Annals of the Royal College of Surgeons of England (1981) *vol.* 63

McINDOE MEMORIAL LECTURE, 1980

In quest of perfection
Training in plastic surgery

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Key words: SURGERY, PLASTIC; EDUCATION, MEDICAL

Summary

The history, organisation, and present pattern of training in plastic surgery in the United Kingdom are outlined and suggestions made for its future development.

Introduction

Specialist training should be a continuous learning process from entry at junior level and lasting throughout the active life of a surgeon, the Certificate of the Joint Committee on Higher Surgical Training being a milestone to be passed in preparation to match the accelerating speed of progress, with its ever-rising standards. The quality of training should be judged on a lifetime of contributions — to the community, to the specialty, and, on a broad front, to British surgery and the National Health Service.

The late Sir Archibald McIndoe possessed as a postgraduate student the qualities we look for today in the trainees. He was a man of differences, of many talents, of originality, and with the ability to teach, to organise, and to lead others in his quest for perfection, setting about his task with a clear sense of purpose and determination.

In their wisdom, the Council of the British Association of Plastic Surgeons chose many years ago to figure on their coat of arms the two sons of Aesculapius, Machaon the Surgeon and Podilirius the Physician. It continues to be our duty to combine the skills and knowledge of these two disciplines, to treat the whole patient and not the presenting disease alone. We must be able to work as a team; only in this way complex procedures that not so long ago would have been science fiction have today become routine exercises.

History

The specialty of plastic surgery was pioneered by the late Sir Harold Gillies during the First World War at Sidcup Hospital, where he was joined by Pomfret Kilner, who was later to become the Nuffield Professor of Plastic Surgery at Oxford. For 16 years after the First World War these were the only two surgeons practising wholly in the specialty. Gillies was always the master figure; largely self-taught by his own initiative and inventiveness, he was able to build up an appreciation of and respect for the specialty, laying the foundations for its part in the Second World War and the specialty as we know it today.

In 1931 Archibald McIndoe returned from the Mayo Clinic trained as a general surgeon but set on a future in plastic surgery and joined Gillies at St Bartholomew's Hospital. During the next 7 years four others, Rainsford Mowlem, Richard Battle, John Barron, and Benjamin Rank, joined the team. In 1938, under threat of war, the Ministry of Health and the Armed Services began to prepare for another major conflict. Gillies was given the brief to organise a Plastic Surgery Service, primarily for the treatment of burns, soft-tissue injuries, and fractures of the facial skeleton. The Ministry made beds available and four units were set up at Basingstoke, Stoke Mandeville, East Grinstead, and St Albans with Gillies, Kilner, McIndoe, and Mowlem respectively in charge. Early in the war that followed the units were expanded up to 200 beds and surgeons were seconded for brief training from civilian hospitals and the Armed Forces, coming from this country, the Commonwealth, and from our allies. East Grinstead, under McIndoe, became the main centre for the receipt of casualties from the Battle of Britain and earned a historic place in the growth of the specialty, leading to the opening of four centres in Royal Air Force hospitals. Surgeons trained at other centres supplied the requirements of the Army at home and overseas and for two civilian centres at Bangour and Gloucester. Just before the war was over McIndoe organised a meeting in London of a small group to discuss the formation of a society of plastic surgeons, primarily to determine a

Abridged version of the lecture delivered at the Royal College of Surgeons of England on 4th December 1980

training system suited to the wider needs of peace and the future of plastic surgery generally. This group worked out the terms of reference and constitution leading to the formation in 1947 of the British Association of Plastic Surgeons with 38 founder members and Gillies as its first President.

At its first meeting it was decided that the association should have close links with this College and that a responsible training scheme be worked out. The specialty owes a great debt to three figures, Lord Webb-Johnson and Sir James Paterson Ross, Past Presidents of this College, and Sir Gordon Gordon-Taylor, whose guidance and support led to the College making accommodation available for meetings and for the close links which have always been maintained.

In 1949 an education subcommittee was set up and readily accepted the invitation of the President, Lord Webb-Johnson, to form the Joint Committee on Training in Plastic Surgery with himself as Chairman and supported by the Vice-President, representing this College, together with six members elected by the association. Three terms of reference covered the educational requirements before entry, the most satisfactory methods of developing the existing facilities and the need for new ones, and the correlation of postgraduate training with this College.

It is a tribute to the wisdom and foresight of this committee that almost 20 years later, when the present Joint Committee on Higher Surgical Training was formed, the original criteria required only additions and strengthening to cover the enormous strides that had been made.

In the immediate post-war years the needs of civilian plastic surgery had to be met largely by surgeons rapidly trained during the war in the management of burns and injuries but with less experience in the wide problems of the infant and elderly, of growth and developmental deformities, and of malignant disease. The build-up of disease neglected during the war posed a tremendous challenge. There were massive malignancies that radiotherapy had failed to control, radionecrosis on a scale not seen in this country today, untreated major deformities, often in adults, long-standing unhealed areas from untreated burns, and other ulcerating conditions. Plastic surgery took on an extended pattern for which wartime experience of the management and repair of major injuries proved to be a more appropriate training than might have been expected at one time. The new generation of plastic surgeons were soon making important contributions in all these fields and continue to do so.

Within a few years the specialty had expanded to cover the nation with a network of centres, and some 16 soon fulfilled the necessary requirements for training, each with a senior registrar; now there are 28. The Royal Colleges undertook the necessary background training in basic surgical science and general surgery and only those who fulfilled these requirements were allowed to go forward as senior registrars in these centres. The Colleges retained their authority in the appointment of all consultants, their assessors at appointment committees having the duty to ensure that the working conditions of the post were fair and that the applicants had fulfilled the training requirements.

Until 1970, however, there was no central supervision of specialist training, and standards and opportunities varied widely. In a number of centres there was insufficient exposure to some aspects of plastic surgery and in many of them trainees were overloaded with routine work at the expense of study and research. All the specialties were expanding, new methods of patient management and treatment were being introduced, and it was becoming increasingly apparent that training in this and other specialties was not receiving the attention needed for progress and to meet the demands for higher standards.

Formation of the Joint Committee on Higher Surgical Training

In May 1967 this College, together with the Association of Clinical Professors of Surgery and a number of specialist associations, laid the foundations of the Joint Committee on Higher Surgical Training. The form and role of this committee was based on discussions and agreed by the Ministry of Health departments, other bodies concerned with postgraduate medical education, and the four Royal Colleges of Surgeons who were to share the responsibility for its implementation. Higher Surgical Training was to be a natural sequel to the period and form of training for the respective Fellowship examinations. Comprehensive training programmes were only to be carried out in posts recognised as suitable by the Colleges. The committee did not set out to interfere with the freedom of trainees to choose their own posts, nor to interfere with the right of the appointing committees to select their own trainees. It was to set up specialist advisory committees in each of nine specialties, giving each the duty of defining the training programmes, of approving by inspection the training centres, and of acting generally as agents of the Joint Com-

mittee in supervising the programmes and maintaining a continuous relationship with the centres and trainees. The Joint Committee was to receive regular reports from the Advisory Committees, to offer advice and adjudicate where necessary, and finally to receive the names of those who had fulfilled the requirements of the training programme.

The Specialist Advisory Committee in Plastic Surgery was among the first to make visits of inspection carried out with the full authority of, and responsible to, the Joint Committee. In preparation for the visits centres were asked to reply to a detailed questionnaire on the organisation and staffing of the unit, content of work, its association with other departments, and the presence of supporting services regarded as essential to training. Enquiries included details of research carried out or in progress and lists of work published or in preparation.

Three Specialist Advisory Committee representatives took part in each visit, which was unhurried, taking most of the day. They arranged to meet the oral surgeons and, wherever possible, the Professor of Surgery, Chairman of the Division of Surgery, Postgraduate Dean, and representatives of the Departments of Anaesthesia and Administration. All consultant staff of the department were met and all junior staff interviewed separately. During the visit attention was paid to attendance at outpatient clinics, supervised operating, and a correct balance of training opportunity, with progressive responsibility for senior house officers, registrars, and senior registrars alike. They also enquired into the keeping of records, their organisation, and their use for reviews and research.

It was recognised that each centre should be encouraged to develop its own pattern determined by the environment in which it had grown up and the special interests and skills of the staff. In this way any drift to mediocrity that would be imposed by a rigid standardisation would be avoided.

The Specialist Advisory Committee was able to give praise and constructive criticism where due, offering suggestions for rotations and visits to other centres to benefit training — relatively easy on account of the short distances between centres in the UK. It is not surprising that some deficiencies were revealed and, in a few instances only, approval was deferred until, for example, rotation schemes were put into operation. All units co-operated fully and good relations were always preserved.

Organisation of training centres

It is understandable that each centre should have sound leadership and a clear and progressive policy, a team being built up with each member having a special interest over and above that required for routine practice. Thus high levels of knowledge and skills complementary to each other are brought together to the benefit of teaching and the more difficult cases that arise in various categories. There is today a proliferation of clinical, teaching, and administrative duties which must be shared if a full service is to be offered. In this manner each member of the team can identify his importance in the centre and a harmonious working atmosphere is encouraged for all to enjoy. The reward of efficient administration and full integration of the team is the respect and support it will get from others.

Responsibilities of tutors and trainees

All tutors must set aside time for teaching and supervision of a graduated programme for each trainee and play their part in implementing the full requirements of training. The complementary roles of individual teachers make it most desirable that trainees should, by rotation within the unit, be attached to each in turn. Time and a location must be set aside for weekly seminars, with periodic contributions by each member and by visitors and invited guests who have special knowledge. It is most important that all senior staff attend these meetings as well as those of a regular journal club to give balanced judgments, further their own learning, and generally enliven discussion. The atmosphere of the meetings must be relaxed so that frank and sometimes critical comments can be offered in the interests of high standards and progress.

The trainee too has his responsibility to respond to the opportunities available, cultivating original thought and making his own contributions to add to the store of knowledge. The questions that he asks are particularly important as they open up the experiences of others for all to enjoy and profit by.

He is advised to keep his own records and start a personal slide collection for lecture purposes. It is well worth while learning the essentials of photography to catch the unexpected examples and because those photographs that he takes himself have a greater meaning than those taken by others, perhaps with an added human touch. He should attain a reasonable operating speed, not by working faster but by eliminating all movement that is not purposeful. He should seek experience in lecturing and develop a style of presentation that is both clear and stimulating, blaming himself, not the audience, if any fall asleep. He should build up yardsticks of excel-

lence by his own observations broadened by travel at home and abroad by which he may judge his own work and so endeavour to reach that elusive goal of perfection.

Specialist associations and clubs

The British Association of Plastic Surgeons continues to play a major role in shaping the specialty; through the influence of its members and council it can relate the specialty to other bodies and is well informed of the present situation and future trends. It has two representatives on the Mono-Specialist Committee of the European Economic Community, one of whom is its current President. It is particularly concerned with maintaining clinical and ethical standards. It is a forum for discussion of contentious issues and a source of vigour for the future. The Editorial Committee is responsible for the *British Journal of Plastic Surgery,* with its high international reputation, and the Research Committee organises two meetings a year devoted to research projects. The association holds one Summer Provincial Meeting and one Winter Meeting in London each year, both lasting 2 days, at which the best of British and often overseas plastic surgery is presented. The association, in addition, undertakes one instructional course during the Winter Meeting.

Council has several travel scholarships and grants available annually to assist trainees to visit centres in the UK, Europe, and farther afield. There are funds to support two memorial lectures, the Gillies Lecture held every second year and the Windsor Lecture, on some aspect of hand surgery, held annually. There is an annual prize for the Kay Kilner Essay and also the Mowlem Award for the best published paper. The association, in supporting education and using its influence in the best interests of the present and future of plastic surgery, gains in strength from its close association with this College and with similar organisations with headquarters in this building.

In the early days the British Association of Plastic Surgeons was the only body for the presentation and discussion of clinical material, but since 1960 there has been a growth of newly formed specialist groups holding regular meetings. They have grown up because it was felt that progress in narrow fields could no longer be fully expressed in the time available at the national meetings of the parent organisation. Each of these groups is devoted to a single interest in the fields of burns, hand surgery, cleft lip and palate, malignant disease, and aesthetic, craniofacial, and microvascular surgery. The groups are complementary to each other and together they play a significant part in raising standards and advancing progress. Understandably, not all can attend each meeting and this is best covered by members reporting back at a seminar the highlights of the meeting that they have attended.

In 1974 the senior registrars organised their own Travelling Club with a limited membership. Centres are invited to receive club members for a 2-day meeting at which material in which the centre is most experienced is presented for discussion. It is regarded as an honour to host a meeting. The meetings are well supported but remain small enough to allow easy and frank discussion and operative demonstrations not possible at larger meetings; expenses are kept to a minimum. The club is now playing a valuable part in the training programme.

Two of the larger centres have for some time been organising 5-day residential courses open to UK and overseas surgeons; the one caters for trainees and is comprehensive, the other is for more advanced discussion. There are also some narrow-field courses organised, for example, by the British Society for Surgery of the Hand. Together the support they receive emphasises the vital and progressive nature of the broad specialty that composes plastic surgery. Recently another body has mounted a comprehensive residential course of 2 days held twice a year which is intended to cover the whole field over 3 years. There is need for closer co-ordination of these courses, but certainly the competition for support will ensure high standards.

Research

Research is beneficial as a discipline and exercise in analytical thought, so playing an important role in training. Every question that cannot be fully answered is a possible subject for enquiry. All centres have a duty to initiate projects. A few will seek the opportunity of joining a whole-time team, financed and perhaps organised by a national body, but the great majority will be part-time local enterprises supported by the centre from various research funds, sometimes voluntary patient organisations, and perhaps industry. Worthwhile projects are not necessarily costly; reviews of records and prospective studies should be within the capability of everyone in training, requiring mainly time and a sense of purpose and determination. Where research involves a reduction in the clinical content of training, the Specialist Advisory Committee should be informed and asked for advice on how much of the total time in research can be allowed towards the total training period. The hospital

Ethical Committee should, of course, be approached for approval in any programme which involves patients directly or indirectly.

Travel

Travel opens up the mind to criticism, to new ideas, and to raised standards and generally stimulates interest and enthusiasm for even the most routine of tasks. The trainee has now as never before a range of national and international centres of excellence to choose from according to his needs and interests. Traditionally he went to the USA; to this he can now add increasingly centres in Europe and Australia. Travel is actively supported by Council of the British Association of Plastic Surgeons and most trainees should be able to benefit by one or other of the grants and scholarships during their training. There is even a precedent for trainees to arrange direct exchanges; the administrative difficulties can be overcome. The Specialist Advisory Committee should be informed of any extended travel or exchange arrangements.

The private sector

The original aim of the National Health Service was to make a comprehensive health service available to all. It has continued to meet the demands of all emergencies and of deteriorating conditions generally within a few weeks. The growth of facilities, however, has not kept pace with the rising needs and long waiting lists have grown up for non-deteriorating conditions for which no priority can be given. Many of the latter now seek help in the private sector and up to 20% of all operating in some areas may be carried out in this manner. Whereas the training opportunities for major congenital deformities, trauma, and malignancy are second to none in the NHS, exposure to some non-deteriorating conditions is less than desirable. Unfortunately a few operators, not necessarily fully trained, have fallen to the temptation for profiting by indirect advertising; the great majority, however, conduct their practice to the highest ethical standards. It seems timely that the excellent complementary experience available in the private sector should, under properly controlled conditions, be made use of in the training programme. Those who for political reasons may be disturbed by this suggestion should bear in mind our obligation to train the next generation of consultants in the full spectrum of plastic surgery agreed not just by our own Joint Committee but by training authorities in all countries that take training as seriously as we do. It would be possible to work out a scheme of day-release or secondment for a limited period for trainees to work in private hospitals approved by inspection by a Central Training Committee, with a formula for financial adjustment fair to both the NHS and the trainee.

Strategies of teaching and learning

The content, quality, and quantity of teaching is left very much to the individual tutors and varies widely. The way in which we use lectures, seminars, teaching in the wards, outpatient clinics, and operating theatres, and peer teaching we may call collectively the strategy of teaching and learning. Whereas we should not introduce a rigid, regimented programme, there are a number of suggestions which would lessen the variations in the quality of teaching. For example, there would be an advantage in having a clarification of training objectives and a syllabus similar to that prepared by the Australasian College and the American Boards for their specialist examinations. It would be a valuable guideline for both tutor and trainee in planning a programme and in self-teaching, helping also in the continuous assessment both by the trainee of himself and by the tutors which, in the absence of a specialist Fellowship, is the way we measure success.

Two bodies, the Dundee Department of Medical Education and the Royal College of General Practitioners, have made contributions to the study of strategies of teaching and learning in medical postgraduate education and perhaps we should be making some use of their findings.

There is also reason to believe that the work of the Specialist Advisory Committee would be assisted if one member of each team, not necessarily the senior member, were to be clearly nominated to organise and supervise the training programme in each centre. This member could then attend, if necessary on an annual basis, a discussional conference devoted to objectives, strategies, and assessment of the educational programme. Enhancement in this way would offset the critics of the British system who say that it lacks a sense of direction and leaves too much to chance and unplanned apprenticeship. It is important to recognise that a well-organised learning environment for trainees also provides a medium for continuous education for all concerned and a check on performance, now called audit, in a form far more acceptable than any that might be imposed.

Completion of training

There has been some concern that among the English-speaking countries the UK is now alone in not requiring the trainee to sit a specialist examination at or towards the end of training. A pass in an examination equivalent to those elsewhere would remove some of the doubts expressed by our critics. We must remember that some of the important qualities for success in surgery are not truly examinable. We are aiming for the highest standards throughout an entire lifetime of contributions to patients, the specialty, our colleagues, the hospital, and to British surgery. In addition to the acquisition of factual knowledge we require the development of problem-solving skills, attitudes to patient management, administrative ability, and leadership. Special skills and interests are to be encouraged so that later, as a member of a team, standards can be set in particular fields.

The very keen competition for entry into training makes it unlikely that any without ability and potential will obtain posts in a scheme which has been designed for the UK. This country has the advantages of a co-ordinated hospital structure and short distances between centres, placing the Joint Committee and the Specialist Advisory Committees in a favoured position compared with others where distances are great and there is no nationalised hospital structure.

It is not so important that the route or the milestones differ from one country to another, but it is important that standards are as high as or higher than, elsewhere.

In the absence of a specialist Fellowship examination continuous assessment must be seen to be an effective measure of success. If this is not so, then a specialist Fellowship would be the only alternative.

Staffing structure

The problem of relating the service needs of the Health Service to career opportunities remains unresolved. There is an excess at senior house officer and registrar levels. It has, however, been well balanced for senior registrars, with temporary imbalances due to annual variations in consultant vacancies evening out over a 2–3-year period. There is now an urgent requirement to face up to the reshaping of the total staffing structure and bringing the output of British medical schools into line with needs. Unfortunately, any decisions must be influenced by the funds available to finance the changes.

Finally, there are benefits to training if the Regional Registrar Committees can have closer links with the Specialist Advisory Committees. The former are responsible for all registrar and senior registrar posts at the administrative level and have the authority to make an appointment or terminate it in the unlikely event of the trainee's progress not being satisfactory. The latter have no authority to make or terminate an appointment, only to recommend posts for training under the Joint Committees scheme, but both bodies should maintain a continuous relationship with trainees and they are therefore complementary to each other. It is suggested that a member of the Registrars Committee be invited to be present whenever a Specialist Advisory Committee makes a visit of inspection and to be present at the discussion that follows.

Conclusion

In conclusion, there is every reason to have confidence that the present structure is fully capable of meeting future training objectives, but there is a case for strengthening some aspects of it and some suggestions have been put forward that may help in taking training forward into the next decade.

It is appropriate that this lecture has been given in front of the beautiful stained-glass window donated to this College by Sir Archibald. I am sure that if he were here today he would be well pleased by the numbers who are attaining excellence in the many fields that compose plastic surgery.

I wish to thank my wife and my many friends and colleagues at Frenchay Hospital for their support, the Royal Air Forces Association who founded this lecture, and the Guinea Pig Club who support it.