The Art and the Science of Medicine or The Science and the Art of Medicine

Kris Chatamra

Fellow of The Royal Institute, Academy of Science.

Director of Queen Sirikit Centre for Breast Cancer

King Chulalongkorn Memorial Hospital.

Abstract

Two very broad areas in medicine are the art and science. Discussions over the years have polarized these two major subjects. This article attempts to amalgamate the salient views and to establish a general cohesive approach in medicine.

Key words: Art and Science in Medicine

Illness is both a tragedy and a challenge. It threatens us and disturbs our inner equilibrium. To combat a disease requires effective mobilization of resources and to a wise man, through all available and possible channels. In a life threatening condition such as cancer it is not the polarization of the art and the science of medicine which helps to achieve a common goal. The science may cure the disease but the art treats the patient. To achieve this balance is to take a holistic approach, and quintessentially a combination of applied science and the art of medicine. An aspiring doctor must first know the demand of medical practice and recognize the vocation. Science has to be learned and applied it well, but the subtle art of medicine must be mastered.

One can look back through the history of medicine and along its tortuous but definitely narrow path; a few illustrious names instantly spring into one's mind. Amongst the past esteemed physicians one also wonders, in the context of the modern world, what Hippocrates, Plato, Galen, Hunter, Sydenham, Lanaec, Pasteur, Holmes and Osler, to mention only a few, would make of the roles of the two principal disciplines of their noble profession. These two titanic topics have been drilled into every medical student's mind from time immemorial. In good clinical medicine the two themes work together in cohesion. There are, however, proponents for the exclusive usefulness of one and very little of the other; this is the reason for this long drawn out argument. In the original Greek text of *Precepts*, one of the dictums presented was "where the

love of man is, there is also love of the Art". This aphorism has, indeed, been dedicated to Hippocrates himself. Hippocrates, however, was also the father of scientific medicine.

The aura and the assurance of clinical medicine are mainly due to the shrewd application of the art of medicine. The accomplished clinician cleverly but wisely avoids falling into the trap of simplicity. In Oscar Wilde's the *Model Millionaire* an apt comment sums it up very well, "There are moments when art almost attains to the dignity of manual labour". In an article in the British Medical Journal just before the Second World War when the British medical syllabus was undergoing a change, Sir Andrew MacPhall made the famous request, "a little less science and a little more art, gentlemen". He argued that the medical students had to be converted into experts in several fields of science and their minds so bemused, instincts dulled and sympathy so blunted by the long process of education in those sciences, that they are forever excluded from the art of medicine, which was to Hippocrates 'the Art' of all arts. Another celebrated physician, Sir William Gull, gave a more balanced view but still tilted towards the clinical and practical side of medicine. He wrote "medicine requires not only the intellectual cultivation of science but the patience and practical skill of an art. At the bed side we must be animated by the faithful artisan of the men whose object and duty is practical work; for when the art of medicine is needed by the suffering and the dying it is not a question of mere theoretical knowledge and extraneous requirement. But the skill in the commonest art is not to be attained without much practice, far less in the complicated art of healing, where every case presents some peculiarities." This concept had actually been strongly advocated by Bombastus von Hohenheim, a renowned Swiss physician who burnt the works of Galen before his students at the University of Basel. His behaviour bequeathed the word "bombastic" to posterity. He taught his medical students a simple but subtle approach to the practice of medicine, "The art of medicine cannot be inherited, nor can it be copied from books; you will not need them; patients are the only books." This philosophy, in the present climate of evidencebased medical practice is, of course, unacceptable. In Shakespeare's *All's Well That Ends Well*, "But thou art too fine in thy evidence; therefore stand aside." seems to favour the scientific attitude.

The present era of superspecialization entails further division between the art and the science of medicine. There is some truth in the derogatory banality that specialization is "knowing much about nothing." Specialization also shifts the responsibility

of the individual doctor to a collective body of experts, each claiming deep scientific knowledge of a fragment of the patient. No one, however, is wholly in charge and fully responsible. It is tantamount to dumping a product to keep the price up, a practice widely established in other less noble professions. It is not unusual for an illness to be intensely treated by a horde of vulturous specialists and the carcass is left unattended because science has run its course. The holistic approach to a patient and his illness has been highly regarded as ideal from the time of Hippocrates. This simple and sensible approach has, somehow, and for some inexplicable reasons, been quietly abandoned in favour of specialization and in the name of science. It is a common practice for a patient with cancer to be operated upon by a brilliant surgeon. The surgeon would proclaim his success before contemptuously refers the patient to a medical oncologist for chemotherapy. After the completion of chemotherapy the patient is then passed on to a radiotherapist for further treatment. A problem may arise, however, and it may not fit exactly into any of the specialists' domains; it is unlikely that any of them is willing to take on the trouble and the patient as a whole. This sad scenario is a major pitfall in oncological medicine.

Over the last few decades the number of cynics of the art of clinical medicine has been getting larger. The reasons are several. First and certainly the most relevant is the stupendous advances in all scientific subjects and in particular those which pertain to medicine. This phenomenon has made it possible to unravel a great number of problems which hitherto have been scientifically inexplicable. This inexorable progress in medical science has also erased some of the mystique of clinical medicine. The art of auscultation was made possible because of the invention of the stethoscope by Lanaec. He inadvertently started a brigade of clinicians who professed to make a list of cardiac diagnoses; all were based on little sounds of variable pitches. Sadly a vast number of less accomplished doctors cannot master this particular art of medicine. Science comes to the rescue. With the routine application of echocardiography it is now possible to make accurate and repeatable cardiac diagnoses attainable. Major changes have swept through other branches of medicine, not all for the benefit of patients; for example, some young clinicians would only make the diagnosis of acute appendicitis with the aid of a CT scan of the abdomen because it has been claimed by recent publications that consistent oedema of an acute appendix is demonstrated best by using this technique. This is a sad outcome of a rapacious demand for the use of science at any cost. These pusillanimous clinicians should definitely consider retraining to learn the classical art of clinical diagnosis.

The contradiction of the claimed scientific dominance is perhaps well demonstrated in oncological practice. Modern medications have gained phenomenal acceptance and trust by both doctors and patients, but there is the ubiquitous comment that modern oncologists cannot handle their patients in all aspects except the pure science of oncology. From the moment of diagnosis most oncologists do not have the ability to communicate with their patients and their families with the expected degree of confidence, trust and hope. A great deal of gloom seems to prevail under the cloud of scientific facts. A line in Shakespeare's play, *Richard II,* sums it up very well indeed, "How dares thy harsh rude tongue sound these unpleasing news?" Another line in *Troilus and Cressida,* "He will be the physician that should be the patient" finishes it off very aptly.

"Your most unhappy customers are your greatest source of learning" is the guiding principle which Bill Gates has exploited to build his prodigious empire. This concept is easily applicable to all professions, from the primeval era to the present time, and medicine is certainly of no exception. Indeed very few unhappy patients are concerned with the science of medicine but most of the dissatisfied customers blame the non-scientific side of the medical service for their discontent. The unhappiness may range from a minor inefficiency to a disastrous breakdown in communication. The doctor and patient relationship forms the vital axis around which trust and confidence are built. The patient's compliance to therapy and the ultimate success of the treatment is often dependent upon this special bond. This art of medicine needs time and hard work to nurture and to perfect and it should be achieved along side scientific learning.

Medicine must always be an applied science and regardless of its state of development it differs from all others because its application is to man himself. If there were no sick people there would be no need for Medicine, the Art or the Science. To maximize the application of medical science calls for certain qualities in the practising physician; this differs entirely from the requirement of the pursuit of the other applied sciences. Herein lies the Art of Medicine, along side the Science of Medicine.