Muslim Contribution to Surgery

Pages with reference to book, From 218 To 221

M.H.A. Beg (ENT Department, K.V.S.S. SITE Hospital, Karachi.)

Surgery was not taught in most medical universities before the advent of Islam. Ignorant barbers wielded the knife. This may have been due to the belief of Hippocates on the healing power of nature rather than unnecessary interference with surgery[1].

During the Muslim rule i.e. from 8th to 13th century, a peak period of Muslim development[2] many original contributions were made in the teaching and practice of surgery. The common surgery done at that time included venesection, cupping, application of leeches, cauterization and war surgery.[3]

Hunaiñ Bin Ishaq (809.877 A.D) translated Greek literature into the Arabic language and wrote a treatise on dentistry. This is the first comprehensive presentation in this field.[4]

Mohammad Bin Zakaria Razi (850-923 A.D.) wrote a monograph on Bladder and Kidney stones[5]. His description of Nasal Allergy is the first case report of this condition[6]. He also invented Seton in Surgery.[7]

Ali Bin Abbas Al-Ma/usi (Died 994 A.D.) wrote a system of Medicine with a separate surgical section. Laryngotomy was described by him. He was very clear and concise about catheterization[8] and recommended excision of breast cancer with amputation of the whole breast[9]. He had the same opinion for cancer of the extremities. Majusi used silk to ligate arteries[10].

Abul Qasim Al-Zohravi (936-1013 A.D.) was the greatest muslim Surgeon practicing in Cordoba. In this period a Surgeon was ostracized in Western Europe whereas the cleric physician refused to shed blood. Surgery would have lapsed entirely but for the work of Zohravi, who wrote a voluminous book, At-tasreef consisting of 30 volumes, the last part of which deals with surgery. This has been used for 500 years in the West as the text book of surgery. It is illustrated with drawings of 200 instruments[11] and contains many original observations including the earliest known description of haemophillia.

The book is divided into three parts. The first describes cauterization, the second discusses incisions and healing of wounds whereas the third part deals with healing of fractures[12] Zoharvi laid great stress on the knowledge of anatomy. He has cited four examples in his book where disaster occurred due to the Surgeon being unaware of the anatomy. Zohravi also described many new instruments including the Tonsil Guillotine, the Vaginal speculum, the Syringe, trocar, concealed knife and obstetric forceps. He used animal gut for. suturing and a powder for healing of fractures. He was a full fledged Surgeon operating on any pathology from head to toe. It may have been a nasal polyp or amputation of a limb or removal of arrows from the body. Zohravi was called the master of Cauterization. Wounds were scared, cancers removed and abscesses opened by the famous branding iron. A lithotrite to crush bladder stones was used by him. To ease child birth he recommended the so-called Waicher's position in which a woman lies with her hips at the edge of a table while her legs hang below[13] . For treatment of cancer he removed it completely with its roots[9]. Arabic manuscripts of his book have preserved the original oriental artistic features of the drawings that have been overlooked in the Latin and vernacular version of At-Tasreef.[14]

Abu All Al-Husain Ibn-e-Abdullah Thn-e-Seena (980-1037 A.D.) included surgery in a separate portion of the fourth volume. Incisions should be made along the folds and creases of the skin was taught by him, and be advised to keep away from nerves, arteries and veins.[15] Care to prevent infection at the time of surgery was emphasized by him as he was aware that infection prevents healing.[16] He also recommended the washing of wounds with wine as he was the first physician to have the knowledge of

the antiseptic properties of wine.[17] Ibn-e-Seena discussed midwifery and gynaecology in his book. He compared cancer with a crab with its feet and suggested cauterization after amputation. He was of the opinion that fractured bones should be brought into close alignment for quick and proper healing, and was very methodical with divided nerves in bringing them close together and suturing the capsules as is done at present for the facial nerve.[18] He was an inventor of surgical instruments, one of them for setting dislocated vertebrae. Four of his instruments, have recently been re-constructed in Uzbakistan, USSR from his figures.[19] Animal experiments were proposed by Ibn-e-Seena and he also wrote a treatise on colic with a special chapter on the management of pain.

Ibn-e-Seena wrote two formulae of soporific drinks containing cannabis Indica, Ergot, Atropa and opium to be used along with wine.[20] He used to arouse the patient with vinegar. The soporific sponge has been mentioned in other books, and inhalation anaesthesia is well known in the Arab literature as Alif Laila "Ahmed Kamarkin drugs the guard with hemp fumes".[21]

Ophthalmology was the only developed surgical speciality in Muslim medicine. Ophthalmic care was high and specialist training and assessments were known. Practice in this speciality was not permitted until the gross anatomy of the eye, principles of eye diseases and preparation of ointments was made familiar. The Ophthalmologists were instructed not to lend out their instruments to unauthorized Ibn-e-Seena was the first person to treat a Lachrymal fistula by introducing a probe for the channel.[22] He also described the anatomy of the eyeball muscles.

Abu All Ibn-e-Al-Hasan Ibn-e--Al-Haisam (965-1039 A.D) was not a practicing physician but was interested in Optics. In his treatise on optics he published theories on refraction, reflection, binocular vision, focussing with lenses, parabolic and spherical mirrors, spherical aberration and atmospheric refraction. He was the first person to give an accurate account of vision, stating that light emits from the object to the eye[23].

The entire western optics are based on the theories of AL-Haisam[24] who was the greatest Muslim physicist and one of the greatest students of optics of all times.

Isa Ibn-e-Ali (Died 1010 A.D.). Practiced Ophthalmology and wrote the book Tazkera-tulKahalain on the diseases of the eye[25]. Extensive work has been done by Muslim ophthalmologists on cataract surgery. Special triangular needles were used to promote quick healing of wounds and cotton or silk was used for sutures.

Isa Ibn.e-Ali speaks of General Anaesthesia in four places in his book. "In case the patient is one of those who cannot hold still and causes trouble, put him to sleep and let one assistant hold his head and the other his arm".He described Mandragora and Opium as drugs which produce sleep.

Ammar Bin All (996-1020A.D.) practiced ophthalmology in Mosul. The suction technique for cataract operation has been quoted by him[26] prior to this couching of the cataract was the usual practice.

Ibn-e-Rushd (1126 - 1198 A.D) wrote a separate section on Anatomy in his book, along with one on surgery. He described the treatment of abscesses, checking of haemorrhage, use of cautery and management of fractured bones.

Abdul Latif Al-Baghdadi (1102-1231 A.D) established that the lower jaw consists of one piece of bone and not two. He studied the human skeleton and concluded that Galen's description of osteology was wrong in many respects.[21]

Ibn-e-Zuhr (1091-1161 A.D) is the first Physician who determined that bones also have sensitivity. He quoted the operations of renal calculi and tracheostomy.[27] He also gave a description of pharyngeal paralysis, inflammation of the middle ear, mediastinal abscess and serous pericarditis. For patients who developed dysphagia he advised insertion of silver tubes in the throat. Nutrient enemas have also been mentioned by him. Ibn-eZuhr also performed extraction of cataracts.

Moosa Bin Maimoon (1135-1205 AD.) wrote a monograph on haemorrhoids[28] attributing constipation as its cause and suggesting various diets to relieve it. He also improved upon the procedure of

circumcision.[29] He formulated an oath for physicians which is adopted instead of the Hippocratic oath by many Jewish doctors in the United States even in present times. The American College of Surgeons distributes this oath to its fellows.

Ibn-e-Nafls (1210-1290 A.D) in his book Mejaz-ul-Qanoon described for the first time the pulmonary circulation.[30]

Ibn-e-Khatib (1313-1379 A.D) wrote on the transfer of infection from one person to another.

He also gave an exact version of the symptoms of plague. A book on general pathology was also published by him.

The contribution of Muslim physicians to the field of Surgery, during the early days is a great honour. This became a foundation for the entire world, to build upon it multistories of scientific research.

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