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THE SCUDDER ORATION ON TRAUMA

"ACHIEVEMENTS AND PROBLEMS IN THE TREATMENT OF TRAUMA"

by

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Mr. President, members of the Board of Regents, ladies and gentlemen:

You have conferred a great responsibility as well as a great honour upon me, Mr. President, by appointing me to deliver the Scudder Oration on Trauma on this important occasion, the 55th Annual Clinical Congress of the American College of Surgeons.

I do not propose to deliver a scientific paper to you for I doubt my competence to do so since with increasing age and experience I have come to doubt the validity of many of the propositions which I might have submitted with enthusiasm years ago; rather I propose to put to you my opinions and thoughts on the general progress in surgery which has occurred over the past 40 years, and the problems which appear to me to have arisen from this very progress. I base my opinions on a long experience of the practice and teaching of orthopaedic surgery. Age and experience often but not always lead to wisdom. I must leave it with you to decide, later, which way this aphorism applies to me.

This Oration was founded to commemorate the work and to perpetuate the name of Doctor Charles Locke Scudder of Boston. Though Scudder's contributions to knowledge of the

treatment of fractures were significant, particularly the publication of his textbook on fractures in 1900, the popularity of which is indicated by the issue of many editions, few would doubt that the most important aspect of his work was his untiring effort to establish hospital services organised specifically and exclusively for the treatment of fractures and his wise counsel as first Chairman of the Committee on Trauma set up by this great College 47 years ago.

Until the last half of the 19th century the treatment of fractures occupied a large part of the time and energy of the surgeon for the overwhelming danger of sepsis made any elective surgery, especially upon the contents of the body cavities, almost unthinkable. Even though much of the surgeon's time and effort was occupied by the care of patients suffering from limb injuries most of the treatment was empirical for real knowledge of the processes of natural healing was almost non-existent and, with some brilliant exceptions, those responsible for treatment were ill trained and ill equipped.

During the latter half of the 19th century the advent of aseptic surgery and anesthesia, the result of the work of Lister and Morton opened vast new fields to the surgeon. Unfortunately this enormous increase in the scope of surgery deflected most surgical effort and enquiry to the surgery

of the abdomen. The main interest of most surgeons was in this new and exciting field to the detriment of the surgery of trauma which no longer occupied the first place either in numbers or in interest.

The enormous number of limb injuries occurring in the first world war directed attention to the generally unsatisfactory methods of treatment and the work of Sir Robert Jones and his American and British colleagues during and after the war prepared the way for the revolutionary changes in which Scudder took so prominent a part; changes not so much in techniques of treatment but in organisation. He and his enthusiastic colleagues realised that the treatment of trauma was a large and important part of surgery and that quite apart from war the number of those suffering injury was likely to increase rather than decrease. How right he was for at the present time injury is the commonest cause of death between the ages of 14 and 40, and those suffering injury impose the greatest single load on any general hospital.

Scudder and his colleagues in this country and in Britain realised that efficient treatment could best be obtained by the establishment of organised fracture services and that the essential conditions of such a service could be summed up under four headings:-

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segregation of cases, continuity of treatment, after-care and unity of control. It was implicit in such an organisation that those responsible for control should be experts in the surgery of the locomotor system and it is therefore not surprising that as time has elapsed such services have come to be, with few exceptions, the responsibility of orthopaedic surgeons, indeed the training of orthopaedic surgeons is now so organised as to give the experience and instil the knowledge necessary for the discharge of this responsibility.

The establishment of fracture services and in particular the recognition of the fact that injuries to the locomotor system are best treated by those trained and equipped for such work has proved to be an enormous success. No one can doubt the remarkable improvement in results and the consequent reduction in the number of permanent cripples. This is a real achievement.

Acceptance of the principle of segregation of patients suffering from limb injuries under the care of those skilled in the treatment of crippling diseases was certainly one of the reasons for the early emergence of orthopaedic surgery as a major surgical specialty. It was not, however the only reason. People in this century have experienced and are continuously experiencing greater scientific and technological advances than in any previous period in history,

Surgery has advanced with the other disciplines so that today methods of diagnosis are so sophisticated, operative techniques so complicated, and knowledge of physiology, pathology, biochemistry and the other basic sciences relative to surgery so extensive that a single individual cannot possibly master the whole field of surgery. Specialties have therefore inevitably emerged, not only orthopaedic surgery, but neurosurgery, cardiothoracic surgery, urological surgery and many others familiar to you. The general surgeon I knew as a student has virtually disappeared.

Whether the division of surgery into separate specialties is desirable may be open to argument, but the inevitability of the evolutionary change is not.

Whilst it is true that patients have benefited greatly from this evolution, certain effects have emerged, which were partially foreseen by Scudder and his colleagues, but are less clearly appreciated by the present generation, and which I, for my part, view with considerable apprehension. I am particularly concerned with some of the modern proposals for surgical training and some of the aspects of treatment which are resulting from specialisation.

Over the past few years there has been an increasing tendency to restrict the training of a young surgeon to the acquisition of knowledge and expertise of his specialty alone with a fine disregard of the main principles of surgery in general. I understand that in some medical schools

the student is asked to choose his specialty before he is even qualified to practise as a doctor. Such restriction in training is producing and will produce knowledgeable technical experts familiar with their own field but at a loss when faced with problems outside their restricted horizon. Unfortunately those who are ill or injured cannot place themselves in a neat category and conveniently present themselves to the appropriate narrowly trained specialist. A multiplicity of pathological conditions, many only remotely connected with orthopaedic surgery, cause backache, and the nefarious activities of the automobile are not confined to injury of one isolated system. Accurate diagnosis can surely best be achieved by the surgeon whose specialised ability is acquired in addition to a reasonable knowledge of surgery in general.

The basic problems in surgery; tissue repair, infection, neoplasia, the general reaction of the body to trauma, shock and the maintenance of fluid balance are the same or at least are similar in all specialties and it might be argued that these principles can be taught during a training programme restricted to one specialty. But the generality and importance of these principles is surely best appreciated by the student who has been faced with these problems in several branches of surgery. He who has studied Shakespeare only cannot be said to have a comprehensive knowledge of the Beauty and complexity of English literature, nor, what is

more important, is he able fully to appreciate Shakespeare's genius.

What is true of diagnosis is also true of treatment. In large cities and areas of dense population there are usually large hospitals staffed by every type of specialist and the surgeon can solve his problems of diagnosis and treatment by consultation and reference to his colleagues. But what of the small towns and rural areas where specialists of all types are not available, nor are likely to be available for many years? The problems facing surgeons in such situations are well illustrated by the surgery of injury, in which the lesions are not necessarily confined within one body system and are always emergencies. Surgeons may and frequently do find themselves faced with the victim of an accident suffering from injury to the head, thorax or abdomen together with an assortment of limb injuries all of which require immediate decision and correct treatment. Specialists in all the system involved are frequently not available at all and even more frequently are not immediately available. Surely it follows that the surgeon, whatever his specialty, must also have sufficient knowledge of surgery in general to enable him to make a satisfactory diagnosis and to have the technical ability to perform the more straightforward emergency operations on all systems. It is singularly useless for a highly skilled orthopaedic surgeon to deal expertly with a shattered tibia while the

patient is dying because of his inability to diagnose and if necessary to remove a ruptured spleen or to diagnose and drain a haemopneumothorax.

Training surgeons exclusively in the treatment of trauma is in my experience not the answer to this problem for to train a specialist in the treatment of trauma is to train a specialist in all the specialties; an attempt to reverse the evolution which itself has led to specialisation.

In addition to the tendency to restrict training to the chosen specialty the advances in the surgical sciences have also led to the almost universal conviction that the minds of these young men should be focused upon the scientific and research aspects of their chosen specialty almost to the exclusion of the broad principles of surgery in general, the teaching of clinical surgery, of operative techniques and the art of dealing wisely and compassionately with seriously ill human beings. It is in my opinion essential that those of us responsible for the present training programmes and for the proposed changes in training should clearly realise that the main objective is to produce knowledgable, safe, practical surgeons, for over 90% of young trainees will spend their lives in the active practice of surgery, having neither the desire, peculiar ability, nor facilities for scientific research. Such men when faced with illness or injury must be competent to make a diagnosis, to decide treatment with sound judgment and have the technical ability to carry out such treatment.

I believe that the greatest mistake will be to direct the main efforts of the trainee towards the laboratory and scientific aspect of his specialty to the detriment of the acquisition of experience in clinical observation, examination, deduction and practical technical dexterity. Surgery is not an exact science nor is it likely to become so in the foreseeable future. Our patients are not scientific problems, they are human beings in distress and those called upon to diagnose and treat their disabilities must have been brought up in the tradition of the doctor - judgment, compassion and understanding.

I do not intend to convey to you the impression that I consider the scientific aspect of surgery to be unimportant; to do so would indeed be stupid, for it is to the surgical sciences that we must look for advances in the future. Rather I wish to place the teaching of the sciences in proper perspective. As I have said already we must remember that over 90% of young surgeons in training will spend their lives in the active practice of surgery with no facilities or indeed inclination for pure scientific study or laboratory research. The few destined for an academic career should acquire their particular, and it is particular, expertise in addition to their main training. We should think carefully before we mix the two and compel all young men in training to

extensive, arduous, theoretical and laboratory discipline to the detriment of clinical training. This would indeed be to make the tail wag the dog.

I have used the surgery of trauma to illustrate some of the problems of training and practice which results from specialisation, but the problems are not confined to the surgery of injury for they apply to the whole field of surgery. There is, however, an even greater danger which appears to me to be becoming more and more apparent with specialisation and with increase in knowledge of the science of surgery. When I was a student 40 years ago a surgical operation was a dangerous procedure carrying an appreciable risk to life. Since then developments in anaesthesia, much better understanding of the basic problems of blood and fluid replacement and electrolyte balance and the ability to control infection with antibiotics has not only made operations safer but has greatly extended their scope. Now it is true to say that almost any new operation designed by a surgeon is technically feasible and compatible with survival of the patient. There is in my view danger that this extraordinary extension of the technical feasibility of operations is not always accompanied by a corresponding increase in the surgeon's judgment and sense of responsibility to his patient. We are perhaps tending to forget that it is not life alone which must be considered but the quality of life, and that the worst reason for performing any operation is to demonstrate that the

expertise of the surgeon is such that he "can get away with it". It is not so much a question of what can be done but of what ought to be done. Many of us who have seen the results of some extensive surgical procedures are appalled at the resulting quality of life for the patient. It is useless for the surgeon to say that he has put the alternatives to the patient, or to the parents if the patient is a child, for they are too emotionally affected and have no knowledge or experience upon which they can base a decision. The surgeon and the surgeon alone must accept this fearful responsibility, and decide what is in the true interest of his patient. The blaze of publicity which has enveloped surgery in the past few years greatly adds to the difficulties facing the surgeon, but is no excuse for attempts to divert the responsibility of decision to others. We are, I believe, tending to lose our compassion and our surgical judgment in the exciting field of technical expertise and scientific or often pseudo-scientific knowledge. We may be tending increasingly to become specialised technical experts attacking scientific problems rather than doctors dealing with sick and injured human beings.

The modern tendency to restrict surgical training to the chosen specialty and to emphasise that the science of surgery is more important than the art, is, I believe at the root of the present universal cry for change in methods of

surgical education and training; and there can be little doubt that change is desirable. This desire for change is not confined to medicine but is manifest perhaps to an even greater extent in all other university faculties and schools and indeed in all the social and economic relationships which characterise our civilisation.

Change, however, should not be instituted except after much care and thought. When changes are proposed hastily I am reminded of the words of Edmund Burke, the great English Parliamentary Orator at the time of the American Revolutionary War - "To innovate is not to reform", and of the philosophy of another wise, erudite and sophisticated man, Lord Melbourne, Prime Minister of England in the early 19th century, that in general, change should be resisted for it often leads to consequences quite the reverse of those intended to the detriment of the very people for whom it was designed.

This is certainly overstating conservatism, but these opinions draw our attention to the great care we should exercise in recommending extensive changes in surgical education and training, for changes will affect the lives of thousands of young men and women and determine the pattern of surgery for decades. Indeed in my opinion change should be approached in the same way as entry to the state of holy matrimony which in the words of the Anglican Book of Common

Prayer - "should not be taken in hand unadvisedly, lightly or wantonly but reverently, discreetly, advisedly, soberly and in the fear of God".

There have already been over the past few years many changes in the pattern of surgical education and in the practice of surgery, but many of us, especially those directly concerned with education are now engaged in the organisation of further changes which unless care and foresight are exercised may well aggravate the difficulties and dangers which I have already described.

Many of the dangers can be avoided provided the problems are recognised and not dismissed as merely the nostalgic vapourings of the older generation.

Scudder recognised the danger of restricting training in the narrow specialty of fracture surgery when he wrote in the preface to the 9th edition of his book on fractures - "Special surgery should not be practised except by those with a sound training in general surgery", by which he meant "surgery in general". In my view he was right not only for fracture surgery but for all branches of surgery. I believe that those of us responsible for training will do a great disservice to the surgery of the future unless we clearly recognise the enormous importance of basing specialist training upon a sound broad knowledge of surgery in general. I believe we will do a great disservice to our patients if we subject them to the care of a narrowly