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A Journey of a Thousand Year in Medical History

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Opinion:

"Beauty is truth, truth is beauty" (KEATS):

Early man in the Stone Age soon developed a sense of care for his companions who had trauma and injuries. He came to know the methods of stopping the blood from wounds by Tourniquets, and by ashes of Herbs quite earlier. He also learnt the importance of draining large wounds. He carried the drainage by sticking hollow bird's quills into the wound and getting the pus drained out. Similarly the cut wounds were closed by bringing the edges close together and allowing a termite or a beetle to bite across the edges with sharp pincers, once the insect has taken a good bite, its head would be twisted, thus clamping the wound shut. He perhaps started knowing quite earlier how to splint a fracture. Archaeological studies show that the early man developed the skill of dealing with a fracture, using sticks and bits of wood, wet clay compacted and moulded around the site of fracture which when dried, acted in much the same way as modern day plaster and immobilised the joint long enough to effect cure.

Trepanation or Skull boring was a practice, which started with primitive people. It was done to relieve increased intracranial pressure, which manifested itself in the form of severe headaches. The instruments used included sharpened stones or shells. It is evident from Archaeological studies that patients who underwent such procedure survived. From such beginnings the surgical skill continued and evolved to excellence, but had a boost with the developments of Anaesthesia, Asepsis and Antibiotics, then came the era of the operating techniques and skilful training, which continues till date. Surgery has experienced an explosive growth throughout the twentieth century. However the turn of the century has seen a quantum jump in the knowledge, concepts and the achievements. The events are so spectacular that they changed the whole course of History. By 1904 Wertheim has performed the Radical Hysterectomy for Ca uterine cervix. Crile introduced Radical Neck dissection in 1906, Miles introduced Abdomino Perineal Resection for Ca rectum in 1908. Grey Turner did oesophageal resection in 1913. Ewart – Graham performed the first pneumonectomy for Ca lung in 1935, surgery become more radical after 1945 and was enhanced in the hands of Whipple, Wangenstein, Brunch swing and pack and it reached its height, when Hemicorporectomy was done by Miller, in which the lower half of the body was removed, and now as we enter into the next millennium the revolution is towards Surgery without knife.

"Our sweetest songs are those that tell of saddest thoughts" – Shelley:

By 1906 it was clear that chemotherapy was a practical proposition and not a fantasy as the eminent contemporaries declared it.

Drugs in the early 20th century expanded with rapidity, until the THALIDOMIDE DISASTER of 1961, which brought the dangerous drug act. This resulted in control on the quality of the manufacture efficacy, which at first received less attention. In the first half of the century drug therapy was relatively uncritical but then came the idea of safety of a drug and now the question is

How safe is Safe Enough:

In 1900 Sigmund Freud published his famous epoch making enterprise "Interpretation of Dreams", ushering in the sciences of Psychoanalysis. Rontgen in 1895 and Radium by Madame Marie Pieree Curie discovered X-rays in 1900. Their clinical applications were implacable by 1911. The first cancer of the uterine cervix was treated by deep x-rays and Radium in 1911 at Stockholm. William Einthoven who used a string galvanometer reported the first crude ECG in 1903.

"When I wash a leper's wound I feel I am nursing the Lord Himself " (Mother Teresa 1910 – 1997)

Robert Koch (1882) a Germen bacteriologist was the first person to show that a specific germ caused a specific disease. Koch not only discovered Anthrax but also Mycobacterium Tuberculosis. Schaudinn & Hoffmann in 1905 were able to show that Syphilis is due to Treponema Pallidum in the materials from chancre thus rejecting the previous superstition that it is a punishment. Leprosy – which bears its name Hansen's disease after Armauer Hansen (1841–1912) who was the first to show that leprosy was a bacterial infection caused by Mycobacteria leprae and is an infection not a curse. It was formerly regarded as hopeless condition but then later it gradually became curable.

"To see the unseen become an obsession":

Sir Hans Christian Jacobaeus performed his first Thorascopy in 1910 using a straight cystoscope for Tuberculosis. (Laparoscopy started in France by Murray with Laproscopic Cholecystectomy) The not accessible parts of interior were made visible by ingeniously constructed instruments and the Endoscopic era began. Endoscopy revolutionised the obstetrics in particular. The impossible passable barrier of cervix was first broken by Pantalleoni in 1869 by Hysteroscopy. However Hysteroscopy from a diagnostic tool to an operative modality was established by the end of 20th century. Primary principles being why to open the door when the job can be done through the keyhole. Flexible Bronchoscopy was invented in Japan by Iked and in 1953 Eder and Hertz published the first paper on visualisation of the valves of Heart, thus laying the foundations of Echo Cardiography.

A single step for a man – A giant leap for mankind (Neil Armstrong):

Caryl Nylen of Sweden introduced a mono ocular operating microscope in 1921. Insulin for diabetic patient was discovered in 1922. In 1928, Penicillin was discovered by Alexander Fleming who was long been interested in investigating wound infection, this discovery could rightly be called the ceremony of Antibiotic era and it was just seven years before the discovery of Sulphonamides. Fleming also had the credit of discovering the Antibacterial constituent of tears (lysozyme) and to obtain this he used to squirt lemon juice into his own eyes to get a supply of tears. The discovery of penicillin took place at St. Mary's Hospital London. Surgery had a boost after this discovery and made a progress.

Higher than Everest:

In 1959 Jonas Salk discovered the Polio vaccine and chooses not to patent it preferring to encourage its wide spread use to help the suffering people worldwide.

In 1958 Ian Donald of Glasgow reported the differentiation of solid and cystic masses by ultra sonography. Thus OBSTETRICIAN discovered the joy of penetrating the "Iron curtain" of the uterine walls and visualizing the foetus. This revolutionised obstetrics. Quite recently and first ever Laparascopic Hysterectomy was done by Harry Reich in 1988. In 1960, GD Searle marketed the oral contraceptive, 'the pill' under the name Enovid. In 1962 publication of Rachel Carson's the silent spring brings the world to light the dangers of DDT and thus sparkled the awareness, which is now known as environmental concern. In 1954 Fibre optic Endoscopes developed by Hopkins heralded the conservative Functional Endoscopes Sinuses Surgery (FESS)

"I bandaged him, God healed him" (Ambroise Pare):

In the second half of nineteenth century corneal and bone transplantation started developing Organ transplantation was pioneered by Alaxis Carnel (1873-1944)

In 1960's with advent of immunosuppressive drugs successful kidney and other organ transplantation become a clinical reality and now it has gone to the extent that the Heart transplantation is a routine procedure and an integral part of modern cardio thoracic surgery. Dr. Christian Barnard performed the first Human Heart transplantation in South Africa in 1967

Nothing fascinates the human mind more than the human body itself:

In 1866, Austrian Monk Gregor Johann Mendel

publishes his genetic findings. In 1953 James Watson and Francis Crick explained the molecular structure of DNA the fundamental genetic material which was a start of molecular Biology. The study of Human Chromosomes in readily accessible material such as lymphocytes obtained from peripheral blood has been possible only in 1956.

Galveston made the first break through when one of his technician mistakenly failed to add salt to the fluid in which cells to be studied were placed. The hypotonic fluid caused the cells to absorb water and swell separating the individual chromosomes so that they were readily distinguishable. In 1956, investigators in Sweden systematically counted 46 chromosomes. In 1959 researchers identified an extra chromosome 21 in patients with Down syndrome.

In 1978 Louise Brown, the first test tube baby was born in England, heralding a

revolution in reproductive science. In 1997 scientists at the Roslin Institute in Edin burgh announced the birth of the cloned sheep, Dolly the first mammal to be cloned from the tissue of an adult animal.

The development of amniocentesis and prenatal diagnosis of genetic diseases has revolutionized the practice of medical genetics. In 1968 Amniocentesis for identification of genetic diseases in foetus developed, in 1999 scientists at the human genome project published the first map of a human chromosome.

Technology has changed the way we live:

Laser since its invention by Theodore Maiman has found use in a huge range of applications. It has been employed in eye and cosmetic surgery and in the field of cancer therapy. It reaches areas that conventional equipment cannot. Its first medical use was in eye for diabetic patients. More recently it was discovered that laser surgery could correct imperfect eyesight.

Now lasers are used in the same way as a scalpel in surgery, particularly in otherwise inaccessible parts of the body such as Larynx and neck of the womb.

In the days past we wished that blind could see, deaf could hear, dumb could talk and the crippled could walk. Medical science has made us to see our wishful thinking could come true. Last decade had seen the management of progress. Corneal grafting, Cochlear implants, Voice synthesisers, Speech therapy and Rehabilitation made the above wishes a possibility.

The search is tireless:

We now sit at the doorstep of what could be a new Era of revolution in Medical Sciences. To develop and achieve excellence the principle remains the same and that is to accept our failures and understand our limitations, but to glorify the technology and progress to something better. We now know much, but the fact of the matter is, we still do not know much. We do not know about what makes a normal cell a malignant cell; we still do not know what makes a cell develop into a pancreas cell while a seemingly identical cell becomes a liver cell. We know the anatomy of Human brain but we do not know the Human mind. The flight of ideas and the vision of Human mind are boundless and sky is no limit to it. Because human body is still full of surprises a lot has to come, but to develop and achieve excellence the principle remains the same that is to accept the failures and limitations, glorifying the technology in the most advance way. We look forward to the twenty first century as having a very exciting future for Medical Science with possibility of Gene therapy, Immuno-therapy, Surgery without knife, Robots surgery, Remote surgery, Telemedicine, wealth of information on websites and technology and its interventions. Since change is the unchangeable law of nature and all said and done it is ultimately the human mind that dictates the last word and the search is tireless.