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GLORIOUS ACHIEVEMENTS OF OUR NATION IN MEDICAL SCIENCE

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Our motherland Bharat achieved outstanding standard in Medical science in almost all aspects, which can be enumerated one by one, from the basic understanding of the concept of health, up to the level of performing high technological skills.

DEFINITION OF HEALTH

World Health Organization defined health as a state of physical, mental and social well being. So far, this is concerned as the complete and correct definition. However, our ancestors defined health in a much broader, complete and scientific way. Susruta, the great ancient surgeon of our Nation, defined health in his Susruta Samhita, a surgical treatise, in the 41st sloka of 15th addhyaya of 1st chapter (Sutrasthana) as ,

“ समदोषः समाग्निश्च समधातु मलक्रयः ।
प्रसन्न आत्म इन्द्रिय मनाः स्वस्थ इत्याभिधीयते ॥ ”

That is, if one wants to achieve a perfect and complete health (SvSw - svastha), he has to maintain equilibrium in his Dosha, Agni, Dhatu and Mala. (Besides,) his Atma (the Soul), senses and the mind should be clear, pure and brighter (àsNn - prasanna). Thus, Susruta defined health as a state of physical, mental and spiritual well being. Here the word spiritual includes not only the human beings, but also all the living creatures of the Universe and the non-living inanimate matter. Because all the living and the non-living come from one and the same Almighty – the Paramatma. The Atma – the soul - is nothing but the tiniest, yet complete representation of Paramatma. Hence, Atma is all-encompassing to include everything. Thus, to attain perfect and complete health, there should be complete and complimentary harmony amongst human beings, Mother

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Nature and the living creatures. If this is attained, then there will not be any pollution threads, environmental hazards and exploitation of Nature.

SCIENTIFIC DEFINITION

Besides, our ancestor's definition is scientific also. Quantum Physics, the advanced and modern branch of Physics, dealing with the sub-atomic quantum particles, reveals, "There is inseparable quantum interconnectedness between all the physical matter of the Universe and every particle is contained in every other sub-atomic particle." It also details the quantum entanglement of particles. Thus, nothing is separate and independent and every thing is interconnected and inter-dependant. Hence, one cannot achieve perfect and complete health, ignoring the fellow human beings, living creatures and Nature, as the affections of one will definitely affect the other. Thus, our ancestor's definition of health is all-encompassing, complete, perfect and scientific.

ALL ENCOMPASSING APPROACH

In the same way, our ancestors had an all-encompassing approach towards the patients also. They treated the patients as a whole and not the disease alone. Because they knew that the various organs of the human body and even the mind, are inter-connected and inter-dependent. Hence, there is a definite influence of the mind (the psych) over the body (soma) and the vice – versa also true. This is known as psychosomatic effect and it was detailed by the great ancient Physician of our Nation Caraka, in his medical treatise Caraka Samhita. [1]

CARAKA SAMHITA

Besides psycho-somatic concept, Caraka Samhita also stresses the importance of individual variation [2] because every person is having his own constitution i.e. Prakruty (àk&it) and it should be given its own due importance on treating the patients. It further stresses the rational approach of 'Examine and Proceed' which includes Rogipariksha – the examination of the patient and Rogapariksha – the examination of the disease.[3] It also emphasizes the importance of Natural Immunity and Natural cure,[2] where the mode of treatment is to help the nature, because it is only the Nature that cures and prevents the diseases. Caraka stressed the importance of regular conduction of scientific symposia and seminars where the expertise knowledge and experience were shared to improve the medical knowledge and practice.[4] Thus, these scientific seminars and symposia were conducted in our Nation even before the period of Caraka, i.e. at least four thousand years before present and are definitely not imported from western countries. Thus, Caraka Samhita is an excellent treatise on medicine and it was translated into various foreign languages. Thus, it influenced the other parts of the world. Hence, European scholar Dr. Royal remarked that Hippocrates, the father of western medicine, borrowed his Materia Medica (his medical text) from India,[5] especially from Caraka Samhita.

SUSRUTA SAMHITA

As Caraka in medicine, Susruta was an expertise in surgery. Susruta compiled a surgical treatise namely Susruta Samhita. In Susuta Samhita, in the 9th Addhyaya of 1st Chapter (Sutrasthana), Susruta emphasized the importance of surgical training to the junior surgeons. He detailed the simple experimental models for surgical training. Thus, Susruta is the pioneer to imagine, evaluate and introduce simple experimental models for training in surgical procedures. Besides, Susruta also stressed the importance of anatomical knowledge to the surgeons and for this, he advised cadaver dissection, as found in fifth Addhyaya of 3rd (Sarirasthana) chapter. He even detailed the preparation of cadaver in the 49th sloka of this addhyaya. Hence, Tharwald Gurgeon of Germany [6] mentioned in the book, 'Science and Secrets of Medicine,' "Certainly this was the oldest lesson in dissection known to history." Susruta used some form of anaesthesia as found in 11th sloka of 17th Addhyaya of 1st chapter (Sutrasthana). Thus, Whipple A.O. mentioned [7] in the book, 'The Story of Wound Healing,' "Susruta must be accepted as a pioneer in some form of anaesthesia in the remote past of history of surgery in India." Susruta detailed 101 surgical instruments and he correctly pointed out that surgeon's hand is the most important instrument on which all the surgical work solely depends on.[8] Susruta divided the procedure and period of surgery into pUvR kmR - purva karma (pre-operative), àwan kmR – prathana karma (per-operative) and pZcat! kmR – pascat karma (post-operative)[9] and the modern surgery is following the same. Susruta described the proper maintenance of post-operative ward in the 19th Addhyaya of 1st chapter (Sutrasthana).

SUSRUTA - FATHER OF SURGERY

Susruta invented new surgical instruments and procedures and his work was translated into Arabic and thereby into European Languages and thus, he influenced the western parts of the globe also.[10] Hence, in the book, "The History of Medicine in India," published by Indian National Science Academy, New Delhi, an authorized scientific body of our Nation, it was correctly mentioned in the page number 326 as,[11] "Judged by any standard, the instruments and appliances of Susruta are admirable and he envisaged the invention of new instruments. He can be regarded as the first person to introduce diagnostic instruments and thus, Susruta is rightly called as Father of Surgery." Susruta, the Father of Surgery, performed cataract extraction, surgery for intestinal obstruction, perforated abdomen, obstructed labour, hernia, urinary calculi, surgeries for fractures and dislocations and dental surgeries.[12] Susruta performed plastic surgeries of the ear

lobe, lips of mouth and rhinoplasty - the plastic surgery of the nose. He described these plastic surgeries in the 16th Addhyaya of 1st chapter (Sutrasthana) and Rhinoplasty, the reshaping of the cut nose was described in the slokas 27 to 31 of this Addhyaya. Thus, Rhinoplasty was practiced in our Nation at least since the period of Susruta, i.e. at least four thousand years before present and it was there in our Nation up to the early part of eighteenth century A.D., which can be proved with concrete evidence.

RHINOPLASTY

Gentleman's Magazine of London, in its October 1794 issue published [13] with details and illustrations of an incident that took place in a remote village near Pune of Maharastra. Kawasji was a Maratha cart driver in Royal Indian Army. Tippu Sultan's Army, in the Anglo-Mysore War of 1792 C.E., captured him as a prisoner. In the prison Kawasji's nose and one of his arms were cut. Kawasji somehow managed an escape and went to his native near Pune. There, in a small village near Pune, a village potter 'Kumhara Vaidhya' performed Rhinoplasty, the reshaping of his cut nose, based on the technique described in Susruta Samhita. A thin plate of wax was fitted to the stump of the nose, so as to make a nose of good appearance. Then, this wax was flattened over the central part of the forehead and the edge of the wax was marked. Exactly at the marking, incisions are made, to raise a skin flap, leaving a pedicle at the root of the nose, for the blood supply to the skin graft. Then the cicatrix of the nose stump was made as raw area with incisions. The raised skin flap is turned down and inserted at these incisions, leaving two holes for the nostrils. Wound was dressed well. On the 20th day the pedicle was cut and with a few minor dissections here and there, the nose become perfect and of good in appearance.

Therefore, a 100% successful and state of the art plastic surgery was the result. However, it was not performed at a cosmopolitan metro city, not in a multi-specialty state of the art hospital, not in a highly sophisticated modernized operation theatre, not in any one of the western countries, which are thought to be more advanced and not by any foreign returned surgeon. But by a village potter vaidya, in a remote village near Pune, in our Nation Bharat, that too 216 years before present. That is the greatness of our Motherland, Bharat. The whole thing was published in the Madras Gazette as, "This is not uncommon in India and was practiced since time immemorial." [14]

And it also appeared in the Imperial Gazette.

The whole surgery was watched by two English doctors of Bombay Presidency, namely Dr.James Trintlay and Dr.Thomas Cruso. They send the details with illustrations to London and the same was reported in Gentleman's Magazine. This created ripples, wonder and excitement in Europe and the Europeans called it as 'INDIAN PLASTIC SURGERY' as they learned it and

copied from Bharat. However, they took thirty full years, just to copy it. Dr.J.C.Corpue of London performed it, first time in Europe on 23rd October 1814 and Dr.Graphy of Germany followed suit. Thus, Weber of Europe, even in those days itself, remarked,[15] "The European surgeons are still learn something from the Indians as they have already borrowed from them, the operation of Rhinoplasty." However, the Rhinoplasty which was there in our Nation, at least since the period of Susruta up to the early years of 18th century, disappeared totally from the soil of our Nation, when the British had established their rule firmly here. The British eliminated it after thoroughly copying it. They went a step further by declaring that this was their own original development and proclaimed that out of humanitarian grounds, mercy and due to white man's burden, they introduced it in our Nation, just to save our souls. Is it not a great conspiracy committed against our Motherland?

Thus, these type of insidious transportation of medical knowledge and techniques from Bharat to Europe were common in those days, which can be further proved by narrating one more evidence.

SMALL POX INOCULATION

Dr.John Zepanniah Holwel, a F.R.S. surgeon from Britain came to Bharat in 1732 C.E. and started practicing medicine at Culcutta. He was the temporary governor of Bengal in 1760 after Robert Clive. Soon he returned England. In the year 1767, he gave a lecture with title 'An account of the manner of inoculation for small pox in East Indies' inscribed to the learned President and the members of Royal College of Physicians, London. In that lecture he mentioned that small pox inoculation had the sanction of remotest antiquity in Indostan, and added that it was practiced since time out of mind. He used two words simultaneously i.e. remote and antiquity that too remote in superlative degree and the words, 'time out of mind' to denote and highlight the most ancient and great antiquity nature of small pox inoculation in our Nation. Besides, he mentioned the name our Nation as Hindusthan only. He further remarked, "It is next to miracle to hear, that one in a million fails of receiving the infection and one of that miscarried under it, out of the magnitude I have seen inoculated in that country (Bharat)." Thus, out of ten lakhs people inoculated not even a single person was infected with smallpox and not even a single person got any complications. That means our ancestor's inoculation method had 100 % protectiveness and efficacy with 100% safety profile. Really, we should be proud of our ancestors.

He further added that the variola matter used for inoculation was obtained from the pustules of previous year and definitely not from the infected one got in the natural way, however mild and distinct was the species. This clearly proves that our ancestors knew correctly the

scientific knowledge of the inoculation, as they had used only the attenuated form and not at all the infective form for inoculation. He mentioned that the students of the colleges of Eleabas, Bindoobund, Varanasi etc., went to all villages in the month of February i.e. before the small pox epidemic, to inoculate the people. This shows that there were colleges and Universities in our Nation, before the entry of British itself and the social and duty consciousness of our students on those days. He described the inoculation procedure in detail in his lecture and the modern day method resembles much to it. The students added Ganga water to the variola matter and the number of pustules was seldom less than fifty but hardly ever exceeded two hundred out of ten lakh inoculation, as stated by Dr.Holwel, showing very low incidence of pustule formation and high sterility nature.

The whole lecture can be read as such in the book, 'Indian Science and Technology in 18th century' by Dharampal, in pages 193 to 213 of 1971 edition, which can also be accessed through internet. It is also available in the book of Dr.J.Z.Holwel, at National Library of Australia. In the same book Dharampal gave an account of the letter of Oliver Coult to Dr.Ro Coult of London, dated Calcutta 10th February 1731, detailing the small pox inoculation prevalent in Bengal in 1730s. This letter can be read as such at Royal Society Papers in London Museum with no. 271v to 272r Add MS 4432.

Like Rhinoplasty, the small pox vaccination that was there in our Nation since time immemorial up to the early part of 18th century, was also disappeared from our Nation, when the British established their rule firmly here. Besides, it was wrongly credited with Dr.Edward Jenner of London who was said to have invented the procedure in the year 1796. That is a full 29 years after this remarkable lecture of Dr.J.Z.Holwel in 1767, mentioning strongly the time immemorial antiquity of small pox inoculation in Bharat. Thus, Edward Jenner took a full 29 years, just to copy the procedure from us. That was his level of intelligence, knowledge and capacity, yet we were asked to believe wrongly that he only invented the procedure. The British further told that out of humanitarian grounds, mercy and due to 'white man's burden' they introduced the small pox inoculation in Bharat, just to save our lives. Thus, we are forced to repeat, "Is it not a great conspiracy committed against our Motherland, Bharat?"

FOUR TYPES OF EVIDENCES

These two incidences clearly proved that our Nation had achieved Himalayan peaks in Medicine. It can be further highlighted by four types important evidences in History, namely 1. Excavation, 2. Inscription, 3. Literature and 4. Foreign Accounts.

1. EXCAVATION

The excavations at Harappa and Mohenjo-daro of Sarasvati-Sindhu Civilisation are dated five thousand years before present. These excavations reveal a well planned city with great bath, spacious houses with wells, bath rooms, pipes, covered drains connected to covered street drains which in turn leading to soak pits and the rubbish heaps put in deep trenches located outside the city.[16] This careful town planning, adequate water supply, efficient drainage system and proper disposal of waste are a unique feature of Sarasvati-Sindhu Civilisation. Thus, these prove the existence of a high level of social medicine at this civilisation. Amongst all the branches of Medicine, social medicine is the last thing to develop. Hence, it proves that medical science had developed well in our Nation much before Sarasvati-Sindhu Civilisation, i.e. before five thousand years itself.

2. INSCRIPTION

Chengalpattu district is very nearer to Chennai. In that district, in Maduranthagam Taluk, there is a small village known as Thirumukkoodal. At Thirumukkodal, like Prayag of Uttar Pradesh, there is a confluence of three rivers, namely Vegavadi, Paalaaru and Cheyyaaru, hence the name (Thiru –Sree and Mukkoodal – confluence of three). In that village there is a Vishnu Temple namely Venkatesa Perumaal Temple. On the east wall of the first prakara of this temple, there is a large inscription of the King Veera Rajendra Devan of later Chola Kingdom and its date is 1068 C.E. This inscription reveals that during that period, there was a Vedic College where Rig Veda, Yajur Veda, Vyaakarana, Pancaraatra, Saiva Agama and Vaishnava Agama were taught. Adjacent to that Vedic College, there was a fifteen-bedded hospital to treat the students of this Veda College and the employees of this temple. One Physician by name Savarnan Kodhantaraman Asvathama Bhattan was employed in this hospital. In addition, a surgeon who was mentioned as Sallyakriyai Pannuvaan, where Salliya means salyatantra, the surgery and pannuvaaan means the person who is doing it, in Tamil language. Besides, there were two nurses and a drug store. The drugs available at the hospital were also enumerated in this inscription. The details of this hospital were given at 43 to 48 lines of this inscription and Archeological Survey of India published the whole inscription in 1984, in Epigraphia Indica Volume 21 at pages 220 to 250. Thus, even at a period of 942 years before present there were hospitals with physicians, surgeons, nurses and drug store with in-patient facilities, in our Nation, Bharat.

We all knew that Mauriya King Asoka, whose period is 1472 to 1436 B.C.E., established a chain of hospitals and dispensaries all over his empire.[17]

3. LITERATURE

Our holy Sanskrit literature clearly reveals the teaching of medical science at Takshasila University of west Punjab, three thousand and five hundred years before and at Nalanda University of Bihar, some two thousand years before present. Susruta Samhita mentioned that the King of Kasi, Divodasa Dhanvantari was an expert in surgical teaching.

Sangam literatures of our beloved Tamil language prove the excellent medical and surgical achievements of our Nation at their ancient days. These literatures are of about three thousand years old. For example, Puranaanooru, one of Ettuthokai Tamil poems, mentioned in the 180th song,

"Irumbu cuvai konda vizhupunn noi theernthu,
maruthukol marathin vaalvadu mayangi,
vaduvinri vaditha yaakkaiyan……,"

which means an army general by name Eernthoor Koyamaan Maaran suffered incised wounds by iron weapons (irumbu cuvai konda vizhupunn - irumbu is iron and vizhupunn is wound) at a war. However, the military surgeons of that ancient period healed these worst wounds without producing any scar. Hence, the army general was mentioned in this poem as "vaduvinri vaditha yaakkaiyan" – a person whose body (yaakkai) was healed (vaditha – made) without scars (vaduvintri – without scars). Therefore, a total scar less surgery, which is still evading the modern medicine. The same Puranaanooru in the 373rd poem mentioned,

"vempunn arinar kandu kann alaippa"

which means that there were military surgeons (vempunn arinar) who would suture the war wounds, in the Early Chola Kingdom, during the reign of the King Kulamutrathu Thunchiya Killivalavan. Pathitru Patthu, another Ettuthkai poem of Sangam Tamil literature, mentioned in the 42nd poem of 5th section, sung by the Tamil poet, Paranar,

"…… neduvalloosi
neduvasi parantha vaduvaal marbin
ambu ser udambinar……..,"

which means that the war injuries at the chest of army men were sutured with long suturing needles (neduvalloosi) by the military surgeons of the Chera Kingdom under the King Kadal Pirakotiya Senkuttuvan.

4. FOREIGN ACCOUNTS

Fah-Hian a Buddhist traveller of China came to Bharat in 399 C.E. He recorded his travel accounts with the title, "Record of Buddhist Countries" in Chinese language. This was rendered English by Samuel Beal with the title, "Travels of Fah-Hian and Sung Yun" which was

published originally by Trubner and co, London in 1869 and was republished by Asian Educational Services, New Delhi in 2003. In this book at page number 107, Fah-Hian mentioned clearly, “The respective noble and the land owners of this country have founded hospitals within the city of Pataliputra (modern Patna, Bihar), to which the poor of all countries, the destitute, cripples, and the diseased may repair (for shelter). They receive every kind of requisite help gratuitously. Physicians inspect their disease, and according to their cases order them food and drink, medicines and decoctions, everything in fact that may contribute to their ease. When cured they depart at their own convenience.”

Accounts of travels of Hiuen-Tsiang, another Buddhist traveller of China travelled Bharat between 630 C.E. to 645 C.E. Hiuen-Tsiang’s two direct disciples recorded his travel accounts with the title, “History of the Master of Law of the three Pitakas of the ‘Great Loving-Kindness’ Temple”. Samuel Beal translated these from Chinese into English with the title, “The Life of Hiuen-Tsiang” which was published by Munshiram Manoharlal Publishers Pvt. Ltd., New Delhi in 2003. In the page number 112 of this book, it was mentioned that Medicine was one of the five important subjects taught at Nalanda University, near Rajgir, Bihar and Hiuen-Tsiang was also a student at this University.[18] I-Tsing was an another Chinese traveller who travelled Bharat between 671 to 695 C.E. He was a student of Nalanda University and mentioned that Medicine was one of the five important sciences taught at Nalanda and it had eight sections.[19]

Dorothiya Champlin wrote,[20] “In the human anatomy of Indian Ayurveda, not even a single foreign word is found, but the Indian influence is clearly seen on foreign science of human anatomy.” Thus, the word cerebrum denoting the uppermost part of the brain was derived from the Sanskrit word Śirobrahma (Śira**:** + Brahma**:**), where Śira**:** means head and Brahma**:** means supreme. In the same way, the cerebellum denoting hindbrain was derived from the Sanskrit word Śiroviloma where viloma means backward. Further, the Sanskrit word Hrudayam has three parts namely, 1.Hru means to take back, 2. Da means to give and 3. Aya**:** means moving. Hence, Hrudayam means an organ that takes back and give blood, thereby circulating it. The word heart and cardiac were actually derived from this Sanskrit word Hrudayam. Similarly, Danda become dental.

Amir-b-Bahu al Jahiz of Basra recorded in his work [21] in 869 C.E., “In the science of medicine also, the Hindus are highly advanced. They knew some of its special secrets and are experts in treatment of serious diseases.” Sir.W.Hunter of Europe remarked,[22] “Arab medicine was founded on the translations from Sanskrit treatises, made under the command of the Kalif of

Baghdad (950-960 C.E.). European medicine, down to the 17th century, was based upon Arabic." Thus, Bharatian medicine formed the nucleus of Arabic and thereby European medicine.

Thus, these four types of evidences in history clearly proved our Nation's highly admirable achievements in medical science in the past. Hence, Abu Dila Sindhi, who lived in Arabia in ninth century C.E., highly praised our Nation Bharat in his poem with an accurate remark,[23] " Who can deny the excellence of such a land (Bharat) except a fool?"

MODERN DAYS

It is not only in the ancient and medieval periods, in the modern days also, our Nation's achievement in medicine is highly adorable.

Our cardiologists are now on par or even better than their counterparts in interventional cardiology, the technique of drug eluting stents and the complex angioplasty. Our cardiologists at Coimbatore, in Tamilnadu province are the pioneers in the radial angioplasty. Thus, the then British Health Minister advised the British, to undergo the required cardiac surgeries at Bharat, rather than at Britain, as they are better but at less cost including the flight fare, in Bharat.

In our Nation, about forty lakhs cataract surgeries are performed every year. This is the highest in the world. Not only in quantity, but in quality also our Ophthalmologists are on par with international standards.

Serum Institute of India, a Bharatian pharmaceutical company, indigenously manufactured the Human Diploid Cell Vaccine (HDC) for rabies. It is liquid adsorbed form, the advanced and the best form in the world. However, it is four times less cost than that of foreign companies, which are producing only the lyophilized freeze-dried form. Our pharmaceutical companies are exporting their drugs worldwide and they are having considerable share in the world market. Besides, their share in the world trade is increasing day by day, due to the high quality of their drugs at affordable price.

In the field of molecular medicine, the most modern branch of medicine that is yet to develop in full form, our Nation is one of the pioneers in advanced research and development. Now, it is our duty to bring forth these great achievements of our Nation in medical science in the day light, so that the educated and also the common men are aware of it. These should be included in the curriculum of schools, colleges and Universities, especially in the M.B.,B.S., course, where a separate, elaborate and special chapter should be allotted exclusively to this alone. This is the most important and very essential one. The necessity of this can be highlighted by narrating a true incident.

ASSISTED REPRODUCTIVE TECHNIQUES

On 28th July 1978, Patrick Steptoe and Robert Edward delivered a test tube baby, Louise Brown in United Kingdom. Exactly sixty-seven days after this, Dr.Subhas Mukharjee (Physiologist), Sunit Mukharjee (Cryobiologist) and Bhattacharya (Gynaecologist) delivered a test tube baby, Durga at Kolkatta. Subhas Mukharjee got the full consent of the parents after thoroughly explaining the possibility of worst out come of delivering a baby with multiple congenital anomalies and even mental abnormality. Nevertheless, Durga is absolutely normal both physically and mentally and she completed her business management course at Pune, a few years back itself. Here, Subhas Mukharjee adopted the following techniques.

1. Subhas Mukharjee was the first to use human Menopausal Gonadotropin (hMG) to induce ovulation and multiple ovarian follicular formation. hMG is the basic drug now routinely used in IVF programs all over the world. Subhas Mukharjee's colleagues still have the old boxes containing this human menopausal gonadotropin manufactured by the company SERONO, which were routinely used by Subhas Mukharjee in 1977 itself. However, it was wrongly credited with Howard Jones of U.S.A.
2. Subhas Mukharjee was the first to approach ovaries through transvaginal route, by posterior colpotomy. This transvaginal route is now the most widely used approach for follicular aspiration with ultrasound guidance. He was the pioneer in this approach.
3. Subhas Mukharjee was the first person to succeed in freezing and thawing the fertilysed embryos after in-vitro fertilysation, using Di-Methyl SulphOxide (DMSO Reagent). He used it in 1977 itself. This DMSO reagent is the drug now commonly used for freezing the embryos. However, this was also wrongly credited with the Australian Trounson AO who used it only in 1980s.
4. Subhas Mukharjee was the first person to aspirate the oocytes in the stimulated menstrual cycle, fertilyse them in vitro, freeze them, recover, thaw and transfer them into the uterus during the immediate next normal menstrual cycle. This is considered the best and most correct method nowadays. He was the pioneer in this approach.

Thus, Subhas mukharjee's method is not only differed from that of Patrick Steptoe and Edward Robert, but it is the correct method that holds good even now and is followed world wide. Hence, we can say that Subhas Mukharjee was the architect of Assisted Reproductive Technique.

Subhas Mukharjee gave a presentation at the Indian Science Congress in 1978 itself. This presentation was reported in the international science magazine, New Scientist and his work received global publicity. It was also published in newspapers (Amrita Bazar 6th October 1978 and Statesman 6th and 17th October 1978). He along with his colleagues published a note in Indian

Journal of Cryogenics (3-80) in 1979. The full details of this and the aftermath can be read in the book, "Art and Science of Assisted Reproductive Techniques (ART)", published by Jaypee Publications in 2003, in the first chapter, 'Advent of Medically Assisted Reproductive Technologies (MART) in India' written by T.C.Anand Kumar (page numbers 3-5). T.C.Anand Kumar also published a paper in Current Science, a science magazine from Indian Science Academy, Bangalore, in 1997 issue 72 pages 526 to 531, with the title, "Architect of India's first test tube baby**:** Dr.Subhas Mukharjee."

In spite of all these, Dr.Subhas Mukharjee was ridiculed, mocked, harassed, humiliated and insulted by his own colleagues, scientists, media and even by the government. The government of West Bengal asked him to submit a report of his work. A copy of this report, signed by all the three, on 19th October 1978 is available amongst personal papers of Dr.Subhas Mukharjee. West Bengal government set up a 'Star chamber committee' to verify his claims. The committee did not have any expertise in the field of human reproduction to appreciate Mukharjee's knowledge, efficiency and achievements. Yet the committee ridiculed his claims and humiliated him at a public meeting at Kolkatta. These open public ridicules, harassment and humiliation by colleagues, Star Chamber committee and the authorities, forced him to commit suicide on 19th July 1981. Dr.Subhas Mukharjee was thus, ultimately driven to end his life. One can imagine how much sufferings and mental agony, to which he was subjected, paradoxically for achieving a great break through in medical science. That is the saddest state of current times.

Dr.Sukhas Mukharjee would have awarded the greatest honour of our Nation. The scientific and medical bodies and academies would have appreciated his achievements with honour and respect. The media would have highlighted his achievement in the first page. His achievement would have given much publicity amongst our people. He would have aided financially and other means to precede his research in assisted reproductive techniques, so that the cost would have reduced to benefit the poor. But, everything is lost, once for ever. An irrecoverable and total loss to the Nation and the mankind.

Now at least, his achievement should be published with admiration in Government's gazette and official proceedings. The medical and scientific fraternities should accept, appreciate and honour his pioneering work and achievement in the Assisted Reproductive Techniques (ART). Dr.Sukhas Mukharjee should be titled as 'The architect of Medically Assisted Reproductive Techniques (MART) of Bharat,' if not 'of the whole world,' even though he is worth of that, since his pioneering methods in MART are proved the best and followed worldwide now.

Further, we have to analyse the cause of these worst downfalls and sad outcome in our National and personal lives. We, as a Nation, lack in self-pride, self-respect and National consciousness. Instead, we are in total mental slavery with high adoration and full of admiration to anything foreign, especially of western countries, in spite of our glorious antiquity, Himalayan achievements, high technological skills and vast knowledge and wisdom. Hence, throwing away the mental slavery and foreign adoration in lock stock and barrel, imbuing our present and future generation with our ancestor's glorious feat, to raise their self-pride and patriotism and arousing the National consciousness at the highest level, amongst people in all walks of life, especially of the noble medical profession, is the need of the hour. This should be done with utmost sincerity, so that our Bharata Mata, the Visva Guru will once again guide the whole world into peace and prosperity.

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