Role of Pathologists in the New Millennium

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Twentieth century has been the century of change. Change brought about by numerous inventions. These inventions have revolutiOnized the way we think, the way we work and that way we interact. The epicenter of these innovations have been the west hut due to tremendous advancement in communication technology; we in the east have also benefited to a lesser extent. Technological advancement has necessitated updating of knowledge and skills of professionals engaged in service industry. Pathology and Pathologists form the bedrock of modern medicine and play a very important role in the overall management of a patient. This includes intervention to obtain a sample, proper processing of this sample, reading of the result, writing a meaningful report, communication to the patient and treating physician, treatment and monitoring response to treatment. To this one can add public and physician awareness program by organizing courses, declaring data on diseases and participating in surveillance programmes.

Pathologists in the new millennium will have a very important role to play to achieve the most important aspect that needs our attention in this country. This is proper training of future pathologists, guidelines for the maintenance and assessment of professional performance, commitment to life long learning process such as continuous professional development. These are basic ingredients for making of a competent pathologist. We have to provide environment to achieve these targets by organizing courses, con ferences, cl inicopathologic meetings and telepathology sessions.

The separation between Histopathology. Haematology, Microbiology and Clinical Pathology is being blurred by advances in Molecular Biology. The advent ol nucleic acid based diagnostic methods such as polymerase chain reaction (PCR) are increasingly being utilized for the detection of microorganisms such as hepatitis B and C virus, mycobacterium tuberculosis, Chiarnydia trachornatis etc[1]. Source of outbreak can be traced by DNA typing of microorganism. Recombinant DNA technology is being utilized for genetic diagnosis for example chorionic villous biopsy can be used to prenatally diagnose disorders like J3-thalassemia, cystic fibrosis or Duchenne muscular dystrophy[2]. Alongwith immunoh istochemistry, gene rearrangement studies are being utilized to study clonality in lymphoproliferative disorders[3]. Molecular technology can examine the HLA alleles at a much higher resolution than serologic techniques. Use of this technology has surely opened several new avenues for practicing pathologists. Interphase cytogenetic techniques which analyse chromosomes in non dividing cells such as Fluorescent in situ hybridization (FISH) is proving highly successful technique for diagnosing congenital abnormalities and evaluation of neoplastic diseases etc[4]. There is an ever growing list of chromosome specific DNA probes. The filter hybridization techniques are suited for the analysis of generic alteration such as gene amplifications, deletions and point mutations[5]. In situ hybridization techniques are being used to localize oncogenic expression such as WTI in Wilm's tumour. All this technology needs investment in hardware and manpower training.

Information strategy for modern pathology services will have a major role in deriving a change. Royal College of Pathologists in UK has published a report on core training programme in Pathology information[6]. It says the current knowledge amongst pathologists may be sufficient to practice diagnostic pathology but may be insufficient to direct information technology. All pathologists should have knowledge of basic modular hardware architecture of personal computers. They should be aware of the popular operating system MS-DOS. Windows 95/98, NT 4/5, UNIX, MAC etc. They should have working knowledge of at least one operating system, one word processing, spreadsheet and database program. in addition histopathologists should know digital still and video image generation,

storage and transmission, microbiologists should know remote order entry methods, automated laboratory order entry, computer alerting of significant findings, epidemiology and surveillance, chemical pathologists should know automated laboratory order entry, minimal requesting, use of computer interface, alerting of abnormal results. data extraction etc. and haematologists should know computer interfaces, computerized alerting of abnormal results, data extraction and access to evidence based or validated information.

Pathologists in the new millennium are not going to sit in a corner of a pathology laboratory looking down the microscope on to a piece of tissue on a slide isolated from the rest of the community. He/she is going to be a dynamic individual, interacting with the community, physicians, epidemiologists etc. As a chemical pathologist he/she is going to run lipid, diabetic and endocrine clinics, as a haernatologist alongwith treating and diagnosing thalassemia, work on gene therapy and bone marrow transplantation, as a microbiologist working on mutations in microorganism responsible for treatnient resistant and as histopatliologist alongwith various interventions working on genetic alteration in malignant tumours and metastasis.

It is in the interest of pathologists to adopt change as rapidly as possible otherwise pathology will be rapidly taken over by other specialties losing its identity. Many medical schools world over are switching to the problem based learning further threatening the role of pathologists in the field of medical education. It is upto us to evolve strategies for scholarly activities to maintain our unique position as pathologists rather than submerging in the sea of clinicians and basic scientists.

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