Introduction

PATIENT ORIENTED TEACHING

My own training in Medicine in the 1950s was of the traditional kind, beginning with two years on detailed anatomy, physiology, biochemistry and pharmacology (the "preclinical subjects"). This was followed by three years in the hospital for clinical training. I do not think that there was anything wrong with this system; it certainly stood me in a good stead for my medical career.

In the 1990s, the General Medical Council of the UK decided that there should be a new curriculum in which clinical and preclinical divisions of medicine were to disappear, there was to be a great reduction in the need for students to memorise a large number of facts, and medicine would be taught as "systems" and "topics". This type of integrated teaching had been pioneered for some decades, notably by McMaster University in Canada and Maastricht University in The Netherlands. A typical topic might be "cells and tissues", while the system that concerned my own teaching responsibility was "the cardiovascular system". At the same time, my medical school, the Charing Cross & Westminster Medical School, was undergoing an amalgamation with St Mary's, the Royal Postgraduate Medical School at Hammersmith Hospital, and the National Heart & Lung Institute, to become Imperial College School of Medicine, London, with 300 students per year.

As a new medical school, adoption of the new curriculum was imperative in order for our medical qualification to be recognised for registration. I had the task to try and evolve a suitable cardiovascular system course out of the teaching resources of many former

departments in several formerly separate institutions. A reasonable degree of success was recognised when the course was inspected in 2000. Nevertheless, I do not think the changes were as radical as should logically have been implemented in the spirit of the new approach. We should have been putting even more emphasis than we did on presenting clinical problems first, and then explaining what basic science information was important and relevant. With this approach, anatomy, physiology and biochemistry become "postclinical" subjects rather than preclinical.

In this book, patient case presentations are made to illustrate some of the common clinical problems encountered in cardiovascular clinical practice. From these, I derive the basic science required to understand such cases. If we are not to have to memorise a lot of knowledge by rote, it is imperative that the student be able to think out the clinical features logically from relevant basic science principles. In such a book, it is not possible to be completely comprehensive. Omissions and choices must be made, and I have followed the same choices as for the Imperial College course. There is inevitably some personal bias in such choices, which I have made on the basis of the material I expected my students to know something about in the various assessments in the course, up to final MBBS. However, it is possible that qualified doctors who learned medicine according to the old system may find the book interesting in that they may not be familiar with the clinical-postclinical subject links presented here.

The text is interspersed with statements and injunctions in white boxes, in order to point out to the student some particularly fundamental points. There are also questions in grey boxes which the student should be able to answer before continuing; some of these questions require the student to work things out, as the answers are not to be found simply by reading the text superficially.

There are many aspects of cardiovascular medicine which cannot be learned from a book — otherwise, there would be no need to have a medical school course! It is particularly important that students supplement their reading with practical learning. This includes:

1. The study of three-dimensional anatomy by means of modern imaging and computer techniques, if possible by cadaver dissection, and by observation of living anatomy in the operating theatre.
2. Practice the interpretation of radiographs and other diagnostic imaging techniques. These diagnostic images cannot be satisfactorily illustrated in a book of simple format, and in any case, many of these techniques rely on the appearance of movements within the cardiac cycle.
3. Practice the taking of a history and the examination of patients. You will be taught in medical school how to do this for the whole patient and all systems. Specialised cardiovascular history and examination is useful for cardiovascular physicians, but the student should incorporate these into his/her overall system of history and examination. Good clinical skills are what make a good doctor, not his/her volume of theoretical knowledge.
4. Understanding of disease processes demands the study of pathological specimens and microscopic appearances of cells and tissues. Practice these ways of visual learning diligently.
5. Much practice is required to acquire the skill of full interaction with other human beings, not just patients, but also their relatives, your colleagues in all disciplines and with managers.

Medicine is useless without understanding the science, and clinical judgement should mainly be based on scientific criteria. However, practical medicine must also take account of social and ethical issues which are illustrated in a few of the patients described in this book.

Of all the postclinical subjects required to understand the cardiovascular system, I have found physiology to be the most important: I recommend *An Introduction to Cardiovascular Physiology* by J.R. Levick, ISBN 0-750-61028-X, published by Butterworths, London, 1991. Inevitably, the description of clinical cardiology *per se* is incomplete in this text; there are many good text books of cardiology to consult in order to expand knowledge of this subject. I suggest for this purpose, especially for revision for finals, the *Mosby's Crash Course in Cardiology*, ISBN 0-7234-3152-3, which also gives tips on passing the final clinical exam.

At my retirement seminar at the National Heart & Lung Institute in June 2000, I was presented with a memorial book entitled, *A Scientific Offering from Friends*, in which is presented the "TEN COMMANDMENTS FOR SCIENTISTS". The 7th of these is, "You shall not believe everything written in textbooks and taught by Professors. Believe only those which you understand with your own brain". The understanding of science is dynamic, because of the process by which existing theories are disproved and modified or replaced by other theories. A textbook can only give a snapshot of the generally held understanding of the subject at a particular time, in this case in 2001. The book should not be regarded as a collection of unassailable fact. Expect, and be receptive to, the changes of ideas that you will encounter in future as research reveals new ways of interpreting clinical observations.

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