

Gynaecologic Practice in the Next Millennium.

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It is possibly true to say that the largest scope for change still lies in men's attitude to women and women's attitude to themselves.

Susan B. Anthony.

This is a very challenging subject. There is such a tremendous surge in knowledge in all fields that it is now impossible to keep track of all the advances that have bearings in every field of human activity. Furthermore, the compartmentalization of knowledge is done away with. It is now realized that apparently unrelated advances can have numerous advantageous applications. We will consider a few important gynaecological subjects in this presentation.

Gynaecology is a comparatively young speciality in medicine. As a matter of fact, Obstetrics and Gynaecology was a subject handled most reluctantly by physicians. It was only in the last century that awareness of the uniqueness of Obstetrics and Gynaecology dawned on the medical world. But the speciality was given a grudging recognition.

Departed Millennium :

Initially, all changes were very slow. But since the last half century, the pace picked up as significance

of normal physiology of the genital system and its aberrations came to be understood better. Today, the pace is too fast. This has resulted in the formation of sub- and super-specialities in all branches of medicine and gynaecology is no exception. But the most important point is that almost all the changes are for the better.

As a result of the advances to date, there are better facilities already. We have better aids to do our job still better. We have good clinical methods of examination. Pathological tests, especially more accurate hormone assays, have made diagnosis easier. And there are dramatic advances in imaging methods with the advent of Ultrasonography, colour Doppler, computerized tomography (C.T.Scan) and Magnetic Resonance Imaging (MRI) and 3-dimensional visualization. Once it was common that treatment was given for the patient's complaints without trying to correlate patient's history, the chronology of the symptoms and proper clinical examination. It is now mandatory that diagnosis must precede treatment. One can refer to literature in various journals and books when in doubt. Internet facilitates reference to literature. There is a better, more detailed patient-doctor dialogue wherein diagnosis, treatment, alternative therapy, prognosis and risk factors are explained to the patient and her family. Besides allopathy, other disciplines in medicine are also explored and the best is freely chosen from other disciplines. Patients do have the choice not only to choose their physician but also the modality of treatment. Today, there is stress on evidence based medicine. Consumer Protection Act (CPA) will usher in better medical documentation and this will be of immense help not only to the patients but the medical fraternity. It will frustrate attempts at frivolous litigation.

Television will soon be all pervasive even in the remotest areas of the country. This is a very powerful medium that will help dissemination of knowledge even

amongst the illiterate. TV may almost by-pass the need for learning the alphabet. Advances in information technology (IT) will be a big boon for a large country like ours because communications will be ever so easy. We will see marked improvements in medical audit in the course of a decade or so. Though I mentioned earlier that it is very difficult to keep track of all the advances, Search in the WEB has simplified this considerably.

We will discuss a few of our very special problems.

Fertility Control :

Despite the fact that India was the first country in the world to adopt a national family planning policy, our results are too dismal. But I am confident that this picture will change drastically despite political apathy as women's literacy rate rises. We have the classic examples of Kerala in our country and Sri Lanka who have a much healthier fertility control figures and also obstetric audit. Goa, Tamil Nadu, Maharashtra and even some parts of Madhya Pradesh are already catching up. Recent reports suggest that even in parts of Uttar Pradesh and Bihar, community awareness about fertility control has resulted in increasing demands for contraceptive measures. With women's empowerment, they will force men to take responsibilities for their action.

INDIAN POPULATION :

Year	Population In Millions.	Birth Rate.	Death Rate.	Sex (Ratio F : 1000m.
1901	238.38	45.8	44.4	972.
1911	252.09	49.2	42.6	964.
1921	251.32	48.1	47.2	955.
1931	278.91	46.4	36.2	950.
1941	318.66	45.9	37.2	945.
1951	361.08	39.9	27.4	946.
1961	439.23	41.7	22.8	941.
1971	548.15	41.2	19.0	930.
1981	685.81	31.7	15.0	933.
1991	844.30	29.9	09.8	929.

Demographers Think That Indian Population Attained The Billion Mark In October, 1999.

Increase in the population is mainly due to decrease in the death rate. In the first few decades of the first millennium, Indian population was in equilibrium as both the birth and death rates were more or less equal. Though the state of health care in the country is far from optimal, the little improvements in medical facilities have reduced the death rate. It takes much longer for birth rate to fall; this was evidenced in Europe from 13th to 16th centuries. **BUT THE DECREASE IN FEMALE TO MALE RATIO IS VERY DISTURBING.** Indian population will overtake the Chinese population around the year 2020. Zero population is estimated to set in by the year 2060. But demographers believe that birth rate will decrease more rapidly due to rapid urbanization and industrialization, overall assumed wisdom of the masses, governmental and social efforts (e.g. Tamil Nadu, Goa, Maharashtra, parts of Madhya Pradesh and of course Kerala.).

Developments in biological sciences empower couples to know the characteristics of the unborn child. This may induce couples in having more "trials" to have "the right" type of child ; e.g. a complete genetic map may be available, giving information about the child's I.Q., hereditary diseases etc.

Infertility :

There are tremendous advances in the management of infertility, especially in the last three decades. This has been possible because of better understanding of causes of infertility, improvements in therapy (recombinant hormones-gonadotropins, GnRH, Blastocyst culture and biopsy). It is possible that IVF-ET, popularly known as the TEST TUBE BABY, may soon become historical.

The story of Dolly-Molly cloning in the sheep has completely revolutionized reproduction. Cloning has also succeeded in other species. Cloned animal has also been found to have normal fertility potential. Cloning raises very

serious ethical dilemma. But ethics change over a period of time. The question is, will cloning make male of the species redundant for conservation of the species of HOMO SAPIENS?

Cloning will make it possible to 'manufacture' organs for transplant, doing away with rejection of the heterogenous graft. How about a "cloned" uterus from men's cell(s). Then will men carry their pregnancies?

Surgery :

Surgery is now considered as the last treatment for the patient's complaint. There is also a radial swing towards conservative surgery from the earlier emphasis on excision of the "offending" organ. With the advent of endoscopy, there is now also a rightful preference for minimally invasive surgery. Endoscopic removal of uterus (hysterectomy), ovarian cysts, endometriosis, repair for S.U.I., urinary fistulae, genital prolapse is now accepted as preferred method. The high cost of endoscopic surgery is only a temporary deterrent to its more widespread use in our set-up. It is possibly a matter of short time when robots will do extensive and complicated surgery with great precision. Incision, haemostasis, dissection, cutting, suturing — all this will be done by remote control. Will humans lose their surgical skill? This concept may hurt human ego but robots will possibly win the day. (In any case, humans make robots). Homologous organ transplant(s) grown from host's cells by cloning will replace reconstructive surgery.

Cancer :

Radioactive elements are used for cancer imaging — Position Emission Tomography (PET) scans. A vaccine is being tried for metastatic breast cancer. The vaccine causes the body's immune system to recognize as foreign a part of protein (HER/2neu) that is produced in increasing amounts in 25% of patients with metastases. It is possible that drugs Tamoxifen and Raloxifene can prevent breast cancer. They may also prevent Osteoporosis and have a more beneficial effect on lipid profile (less atherogenic).

Cervical cancer will be prevented. Endometrial cancer risk will be prevented by HRT with antiestrogens (Combination Pills)/androgens.

Medical Therapy :

Most of the times, present day medication suffers from having to give a large dose that moves all through the circulation and tissues and only a fraction reaching the desired organ. A small molecule, 'Passport' can attach to a large size therapeutic protein and smuggle into cells. This will ensure a small dose to act specifically at the desired site and reducing the side effects.

Doctors can use patient's DNA database to tailor drugs for their specific complaints and eliminate possible adverse effects.

Menopause :

Increased life span will mean that there will be more and more women living a considerable part of their lives long after ovarian senescence. It is estimated that in the year 2000, 31.2 million women will undergo menopausal transition. They will be vulnerable to all disadvantages and sequelae of persistent estrogen lack. Besides the common affectations of Vasomotor system, Osteoporosis and Urogenital Atrophy, estrogen lack is strongly implicated in Cognitive decline and Alzheimer's Disease.

Newer H.R.T. techniques appear safer. Selective Estrogen Receptor Modulator (SERM) like Raloxifene, greater use of Androgens have been found useful in initial trials. Osteoporosis can be managed with the use of SERM alandronate and androgen.

Genetics :

There is epoch-making news. The human genome has been nearly completely mapped. This opens a totally new vista in medical research. The role played by various genes, individually or in combination, in predisposing an individual to various diseases is being probed. Some information, though scanty at present, is

already available. Serious thought is directed towards genes replacement as a possible therapy for prevention/cure of congenital disorders.

There is a better understanding of inherited diseases. This opens the vistas for (1) application of knowledge of genetic disorders for early counselling and intervention in early pregnancy, (2) genetic predisposition to aging diseases (cancer of breast and ovaries), (3) gene therapy — embryo research, diagnosis of genetic disorders for early counselling and intervention in pregnancy.

Aging :

Most humans have great fear of death and wish to postpone it (?) permanently. There is an intense research going on in the process of aging and how to prevent/postpone it. Antiaging has now attained the status of a superspeciality involving specialities of gynaecology, endocrinology, geriatrics, orthopedics and cardiology.

Biomarkers for aging are physical strength, exercise tolerance, cardiopulmonary function tests, lean body mass, lipid profile, serum fibrinogen, hormone levels — especially Human Growth Hormone (HGH). Even as of today, life expectancy can be easily raised to 120-134 years with proper diet, antioxidants, multivitamins, exercise, meditation and yoga.

HGH has specific antiaging effect and it can reverse aging. It increases bone density, hair thickness, energy and decreases body fat. Fat people, especially people with central body fat — deep cushion of fat under the gut, secrete lesser amount of HGH. With proper care and correction of falling HGH levels, human life span can be easily raised to 400 years!

Internet — Medical Revolution:

Family physicians can feed their patient's signs and symptoms into a computer and get instant diagnosis and suggested treatment.

Orthopedic surgical procedures are performed by hooking to the Internet and obtaining guidance. Transcontinental demonstration of gynaecological surgery via satellite is done in continuing medical education sessions. U.S. military is attempting to perfect ways surgeons back home will use virtual reality to operate on battlefield casualties.

Obviously, gynaecologic applications cannot be far away.

Medical Records:

An individual's medical 'SMART CARD' with detailed data of medical history, laboratory tests and imaging reports will be prepared. These cards will be connected to WEB site with information about rare medical conditions so that the physician does not have to run to the library for information.

Next Millennium:

Frankly, it is impossible to think of the day 1000 years from today for this mortal who may atmost see a few years of the 21st century.

But man will continue to enjoy his hobby that distinguishes him from the rest of the animal kingdom — the hobby of DAY DREAMING. The world has changed mainly because man has dared to daydream his fantasies inspite of all the ridicule heaped by the rest. AND SO TOMORROWS CANNOT HELP BEING BETTER AND BRIGHTER.