The ancient Egyptians were undoubtedly one of the greatest civilizations of antiquity. They were highly innovative in the field of medical practice and in surgery in particular and developed impressive technologically advanced surgical instruments many of which are on display in the Egyptian and the Coptic Museums in Cairo. Egyptian medicine surpassed both the Greeks and Romans when it came to levels of knowledge and intricacy even though it occupied a position between empirical science and superstitious magic. Egyptian medicine is at the very foundation of modern Western medicine. This article reviews medical practice and organization in ancient Egypt and will be of interest to especially those involved in the medical field.

**ABSTRACT**

The ancient Egyptians were undoubtedly one of the greatest civilizations of antiquity. They were highly innovative in the field of medical practice and in surgery in particular and developed impressive technologically advanced surgical instruments many of which are on display in the Egyptian and the Coptic Museums in Cairo. Egyptian medicine surpassed both the Greeks and Romans when it came to levels of knowledge and intricacy even though it occupied a position between empirical science and superstitious magic. Egyptian medicine is at the very foundation of modern Western medicine. This article reviews medical practice and organization in ancient Egypt and will be of interest to especially those involved in the medical field.

**KEYWORDS**

Surgery; ancient Egypt; physicians.

**INTRODUCTION**

The period 2780-2200 B.C. is referred to as the Old Kingdom period of ancient Egypt. It was during this period that the great pyramids of Giza were erected. The following centuries, namely the Sixth to Eleventh dynasties, witnessed the weakening of the central government, which was at least somewhat re-established during the Eleventh and Twelfth dynasties. This period we refer to as the Middle Kingdom (2000-1750 B.C.) and is also called the “Classical Age” which designates the high intellectual emphasis of the period in which especially medicine held a prominent position. A number of ancient papyri from these periods have endured the ravages of time which allow us to study the refined techniques applied by Ancient Egyptian physicians. Essentially, surgery was considered by the ancients to be merely one aspect of a physician’s work. Surgery was a science and occupied the minds of Egyptians from as early as 4000 B.C. The evidence at hand suggests that the Egyptians possessed much knowledge on how to mend physical injuries sustained by their people. Initially, our understanding of Egyptian surgery in the Pharaonic era was obtained from the many writings of Greek and Roman observers including inter alia, Hippocrates, Homer, Herodotus, Pliny the Elder and Diodorus. However, since the unveiling of a number of newly discovered papyri in the 20th Century, our understanding and knowledge of ancient Egyptian medicine has somewhat altered. In Ancient Egypt there was no pure research but whatever research was conducted, turned up recipes rather than laws that were intended to solve one or other problem. The documents uncovered reveal the limitations of Ancient Egyptian scientific knowledge, medicine being no exception. When a physician could not treat a patient he would not hesitate to say that the disease was untreatable. They were thus pragmatic physicians who met the practical requirements of their patients without reflecting on why or what they did.

The medical papyri, housed in numerous museums indicate the huge progress and innovation made by Egyptian surgeons of antiquity. The oldest of the medical papyri dates back at least to the early period of the Old Kingdom while a number of other are dated to the Middle Kingdom. The oldest papyrus uncovered, the Middle Kingdom period Kahon Papyrus, deals with aspects of veterinary medical science and gynaecology. This was discovered in the ruins of the city of Al-Lahun Pyramid, in El-Fayyum back in 1889. An interesting section explains that there are seventeen signs by which the gender of an unborn child can be known by.

The Edwin Smith Papyrus discovered in 1862 (from about 1550 B.C.) is concerned with a host of surgical matters. In the initial part of this instructional papyrus, are recorded 48 scenes of bone surgery and general surgery beginning from the head, nose, jaw, neck, collar-bone, vertebra, ribs, hands, and finally proceeding to the thorax and abdomen section of the human body. Instructions on the diagnosis of ailments, how to treat patients and their prognosis, abound in this papyrus. It has been suggested that the due to the nature of ailments discussed, this papyrus was supervising the recovery of injured workmen who were involved in pyramid construction. This has been suggested since many of the injuries listed were head injuries received by objects falling from considerable heights.

Another papyrus discovered in 1862, was the Georg Ebers Papyrus, dating from 1600 B.C. is the longest of the medical papyri. It is an general medical healing text covering a variety of medical subjects, including pharmacologic and mechanical means of treatment. In this papyrus we find descriptions of a range of stomach diseases, the functioning of the heart and blood vessels and instructions on how to excise tumours and abscesses. Special mention is made of Angina or Coronary Heart Blockage. In addition to the medical instructions it also includes a host of incantations and verbal charms that both physician and patient should repeat, as these allegedly cured diseases. This is also the case in the London Medical Papyrus dating back to the year 1800 B.C. The Hearst Papyrus (about 1600 B.C.), discovered in 1899 in Deir Al Balas, is well preserved and contains 250 lines on surgical techniques. The London Medical Papyrus, the Berlin and Chester Beatty (late 1300 B.C.) – which deals almost entirely with the treatment of colorectal diseases, appear to have been practical handbooks for physicians, whereas the Smith and Ebers papyri appear to have been teaching materials especially designed for novice doctors.
Kidney stones were also common as was tuberculosis.\textsuperscript{[5]} The Ruffer (1910) report is the best case of spinal tuberculosis from ancient Egypt.\textsuperscript{[6]} Pathologic findings in mummies also suggest that Arteriosclerosis was a disease of the ancient Egyptians and that bone tumors also existed. Epidemic disease such as the plague, primarily carried by rodents, especially rats, and spread to humans through fleas was also common. Acute illnesses, especially hypertension and diabetes, were also well known even though their detailed typologies are difficult for us to reconstruct. There is evidence that poliomyelitis existed as seen in some temple reliefs. The incidence of malignant tumors was almost as frequent then as it is today in comparable gender and age groups. Kidney and bladder stones, and arthritis and gout, and were also frequently acquired maladies.\textsuperscript{[7]} Silicosis of the lungs, caused by the inhalation of airborne sand particles, is well documented and this was a very frequent cause of death, as was pneumonia.\textsuperscript{[8]} Other prevalent diseases were typhoid, smallpox, diarrhoea, dysentery, jaundice and relapsing fever which resulted in many deaths, especially during spring and summer months.

**DISEASE IN ANCIENT EGYPT**

Evidence of disease in ancient Egypt was in one of three categories, namely images of healing in art, skeletal and mummified remains and papyri written in hieroglyphics which are literary references. It is clear that a wide variety of maladies afflicted the ancient Egyptians\textsuperscript{[9]} both congenital as well as acquired. The latter developed due to the harsh environment and cultural practices that were adopted. Many of these diseases are identified from the descriptive reports found in the papyri mentioned earlier as well as other papyri. The papyri contain a range of pictorial representations as well as inscriptions and offer contemporary accounts of disease and the role of physicians in the healing process. Mention is also made of mumification and its processes and death and the afterlife.

Many illnesses were the direct result of bites by serpents or scorpions and these are recorded in manuscripts. The occurrence of cirrhosis of the liver was widespread and ascribed to the large volumes of both beer and wine that were consumed. There is also evidence of pneumonia and appendicitis. Eye diseases were common and very prominent in healing manuscripts. This was due to the sand and dust of the desert climate.\textsuperscript{[10]}

Diseases included infections such as trachoma, cataracts, night blindness, problems associated with the eyelids, strabismus, eyelid twitching and bulging eyes. Many diseases resulted from water and food contamination, especially gastro-intestinal ailments, were very common as evidenced in papyri and mummies, and parasitic infestations, such as bilharzia (schistosomiasis), tapeworm, guinea-worm and roundworm were widespread as is the case in the modern day populus.\textsuperscript{[11]}

Sir Marc Ruffer found mummies in 1910 that were dated to the New Kingdom XX dynasty (1550-1070 B.C.) and these still had kidneys. This was strange when the majority of mummies from this period had cystic lesions of the bifid ribs and jaw, indicating parasitic infection was present. Mosquitoes were a common problem in the Nilotic region and spread filarial worms which caused the disfiguring disease of elephantiasis. This disease was rare but resulted in huge suffering for those afflicted with it.

**THE ROLE OF DEITIES IN HEALING**

Each of the deities of Ancient Egypt, were in some way or other connected with some facet of health or illness. Ra, the sun-god, occupied the pinnacle in the pantheon of gods. Isis was venerated as a healing goddess and her cult continued for centuries. Isis was worshipped universally by all Egyptians and she was respected as the great protector, and was often prayed to for guidance on medical matters. Her brother was Osiris, a personification of the Nile River. Pregnant women also prayed to the goddessess Bes and Thoeris to reduce pain in labour. It was however Hathor the mistress of heaven and protector of women in childbirth, who was a favoured healer while Keket was the god who provided fertility to both women and men. Her ram-headed consort Khnum, was believed to fashion each child and he was the one who fashioned its ka, or spiritual being.

The major healing deities were Thoth, the physician to the gods, and Imhotep. Thoth was the patron god of physicians (as their source of medical knowledge) and of the scribes (as the inventors of writing). Imhotep was the first physician mentioned during reign of King Zoser (2923 B.C.) and was originally a scribe and later a physician and by the sixth century B.C., he was deified and replaced Thoth as the chief healing god of ancient Egypt and was given a divine father, the god Ptah. Imhotep practiced medicine about a thousand years before the birth of Hippocrates, and is cited by some, as the father of medicine. His name denotes “he who comes in peace”, and he was the only non-royal personage raised to godhood by the ancient Egyptians. He was the prototype of the Greek Asclepios and Thoth was the prototype of Hermes and Mercury.

**DOCTORS**

Although they were not as refined as the doctors of ancient Greece, medical practitioners from Egypt enjoyed a good reputation throughout Egypt and they were often summoned to treat members of the aristocracy in areas such as Persia and Palestine. The Egyptian word for a physician was swnw. Surgeons appear to have been known as w-h’-w, or “great ones of the body”.\textsuperscript{[12]}

The evidence from the Ebers and Edwin Smith papyri, suggests that the priests of Sekhmet (a warrior goddess who brought disease and death) were in fact surgeons and were linked with those who were ‘magicians’.\textsuperscript{[13]} The Priests of Sekhmet were basically venerated as ‘saints’ of disease and healing and were represented by the head of a lioness on a woman’s body and fire. The latter due to the practice of cauterezation.
There are recorded cases of malpractice suits and doctors were warned to make use of only the methods disseminated in authoritative ancient expositions. Only in this way would their actions be above reproach. The earliest recorded physician was Hesy-Ra, 2700 B.C., who was referred to as the ‘Chief of Dentists and Doctors’. According to the famous Tell el Amarna letters, the most renowned physician was an abdominal surgeon called Akhenaton. He served as a priest of the god Aton in the temple of Aton. The first recorded female doctor as per a relief date 2400 B.C., was Peshet as ‘my-rt-smwry’ or ‘lady director of lady physicians’, who was commonly referred to as the ‘supervisor’ of all female doctors.[1] There is no other reference yet uncovered to suggest that women generally held medical posts. Physicians were considered to be part of the high social order since about 4000 B.C. The Senior Physician was called the “Overseeer of the House of Health” or “Chief of the House of Secrets”.[2]

The physicians obtained much practical and theoretical knowledge in the Peri-Ankh or the Houses of Life where various medical papyri documenting procedures were deposited. The standards of training and of practice were rigorous and were set by the pharaoh’s Chief Physician. In the hierarchical matrix, the Chief Physician managed the palace physicians and their direct supervising physician. There were also a range of lesser chief medical practitioners and a lower order of other doctors who were in the majority in the discipline. There were specialists for teeth, eyes, the belly, Rectum, secret arts and liquids and of course surgery.[3]

Certain physicians were tasked with treating miners, while others for example would treat workmen or serve in the army. Temple physicians who were on lower social rung were to be used by all and they undertook house-visits. According to the tombstone of Iry, the Chief Physician to a pharaoh of the Sixth Dynasty (2625-2475 B.C.), we are given to understand that he was the “palace eye physician” as well as “palace stomach bowel physician” and given the titles “one understanding the internal fluids” and “guardian of the anus”. A physician by the name of Sekhetnankh was described as a “doctor of the nasal passages” to Sahure.[4]

There were a number of special schools for training physicians who emigrated from all social classes, and these were usually linked to temples. Many were scribes as well as doctors. Surgeons underwent a rudimentary specialized training but not all doctors were surgeons. Because a number of papyri such as the Ebers Papyrus, the Egyptians regarded the anatomical and physiological makeup of the human body as a system of channels or metu similar to the network of canals in the Nile Delta. The heart was considered to be at the center of the entire system, and was the place from which the metu delivered and received. The pulsation of the heart was well known and the Smith Papyrus states: “Its pulsation is in every vessel of every member.” Air entered via the nose and entered all the channels. It was then delivered to the heart from where it was pumped to all the parts of the body. The metu also conducted blood, urine, sperm tears and faeces. The channels around the anus merged into a collecting system where the contents of the rectum entered the system. This often caused problems and so, intestinal contents were often cleaned out by the use of emetics, purges, and even enemas. It appears that the Egyptians misinterpreted much of what they viewed, as is clear from a number of papyri. Diagnosis of disease was somewhat primitive and patient examination was a complex procedure and comprised digitally analyzing wounds and studying the sputum, urine, faeces, and other secretions. Medical classifications were based on symptoms rather than diseases.

MEDICATION

Ancient Egyptian physicians administered a wide range of medications in various forms. These included as tablets, drops, cakes, suppositorys, ointments, mouth rinses, fumigations, and special baths. According to the Ebers Papyrus the Egyptians were first recorded people to use the technique of colon lavage or enema. Enemas were a popular method for the introduction of various drugs as well as a way to evacuate the bowels. One pharaoh had a ‘guardian of the anus’ – who administered all his enemas. Enemas are recorded to later, in 1500 BC in old Egyptian papyri; as well as by Herodotus and Diodorus of Classical Greece. Enemas were applied using water, milk, beer, and wine, each sweetened with honey, and the ingredients were believed to effectively remedy a variety of problems, not only illness. Mouldy bread was also used due its antibiotic properties, thousands of years before Alexander Fleming discovered penicillin. Castor oil was used both as an internal drug and also as a medication for wounds and soothing of irritated areas. Most physicians charged for the dispensing of medications and many appear to have prepared their own medicines.
The medical papyri have made us aware of a wide range of the Ancient Egyptian treatments and prescriptions for various diseases. They describe the treatment of many disorders and the use of a many substances, from inter alia, plants, animals and minerals. Physicians adapted their prescriptions to suit the patients age and weight and knew how to use suppositories, herbal dressings and enemas and used castor oil widely. Honey and milk were used for respiratory system ailments as well as throat irritations in the dry desert environment. Honey, which is a natural antibiotic, was also used to dress wounds. Aloe Vera was used to treat worms, to aid in relieving headaches, for ulcers, soothe chest pains, burns and for skin diseases. Frankincense was also extensively used to treat throat and larynx infections as well as in treating asthma. Dill was used to soothe flatulence, as well as for its laxative and diuretic properties. Thyme was also used as a pain reliever. Caraway was also used to treat flatulence and doubled as a breath freshener. Balsam Apple or Apple of Jerusalem was used as a laxative. Garlic was believed to provide viability, limit flatulence and aid digestion. It also shrank hemorrhoids and rid the body of evil spirits. Camphor tree oil was used to reduce fevers, soothe aching gums, and treat epilepsy. The juniper tree was utilized to treat digestive ailments, relieve chest pains and stomach cramps. Mustard seeds were used to induce vomiting and relieve chest pains. Onions could be used to induce perspiration and prevented colds. Parsley was used as a diuretic. Mint was used to ease flatulence. It also aided digestion and stopped vomiting. At times it was a good breath freshener. Sandalwood was used to aid digestion, stop diarrhea, and in the treatment of gout. Sesame was also useful in easing asthma. Poppy seeds were used to relieve insomnia, headaches, and also served as an anesthetic. They often used odd products such as the excrement of various animals and lizard blood. Whatever they used to treat patients was accompanied by incantations. Considering the belief that diet accounts for all disease, including atherosclerosis, they recommended that patients clear themselves out for at least three days a month, using emetics and purgatives.

**SURGERY**

The earliest recorded depiction of surgery is that found in Ancient Egyptian ruins and early papyri of the Old Kingdom (2705-2250 B.C.) The ancient Egyptian word for ‘surgery’ was formulated in two parts. The first word xelp means the hand and the word eyypo, meaning work, thus ‘work of the hands’. Celsus also defined surgery as a branch of medicine which cures ailments ‘by hand’. There is a vast collection of surgical instruments that were used during the Pharaonic era in the Egyptian Museum in Cairo. These are categorised as mumification instruments and as general surgical instruments. Amongst these is a set of copper knives dating back to 3000 BC and they are believed to be some of the first surgical instruments ever recorded. Embalming of corpses involved the removal of all the major organs – the brain, stomach, liver, intestines and lungs – so as to prevent the body rotting. Egyptian surgeons distinguished where the major organs were, but since they believed the body was necessary for the afterlife, it could not be wholly dissected.

Egyptian physicians were of the opinion that three types of injuries existed. Firstly they spoke of treatable injuries – which were immediately dealt with. Secondly, there were contestable injuries – these were believed not to be life-threatening, and so the patient could survive without medical intervention but would be observed. Lastly there were untreatable diseases – in such cases the doctor would not intervene at all. The Ancient Egyptians recorded surgical procedures as early as 2500 BC. At Saqqara a tomb of a certain Ankh-Mahor, known as The Tomb of the Physician, was uncovered. The images on the tomb walls portray two men having treatment and this is explained as massage, manicure or surgery.

Surgeons had an assortment of instruments at their disposal, lancets or hooks which were either twisted or straight and flat or serrated, cautery instruments, pincers, forceps, spoons, straight and bent tweezers, saws, containers with burning incense, and a range of knives and scissors of different types. All Egyptian physicians were well trained in practical first aid and could successfully mend broken bones and dislocated joints. They rapidly developed efficient techniques in using diverse surgical instruments in single operations. For example, an abscess would be lanced using a scalpel and cysts would be removed using special lancets. The procedure was then completed using another type of lancet. Basic skills such as this were common and thus learnt skills acquired by trial and error. The only time internal surgery was carried out was during mumification where for example, an incision was made in the abdominal wall in order to extract the viscera and cut the diaphragm to remove the stomach, liver, spleen, bladder and lungs. Concave ‘horns’ were used to pump the stomach contents out and then the opening would be effectively stitched up again. Bone and ivory pins were commonly used to remove objects from eyes.

Surgery deep inside the body was not conducted due to the absence of effective anaesthetics. Patients occasionally survived surgery. Orthopaedic surgeons must have been in huge demand in Ancient Egypt where many wars were conducted and where the farming community would often dislocate or fracture limbs. About 6000 Nubian skeletons were examined which showed that ulna and radius fractures were commonplace and accounted for about 31% of all fractures. This evidence is in line with our knowledge of warfare in Nubia where wooden staffs were used to beat one’s enemies.

A number of mummies of amputees from as early as the Old and Middle Kingdoms have been discovered which display signs of healing. Prosthetics existed but according to some archeologists, they were probably not practically used and were used to either to make deceased people appear more presentable for their funerals. In some cases they were purely ornamental in nature. However, a number of prostheses have also been discovered which demonstrate signs of wear, thus indicating practical usage. It is thus clear that amputations were undertaken from time-to-time, probably due to injuries sustained in battle. In the Edwin Smith papyri reference is made to surgeons who would ‘draw together’ wounds with idr which have been accepted as referring to stitches. Strong evidence exists, which makes it clear that there were renowned medical schools in ancient Egypt in Sais as well as Heliopolis and that, physicians were highly skilled in diagnosing diseases and also invoked religious chants in the treatment of patients. In the Ebers papyri, it is stated: “If you found a person with a tumour in his neck and suffering from pain in the two muscles of his neck and his head and vertebral column and neck are stiff, so he could not look down to see his abdomen, you would have to conclude that he has a tumour in his neck, prescribe some ointment to rub over his body and he will be cured immediately” (Ebers 36-43 in Wreszinski,W).

Circumcision was mainly performed on Assyrians, Ethiopians and some Egyptians between the ages of 6-12. In a tomb excavated at Luxor in the last century, a scene representing circumcision was uncovered. This dates back to 1300 B.C. and shows the circumcision of the sons of the Pharaoh Rameses II.
The performer of the operation was referred to as the ‘servant of Ka’, rather than a physician. Circumcision of infant boys was common practice but is difficult to ascertain if female circumcision existed at all. In the tombs of Beni Hasan there was found a burial chamber of a physician who lived during the Middle Kingdom period.[31] In the New Kingdom period (1550-1070 B.C.) both the pharaohs Menmepthah and Rameses III had their slain enemies emasculated and their genitals were collected. The uncircumcised genitals of enemies were collected as trophies, possibly showing that it was unusual for one not to be circumcised. James Henry Breasted Ancient Records of Egypt Part Three, p. 588, mentions that:

The lack of circumcision among the Libyans and their allies is repeatedly mentioned:

“... Libyans slain whose uncircumcised phalli were carried off: 6,359 as opposed to the... [Ek]wesh who had no foreskins, slain, whose hands were carried off, (for) they had no [foreskins] ... and again enemies of unknown origin... in heaps, whose uncircumcised phalli were carried off to the place where the king was: 6,111 men ...”

Generally, all young males who were to serve as priests were circumcised as part of the initial cleansing ritual which also included the shaving of the entire body. The surgical use of the lance, with the exception of circumcision procedures is scarcely discussed in the current collection of medical papyri. There is one image showing the performance of a circumcision of adolescents and the hieroglyphs say: “The ointment is used to make it acceptable”. This has been taken to mean that a local anaesthetic was used during the procedure. Poppies (Spin) are often mentioned in Egyptian medical narratives and their healing and anaesthetizing properties must have been well known. After surgical procedures, the physicians used to cover wounds with a piece of cloth that was drenched in honey for a period of four days. They also had first-rate bandages and made a type of adhesive tape by infusing gums into linen strips that were used to pull deep wounds together. Apart from honey, they would bind certain plant products, for example willow leaves, into the bandages for the effective treatment of inflammation. Honey was known for its antisepptic potentials and ability to stimulate the secretion of infection-fighting leucocytes.

Medical papyri have numerous references to surgical instruments used in medical procedures on living patients as well as in mummification. After careful translations and identification from texts that were previously available, it was possible to identify their usage by physicians. Some interesting lancets were discovered in Abydos and are on display in the Egyptian museum in Cairo. These include a 15cm long bronze lancet and another measuring 11.25cm. They have sharp blades with pointy edges, while other lancets have bent blades which were used to cut and remove while simultaneously pulling back the skin during operations such as cosmetic surgery, which was common, as well as in the procedure of mummification. Other lancets had square edges or wide blades. One 13cm exhibit is a lancet with a pointy edge and a wide blade in the centre which ends with a round edge. Such a surgical instrument was most probably used to clean and peel skin. The largest tweezers in the museum has two straight sides which end at the top in circle. This tweezers was 40cm long. There are many different types of tweezers and lancets but also a large collection of chisels that were utilized for surgery in bone fractures as well as retractors, scales and dental tools. The average size of the chisels is 8cm - 18cm in length.

There were also hook like instruments with a ladle at the other end. One such instrument was discovered in 1907 at El Fayyum, although other chisels were discovered Abydos which date as far back as the 28th Dynasty. Numerous drills which were bronze with wooden handles were discovered in Saqqara and Abydos in 1888. Alongside these drills were a collection of scalpels of varying shape and size. One large scalpel measures 29cm. There is also evidence of instruments used during the examination of severe wounds and tumors. These are spoon-like and oval-shaped and are triangular with wooden handles. There is no doubt that Pharaonic medicine was the basis upon which the ancient Greeks and Romans based their surgical instruments and in the case of the Greeks, perfected these. Many of the knives that were invented had stone blades and mainly flint or obsidian which had edges that were essentially sharper than currently used surgical steel.

Bronze was widely used but later on the Ancient Egyptians produced sharper instruments made of copper. In the temple of Sobek dated to 2400 BC there are numerous reliefs portraying medical instruments such as bone saws, tweezers, saws, suction cups, knives and scalpels. Cauterization was used in many procedures, and it was common to heat up the blade until it was glowing hot after which incisions were effected. As they cut the body, the cautery would also seal the blood vessels and thus reduce bleeding which could have been otherwise excessive. It was indicated for the removal of surface tumours and all types of cysts. Trepanation, (derived from the Greek word trypanon, meaning “to bore”) one of the oldest forms of neurosurgery was not that prominent in Ancient Egypt. This procedure, is nowadays referred to as a craniotomy, and involves the removal of a piece of bone from the skull. Although not conducted often, it was practised by the Ancient Egyptians who displayed an amazing degree of technical skill in this regard. The number of survivals of this extremely complex operation, as evidenced in papyri, testify to the competence of the early Egyptian surgeons. Physiotherapy and heat-therapy were also utilized to treat aches and pains. Syringes were used used for injecting liquids into the head and other cavities of a mummy to aid preservation. Syringes were also used to inject local anaesthetic during dentistry and other relatively simple procedures. The anaesthetic was made from ‘mofitis’ – material made from coarse “Memphis stone” – crushed and mixed with vinegar.

GYNAECOLOGY

The Edwin Smith Papyrus is considered to be one the principal records on Ancient Egyptian medicine while the Ebers Papyrus also gives us a great deal of information on inter alia, for example, skin disorders, stomach ailments, dentistry and gynaecology.[24] Women’s diseases are well documented in Ancient Egyptian medical writings but there were no known words for midwife, obstetrician, or gynaecologist despite their existence.[20] Where serfs were involved, the midwife who also provided emotional support, was usually a family member, friend or neighbour who would assist with delivering the baby. The wealthier classes had midwives who were usually maidservants or nurses.[21] Midwives had no formal training but rather learned by undergoing a period of apprenticeship. Midwives concentrated their efforts on were pregnancy, labor, fertility and contraception.[22] Women delivered their babies either kneeling, or sitting on their haunches, or ideally on a delivery seat. Hot water was placed beneath the seat, so that the rising warm vapours would ease the delivery. Special chants were repeated, such as one that asked the god Amun to: “make the heart of the deliverer strong, and keep alive the one that is coming.”[24]

Gynaecological disorders such as, for example, a prolapsed uterus were treated with medications rather than by manual
manipulation. It was believed that if the patient stood over a burning fire of carefully selected ingredients, her uterus would be forced back into position. Other methods included drinking concoctions and rubbing oils and fragrant balms on the pubis.[21] Menorrhagia was treated by preparations designed “to draw out the blood of the woman”[22], as this was believed to stop bleeding.

Healing ingredients were introduced into the vagina by means of tampons and by fumigation. The latter was a technique where a woman straddled hot stones on which a medicated solution was decanted that would produce vapours that may well have entered the vagina.[23]

A large collection of 37 instruments was engraved on one of the walls in the temple of Kom-Ombo.

DENTISTRY

The Ancient Egyptians also had dentists who were capable of draining abscesses and extracting teeth. Mummies show little evidence of dental caries but there were undoubtedly nagging tooth problems that required treatment. There is evidence of cavities as well as common abscesses in less ancient mummies and this suggests that this was due to the eating of more refined foods and that needed minerals in the diet could have been absent in diets. Abscesses were drained by using a drill but generally speaking, all infections of the teeth required medicine to get rid of the ‘worms’ that were damaging teeth.

CONCLUSION

The Ancient Egyptians have provided modern historians with a vast amount of knowledge and evidence about their attitude towards medicine and the medical knowledge possessed by them. There is no doubt that the medical system was well organized, highly structured and somewhat hierarchical in nature. This evidence has come from the numerous papyruses found in archaeological digs. Pharaonic medicine was undoubtedly the basis for medicine in the Greek, Roman, Coptic and Islamic Periods. Many instruments used today are very similar to those in ancient Egypt. Many Ancient Egyptian instruments and diagnostic techniques were ultimately perfected by the Greeks who get all the credit today. The Egyptian physicians were highly advanced medical practitioners for their time and surgeons had a wide array of surgical instruments which served very specific functions. They were essentially masters of human anatomy and healing and this was mainly due to their extensive mumification ceremonies which involved removing most of the internal organs including the brain, liver, lungs, pancreas, spleen, heart and intestines. Their basic knowledge of organ functions within the human body (save for the brain and heart which they thought had opposite functions) was very good. Their knowledge of human anatomy, led to an extensive knowledge of the functioning of the organs, and branched into many other medical practices. Egyptian doctors, especially surgeons, were highly specialized and very respected and had a high reputation in the ancient world.[12] Medicine and the priesthood were regarded as being in tandem. The early doctors seem to have been priests serving in temples and had their own herb gardens from which they could provide medications.

REFERENCES