Editorial

Brief History of Safe Surgery

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Very often, we are proud of our ultra-modern civilization, but we have yet failed to discover the mysteries of architecturally sophisticated prehistoric Stonehenge, pyramids, & many other things of unknown civilizations. That is to say that we have succeeded very very little to know about the facts of the truths & the beauties of the universe.

The term 'Surgery' etymologically originated from the English "Surgerie", the middle and the old french 'Surgerie' in 1200s, the Latin 'Chirugia', & several other languages including the Greek one. The word surgery was first used in 1300, as sirgirie, for treatment by operative, such as cutting or setting in fractures, etc., from the old French surgerie, surgeure, contraction of serurgerie, from the Late Latin chirurgia "surgery," from the Greek kheirourgia, from kheirourgos that means "working or done by hand," from kheir "hand". Thus, Literally Surgery means 'hand work' or 'done by hand' or 'hand energy' (cheir meaning hand & ergon meaning energy). In modern science, surgery is the branch of medical science that concerns with myriads of known diseases and many unknown pathological processes that need manual operative procedures requiring in order to cure or alleviate symptoms of to have disease free survival or symptom free survival. The first known use of the word 'surgeon' was in the 14th century, though the modern spelling of surgeon dates from 1541.[1]

Based on molecular studies, symbols, images, carvings, we find through our very very little knowledge, the period of prehistory extends from some 33 lac years ago to about 5000 years ago. Written documents, i.e., history dates back to some 5000 years back, i.e., about 3000 years BCE. First use of medicinal plants by Homo sapiens is thought to happen some 60,000 years ago of palaeolithic period, while definitive use of herbal remedies dates back to 3000 years BCE. Archaeological evidence suggests that Sumerians compiled a list of useful plants between 4,100 BCE to 1,750 BCE (the period of Southern Mesoptomian Civilization). Evidence of trepanation, claimed to be the first surgical procedure dates back to 6,500 BCE. But the details are lacking. Our SAARC region has the most ancient history of medicine in the world. As early as 5,000 BCE a comprehensive form of healing called the 'Ayurveda' was developed here. Traditional healing was first recorded here between 4,500 to 1,600 BCE. Sages were the early practitioners here around 2,500 BCE to 600 BCE. 'Maharishi Sushruta' is now called the 'father of surgery' & the 'father of plastic surgery' for his famous medical treatise 'Sushruta Samhita' & his success in 'rhinoplasty'. 'Maharishi Sushruta' is supposed to had lived between 1,200 BCE & 600 BCE.

The minimally invasive procedure on record dates back to 400 BCE, when the Greek physician Hippocrates (called the 'father of modern medicine') described the use of a rectal speculum to explain haemorrhoids. The Arab Physician 'Abu–Al Qasim Al-Zahrawi' (936 AD – 10153 AD) is called the 'father of operative surgery'. He invented over 200 surgical appliances & instruments including Knives, scissors etc. He first described the ectopic pregnancy, the stone babies (abnormal IUD babies) & the hereditary pattern of haemophilia.[2,3]

The Scotsman John Hunter (1728-1793) is called the 'father of modern surgery' for his scientific approaches to surgery. The Englishman 'Joseph Lister (1827-1912) was the first to introduce asepsis & aseptic surgery successfully. The Scottish James Henderson Nicolle (1864-1921) is now known as the 'father of day surgery' or 'father of day care surgery'. The first open cholecystectomy was performed on July 15, 1882 by German Carl Johan August Langenbuch at the Lazarus Krankenhaus, Berlin. In 1910, Swedish Hans Christian Jacobaeus (1879-1937) performed the first endoscopy (thoracoscopy in 1910, laparoscopy in 1910 to 1912) in humans. In the subsequent several decades till today, numerous individuals refined & popularized the approach further for laparoscopic interventions.[2]

The development of the instruments, natural science researches (e.g. physiology, biochemistry, pharmacology, immunology, bacteriology, genetics, molecular biology), as well as the technical developments (e.g. diagnostic, computerization, technical arrangement of the wound, endoscopy, laparoscopy, invasive radiology) have betokened an enormous advance in the development and application of the new surgical approaches and interventions. András Németh performed the first kidney transplantation in Szeged in 1962. Christiaan Neething Barnard (1922-2001) performed the world's first human heart transplant in 1967. Kurl Semn performed the first laparoscopic appendicectomy in 1981. Erich Mühe (1938-2005) performed the first laparoscopic cholecystectomy in Böblingen in 1985. The clinical application of NOTES began in 2007. The idea of robotic surgery began more than 50 years ago. Specifically, the first surgical robot, PUMA 560 (Programmable Universal Machine for Assembly or Programmable Universal Manipulation Arm) was used in a brain biopsy procedure in 1985. In the late 1980s, Integrated robotic surgical systems (Robodoc) were used for a prosthetic hip replacement. Friedrich-Wilhelm Mohr, using the Da Vinci surgical robot performed the first robotically assisted cardiac bypass in the Leipzig Heart Centre (Germany) in 1998. The surgeons started to perform the NOTES (Natural Orifice Transluminal Endoscopic Surgery) interventions with the use of flexible endoscopes. The human use of the technique promises the reduction in per-operative hemorrhage, postoperative pain (no pain surgery), infection, hospital stay, early recovery and convalescence, early resumption of work to earn livelihood, the decreased adhesion and postoperative complications, and the elimination of postoperative abdominal hernias. It also leads to an incisionless or no scar surgery (i.e., scarless surgery).[1,3]

Since the time immemorial, men are fighting continuously against the natural awkward events and the inherent plus acquired ailments, that are now increasingly implicating us. The increased incidence of such aristocratic diseases as cardiovascular, cerebrovascular, malignant ones plus traumatic and accidental injuries, the updated surgical intervention is mandatory to achieve the zenith of avantgarde public health goals. In many of these cases, surgical intervention is very often the only means to reduce or eradicate the disabilities and deformities, and also to reduce the mortality risks. The basic surgical skills include

proficiency in knot tying, instrument handling, suturing, hemostasis and tissue dissection. Surgery should 'flow', using the simplest and safest way to achieve the operative goal. Surgical safety checklist is of equally utmost importance. Surgeons are to get updated regularly to improve the accepted surgical safety practices, and to entrust better communication and teamwork amongst all clinical disciplines. These checklists are to be followed as well accepted safety tools for both patients and surgeons. These updated improvised safety techniques and tools can substantially reduce unwanted complications, morbidity and mortality. The most important skill for a surgeon is to have 'Exceptional Dexterity'. During surgery, one must be able to remain shake-free and maintain absolute concentration. As a surgeon, this skill is critical. One must have a basic knowledge of instruments and equipment, when one is actively engaged in the operation. It is essential for one to remain calm and cool, focusing on one's duties, no matter how simple or complex the procedure may be. In addition, a surgeon, like any other physician is to possess Communication skills, Emotional intelligence, Problem-solving skills, Attention to detailed knowledge, Decision-making skills, Professionalism, Teamwork skills & Leadership skills etc.[3]

References

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