim ibn-al-Zahrawi, also known in the West as Abul Casis, was born in the town of Al Zahra located six miles northwest of Cordoba, Spain. His ancestors were Arabs who settled in Spain in the 8th century. He lived most of his life in Cordoba where he received his education. He taught and practiced medicine and surgery in Cordoba and became the physician of Caliph. The street where he lived is named after him (Calle Abucasis) and his house has been preserved by the Spanish government. He is considered as father of surgery as he became famous throughout Europe for teaching new methods of surgery and inventing several instruments which were used in most of Europe until 17th - 18th century. In addition to his knowledge of medicine and surgery he was very skilled in the use of simple and compound remedies and thus he was also known as the “Pharmacist Surgeon”. He wrote extensively on cardiac drugs, emetics, laxatives and cosmetology. Translation of Al Zahrawi’s work “Liber Servitoris” provide readers an explanation of preparing simple and compound complex drugs that generally used in those days.\(^1\) His greatest contribution to the history of medicine is his famous book “Kitab-al-Tasrif”, a thirty volume encyclopedia on medicine which is based on his personal experiences in practice of medicine for 50 years. It was first published in the year 1000 and it covered a broad range of topics from dentistry to child birth. He had a sound knowledge and understanding of relevance of anatomy in surgical procedures. In the introduction of his book Al Tasrif, Zahrawi stated that learning the art of surgery is lengthy and a good practice in surgery required sound knowledge of anatomy. “He who devoted himself to surgery must be versed in the science of anatomy.”\(^2\) However the anatomical study of human body was problematic because it required dissection and a number of religious scholars apposed dissection of human body since it implied mutilation and disrespect of the diseased person. In spite of this opposition Al Zahrawi and other scholars made frequent references to dissection of both animal and human body.\(^3\) This shows an intellectual open mindedness in earlier Islamic time. During this period of Islamic history the Muslim Scientist created a non-dogmatic atmosphere that encouraged people to debate, share ideas and seek new knowledge and examining evidence.\(^4\) The third volume described detailed procedures of performing ophthalmic operations including “cataract”. Al Zahrawi was also an expert dental surgeon. He discussed the non-aligned teeth and showed a way to correct them. He also developed technique of replacing defective teeth. 105 chapters were devoted towards describing the
details of various operative procedures including amputation, and the crushing of bladder stones. He used the grooved probe for dislodging urethral obstructions and invented sponge tipped probe for dislodging foreign particles from the gullet. He also used a syringe for irrigation of the bladder and the cleaning of the ear. Al Zahrawi also wrote about obstetrics and described several instruments used for delivery. He was the first to describe the welcher position in obstetrics. His book contains the pictures of gynecological instruments used in the 10th century e.g. vaginal speculum and instruments to perform craniotomy for bringing out the dead fetus. He was the first to write about ectopic pregnancy. He also treated hydrocephalus in young children by making a small hole in the skull by means of cauterization to extract the fluid. The last volume of his encyclopedic book Al-Tasrif contained a description of 200 surgical instruments. The majority of these instruments were devised, designed, and used by Al Zahrawi himself. He included illustrations of the surgical instruments. These figures probably were the first of their kind that survived till now and they constituted a unique contribution to the history of surgery.

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.

Gynecological and Obstetrical diseases mentioned in Jarahiyat-e-Zahraw

1. Clitromegaly
2. Imperforated Hymen
3. Hemorrhoids, Boil and poly in the vagina
4. Abscess in uterus
5. Normal and Abnormal Presentation of fetus
6. Hydrocephalus

1. Clitromegaly

Clitoris usually gets bigger than its normal size even comes out and causes ugliness in some women. It increases very much rather it causes problem in coitus. The way of its operation is to hold its extended part with forcep and cut it but do not cut the lowermost part of the clitoris otherwise hemorrhage will occur.
II. Imperforated Hymen
Cryptomenorrhea is a condition in which there is no hole in the hymen of the patient or even, if present it is very small. This disease is either congenital or acquired. Acquired can be such conditions in which some other disease occurred. This causes increased flesh over hole. This condition is either in the depth of uterus or its side or upper part or lower part causes problem in the coitus, pregnancy, delivery and menses.

If it is like a thin membrane which appears around both lips of hymen then it should be cut in this way, so that it becomes equal. Women should be laid on her back and legs should be apart and enter thumb of both the hands in it and pull both the lips of hymen forcefully, so that the thin membrane tears off and obstruction opens. Then put a wool plug dipped in olive oil on it and every day she should have sexual intercourse.

If the membrane is thick and heavy then incision should be given which is similar to the leaf of Aas. If there is hardness due to flesh then also cut with forcep and you should keep such kind of medium which prevents hemorrhage like Acacia (Acacia Arabica) Bakayin (Melia azedarach). Kataan ((Linum usitatissimum)), White portion of egg, then put Raang ki lakdee so that wound don’t heal early ,and place suppository of Kataan((Linum usitatissimum), in it and do treatment of healing till it is healed completely. Sometimes, other flesh develops in the wound then cut them in the same way but carcinoma of the uterus should not be touched.

III. Hemorrhoids, Boil and polyp in the vagina
In case of polyp, the mouth of vessel is swollen and blood always flow from it. If the piles become chronic, then hemorrhoid develops. There are two types one which is curable and the other incurable.

If it is in the depth of uterus and there is no sensation then its treatment should be done by operation. When it is in the cervix, then operation should be done in this way that take the patient to some cold place and with the help of forceps or cloth, pluck the hemorrhoids and cut them from root. When blood starts oozing then following drugs should be used. e.g Acacia (Acacia Arabica), Bakayin (Melia azedarach), Kataan (Linum usitatissimum) etc. Then lift the both the legs of the patient and burst, Even then blood oozes out then she should be allowed to sit with Maazu (Quercus infectoria). Then make dough of honey and vinegar and apply this paste on the back .If the blood stops then its better and if not then apply cupping on the back and legs. Then, dip the wool in Baartang (Plantago major) or
water of its small shrubs and mix the alcohol of Maazu (Quercus infectoria). in it too, then place this wool plug on the site when the inflammation subsides, then apply pastes on it.

IV. Abscess in uterus
Sometimes, inside uterus some types of inflammation occurs like cancer, aakla rehm, abscesses in uterus, and it become like hot inflammation/swelling. Here, we are discussing about the inflammation of cervix. If it remains for long time, then operation should be done. But it should be made sure that patient do not complain of pain in the beginning in which there is burning sensation and fever, site becomes red and indurate. Then it should never be operated, but adiya musakhina should be used. When these symptoms subside, then patient should be allowed to sit on a chair on which there are two spaces to it. Patient should sit with back and lie down a little and put her both feets near abdomen. Then she should place her wrists between her knees and tie them with convenient rope. Then Obstetrician should be sit on the right side of the patient and insert the instrument into the vagina and open the cervix. The instrument should be round in shape. When the instrument is introduced it should be seen that it should not go deep inside so, that patient should not feel pain. If the instrument is longer than the uterus then put cloth on the lips of cervix. So that the instrument donot go deep inside the uterus. Then the lip which moves over the instrument should be moved, and then stop the instrument and move the lip till the cervix is opened.

When abscesses appears and is soft then give an incision when all the pus is drained then apply roghan-e-gul or dip a cotton plugin the roghan-e-zaitoon (Olea europea).

V. Abnormal presentation and its management
The symptoms of natural delivery are the patient to stop her breath and bear down and will gasp her breath, delivery will be easy and fetus will come out easily. If it come in this way, its head comes first and its placenta come out along with umbilical cord, when you see this then put the pressure on the back so that the fetus is expelled out easily. When it comes with its head first then it comes with placenta then you will be able to clean it properly. Some times fetus comes with its back first, sometimes instead of head, both the hands and both feets come out first. Sometimes gets reversed from neck. Sometime there is compound presentation, so that the obstetrician should be intelligent and should not do any mistake.

When the fetus come out normally and you see that the patient is feeling a lot of pain and has become weak then ask the patient to sit on the chair and hold it firmly and dip her feet in a
boiled *hulba* or *martoob tail*. Then the obstetrician should give a small incision on the bag of membrane to allow the fluid to come out. Then massage over her stomach so that the fetus come out. If it does not come out then use enema of *hulba* and *shatranj*. After enema ask her to do cough and bring sneezing with *Kundish* (Styrax benzoin) and close her mouth and nose for some time, fetus will come out.

If the hands of fetus come out first, then slowly put it back. If it does not go back then allow the patient to lie down on a table, lift her feets upwards, then lift the table upwards and bend towards the ground. Hold the patient so that she should not fall. At the time of vaginal examination, if the hand does not go back and fetus dies than cut it and take out. put clothes on his both hands and slowly pull the fetus.

If the fetus comes with his feet first, then obstetrician should lift it upwards, and slowly give movement. If the thighs comes out then, patient should be allowed to do sneezing with *kandish* (Styrax benzoin) and cough, full fetus will come out after applying these methods. if these methods do not work then retract back the thighs as was earlier. If it does not come out in this way too then *khatmii* (Althaea officinalis), *hulba* (Trigonilla foenum) and *roghen shatranj* (Oil of Plumbago zeylanica) and dissolve in *gound-e-hawin* and used as *tila* over vagina and on lower side of back, then allow the patient to sit on lukewarm water till it reaches the umbilicus & when you see her lower side has become soft then for *haroo* of *shiyaaf* should be kept for some time, then allow to sit her on chair & use *kandish* (Styrax benzoin) for sneezing & close mouth & nose & press her lower abdomen, fetus will come out.

If fetus comes out with knees & hands then return the hands slowly into the uterus & ask the patient to lie down & move the feet backwards & should press her both hands & slowly press the abdomen & take out the pillows from below her legs so that her lower back comes down, even then the fetus does not come out then move the legs very fast & slightly massage the sahsareef. So that the fetus moves upwards then obstetrician should enter her hand & slowly pull the fetus out.

If fetus comes out with her hand first which is shrinked. If it happens then abruptly return his hands back, if it do not happen then make the woman stand & walk & if she could not move & lie her down on bed & move her legs very hard & in *laobiyaat* (Mucilage) and *latoaq* (The medicine which is less concentrated than ointment and more concentrated than oil). Even If
it does not come out then make her sit on a chair and return the hand back. Make the woman sneeze, should be advised to do coughing so till the fetus comes out.

If the fetus comes out with his neck & his both hands are separated & his face is towards his mother’s back obstetrician should hold her hand & slightly move it & very softly make it equal & when it is equal then apply *laobiyaat* (Mucilage) oil over the vagina.

Then ask her to move slowly, when she moves make her sit on a chair & make her tilt on right side then ask her do coughing & make her sneeze with *kundish* (Styrax benzoin) till the fetus comes out.

If fetus comes out as she stands. If the fetus comes with placenta till cervix then give an incision with your nail so that it’s all fluid comes out. If it comes to face & neck of fetus then cut from its umbilical cord so that hypoxia do not occurs then push the baby inside so that it comes to its original position. Then ask the patient to do coughing several times, fetus will come out easily.

**VI. Hydrocephalous**

If the head of the fetus is big (hydrocephalous) & it causes obstruction in expulsion. If water gets accumulated in head & take craniotomy in fingers & enter them & give an incision in head so that water comes out & then take it out with the help of craniotomy. If the size of head is big then give an incision on the head (skull) & then pull it with the forcep & take out bones with the help of craniotomy. If the head comes out & gets obstructed near clavicle then give the incision, till the fluid which is accumulated in chest comes out. After incision, chest will shrink. If chest do not shrink & could not come out then should be broken into pieces should taken out. If the lower part of body is swollen, & there is fluid in it .then give an incision on it till the fluid escapes. If the fetus is on her feet then its removal is very easy & to make it equal in cervix is easy. If it gets strucked in between abdomen & chest then tie a cloth on your hand & pull & give incision on abdomen & chest till everything escapes& if all the organs come out & head gets stuck. Then obstetrician should enter her left hand & if the cervix is dilated then enter your hand in internal Os & then hold the head & pull towards cervix & enter one or two forceps & pull them. If the cervix becomes inflamed & closed then it should be done forcefully then at that time apply oil should be entered & paste should be used, then ask the patient to sit in water till the uterus become moist & open. If the fetus is on its abnormal position then make sure to make it equal as we make a live fetus equal & if not
possible then break it & take it out but no part of placenta should be retained in & when this work is done then treat the inflammation & haemorrhage occurs then she should be allowed to sit in astringent water & other treatment should be done. I have seen a woman who is pregnant but her fetus died. The again she become pregnant & again the fetus died. After a long time a pain started in her abdomen & it swelled & pus increased. I treated that patient very long time and finally she give a live fetus.[6]

CONCLUSION

“Alzahrawi” who is regarded as the father of modern surgery, and rightfully so. He was a great surgeon, a pioneer in surgical innovation and a great teacher whose comprehensive medical texts had shaped the European surgical procedures up until there naissance and later. He devoted his life and life work to his patients and students. None of his contemporary medieval surgeons could be compared to him and the entire famous renaissance surgeon had quoted him. No doubt he was the chief of all surgeons. The contribution of “Alzahrawi” in gynecology and obstetric lead the foundation of surgical instruments which are used now a days and he treated the gynecological and obstetrical disorders in a tremendous way.

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