The Integration of Treatment for Malignant Disease

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The changing methods of treatment for patients with cancer, and the organisations we create to put them into effect, reflect changes in our views about the neoplastic process. When cancer was thought to be a local manifestation of some general evil, the treatment, as for most other conditions, was to blister, bleed and purge, and patients were lucky if they were poor or insignificant enough to keep out of the doctors' hands. The suffering that continued to be inflicted on some cancer patients by treatment should remind us to count the cost demanded in the pursuit of success during the trial of new methods. Some of the complicated treatments advocated for patients with advanced malignant disease, where a limited success is claimed on no scientific basis, are at times enthusiastically reported without any account of the effect of treatment on those in whom it failed.

There are many difficulties in the treatment of patients with malignant disease, but a general air of hopelessness left over from the past makes matters far worse than they need be. This attitude promotes delay, leads to neglect or half-hearted application of effective methods, and encourages the inexperienced to dabble in any tumour problem that comes their way on the false assumption that they are likely to do as well as anyone else. It is important to realise that the first planned treatment given is the one likely to determine the outcome, and if this is inadequate it may seriously prejudice the patient's chance of recovery. Faults, however, go all down the line, for even where primary treatment is of the highest quality, some consultants may—by design or through lack of facilities—abandon their patients when dissemination occurs, offering no further support and leaving them to seek what help they may from anyone prepared to give it. Some change of attitude by quite a large section of the medical profession and a serious attempt to organise our cancer services are overdue.

Surgery and the Cancer Cell

A real advance in cancer treatment followed a movement away from the concept of a general evil with local manifestations towards that of a localised
disease liable to general spread. From the view that cancer invariably starts as a local disease, it followed—in theory at least—that it was always curable if removed completely and in time. This concept not only heralded the great surgical era of cancer treatment but had a profound influence on cancer research as well. The change in therapeutic practice that developed from the idea of a single-cell origin for each tumour was influenced further by the belief that every last cancer cell had to be removed if cure was ever to be effected. So, while radical surgery was becoming the favoured cancer treatment, the aim that dominated cancer research was to discover the nature of the change within the cell that turned it from a normal to a malignant one. The best cancer surgery, based on expert examination of the patient, knowledge of the natural history of tumours, and good clinical judgement, was backed by detailed pathological investigation of the tumour and its spread and by careful follow-up. Such surgery succeeded in effecting many cures where none had been possible before.

**Radiotherapy and Tumour Response**

The discovery of X-rays and radioactivity ushered in the next phase in cancer therapeutics. With inadequate knowledge, poor apparatus, and hopeful hearts much damage was done once more, but for the first time many tumours could be seen to be changed in situ, and considerable additional long-term survival was achieved. Competition naturally developed between those taking up radiotherapy and the established surgical world, for both employed what were essentially local treatments. Adequate case reporting was necessary to establish the effectiveness of radiotherapy for patients with cancer and, backed by the Radium Commission, good records soon became more general, as did cancer registration and controlled clinical trials. However, the spheres of interest of surgery and radiotherapy overlapped, and while they were becoming better defined there was a period when the treatment selected for each patient tended to be the one in which the first specialist he saw was an expert, not necessarily the one most suited to his needs.

**The Grouping of Patients by Tumour Site**

The days of competition between surgeons and radiotherapists in cancer therapy gave way to a new era of co-operation. Some surgeons took radiotherapy into their own practice, using radium in applicators or as an implant material, and subsequently employing large telecurie units for beam therapy. Sir Stanford Cade became the outstanding cancer therapist in this country,
being surgeon, radiotherapist and, latterly, chemotherapist. However, people with his wide experience who could advance the subject on such a broad front were rare. Variety of experience in cancer work is not so easily found as some suppose. The really common tumours are few and rather similar in origin. They are chiefly those arising either in epithelium at sites where there have been repeated demands for repair, or in organs subject to regular hormonally-promoted demands for function. Even in large general hospitals, except where there are clinics with a reputation for dealing with one type or group of tumours, an adequate experience of any but the commonest cancers cannot normally be achieved in a working lifetime. As this position became clearer, joint consultation clinics were established in which surgeons and radiotherapists met to see new patients, to pool experience, to define their spheres of interest, to decide on treatment plans, and together to inspect the results each had achieved. These clinics not unnaturally tended to develop around the existing branches of surgical practice. Indeed, this division of malignant disease on an anatomical or surgical basis had some advantages, but many anomalies soon became evident.

**CLINICAL ONCOLOGY AND PATIENT CARE**

For one man to deal with all the tumours of whatever histology occurring at a particular site or within the scope of one recognised surgical speciality was a practical arrangement when excision was the prime therapeutic consideration; it did not, however, constitute a rational approach in clinical oncology. For example, ovarian tumours became the concern of gynaecologists, testicular tumours of urologists, and the embryonal tumours of children, if not the concern of paediatricians, might be divided between surgeons dealing with the several different organs in which they occurred. Pathologists were left to study the fascinating parallels between these tumours, still too little considered by clinicians. As a further example, we have seen the development of ‘head and neck’ cancer units in which a most valuable experience of epithelial tumours of the larynx or pharynx may be offset by a tendency to separate the lymphomas of this region, or even tumours of the thyroid, from their more rational spheres of study.

In these cancer clinics, despite the illogicalities of their anatomical demarcations, extensive shared experience produced groups of doctors who became experts in either surgery or radiotherapy for the tumours of an anatomical region. There was a resulting decline in competition and an increasing awareness of the results that could be achieved with all available therapeutic measures, whether used alone or in combination, to the greater benefit of cancer patients.
ONCOLOGICAL STUDY GROUPS

While anatomical tumour study groups continue to develop, new, more histogenetically orientated divisions for clinical co-operation are emerging. The linking of oat-cell carcinomas of the bronchus with medullary carcinomas of the thyroid and some of the tumours of thymus and pancreas, or the mapping of the chemoreceptor system by detecting its tumours, have provided good examples of clinical oncology at work. Once more a change in practice is associated with a change in outlook. The idea that each cancer was a similar disease arising at least by a common final pathway of malignant change in one cell from which all the other tumour cells were then derived and against which the body could mount no defence has been giving way over the years. Concepts of multicentric origin due to many initiating factors disrupting normal growth control through multiple effector mechanisms have been gaining ground. It is suggested that these mechanisms can operate at different biological levels of organisation, and it is seen that some of the consequent disruptions may be reversible. Investigation of behaviour patterns of tumours, such as hormone responsiveness, metaplasia, maturation, progression, and spontaneous regression, has contributed much to this change of attitude, as have advances in other spheres, particularly in immunology. General factors in aetiology and in the control of some forms of malignant disease are being admitted once more, but, this time, on a sound clinical and pathological basis.

Therapeutically, this change has been associated with the advance of chemotherapy which, in some malignant conditions, is now achieving regular remissions without serious distress to the patient, and of immunotherapy which is developing into a hopeful phase, even if no more than this at present. The fact that (with the exception of regional perfusion) these are general rather than local treatments demanding differential effects for their success has been another factor encouraging the swing towards a more rational study of tumours by tissue of origin rather than by site of first detection.

THE DEVELOPMENT OF CANCER MEDICINE

Physicians have always had a deep interest in cancer; they have contributed much towards a better understanding of its predisposing factors, its adverse effects, and its behaviour patterns; but, therapeutically, their escape from concentration on the leukaemias and their advance to any real success has been a quite recent development. Their training leads them naturally to a systems concept of disease, with particular concern for such important matters in tumour origin as the tissue responses to isolation, injury, and infection. They are already attuned to the new ideas in oncology. Indeed, one of the most important results of a broader outlook on the origins, behaviour,
and control of tumours has been to bring more physicians into the teams dealing with malignant disease where they now have something effective to do and not only something pertinent to say about a growing sector of the cancer problem.

The newer types of joint cancer clinics have acquired unusual degrees of a particular but not anatomically restricted experience and command unusual concentrations of diagnostic and therapeutic facilities. Already such clinics have improved the outlook for many cancer patients in circumstances where successful treatment was rare in the past. In these consultation clinics, physicians, surgeons, and radiotherapists, backed by pathologists, diagnostic radiologists, workers in nuclear medicine, and many others, co-operate to

Fig. 1. The Hodgkin’s Disease Section of a Lymphoma Study Group, with card index, personal record and response sheets (on the lectern) and life-line summary wall-charts by tumour type, investigation, and treatment given. There are also wall-charts for special investigation and treatment trials.
achieve the best that is possible for each individual patient, whether this involves one method of treatment, a combination of methods, or a treatment sequence spread over a long period of time. The results are kept up to date, reviewed, and regularly discussed by members of the teams, so that all are constantly kept aware of achievement and failure (Figs 1 and 2). While earlier diagnosis and more efficient treatment has improved results with those tumours where success was already being achieved, there has been a significant and most welcome advance with some of the more serious tumour types, even in patients with disseminated disease where the position would have been regarded as hopeless only a few years ago. Hodgkin’s disease, acute lymphatic leukaemia, and tumours of the testicle, for example, provide good evidence of this progress.
Where doubt exists as to the best method of treatment to be adopted, clinical trials are well organised by such tumour study groups; and where the available data are too few for an assessment to be made in a reasonable time in one centre alone, these clinics combine easily on a national or international scale to investigate the matter. As these units accumulate experience they become well equipped to inform and stimulate research groups and, in return, to apply in practice the ideas emanating from them. Once again, clinical medicine can be seen to have a profound influence on the direction of cancer research.

However, difficulties do arise in these joint clinics. When so many experts are involved, there is some danger that an intimate relationship between doctor and patient—of such particular importance in potentially fatal disease—may become neglected. Each patient, with his family, needs to understand his condition, to be given a hopeful outlook, and to be treated with close attention and kindly consideration as an individual within his own environment. His general practitioner has to be consulted and informed and the requisite social services mobilised to deal with any relevant problems. These oncology units require enough doctors combining science with humanity who can give time not only to the advancement of the subject and to their specialised investigation and treatment, but also to their responsibilities for each individual patient’s welfare.

The aims of these oncology study groups are to advance understanding of the development and control of neoplastic disorders, to enlarge experience on a system, tissue, or tumour-type basis, to bring cancer research closer to clinical medicine, to organise the best treatment possible to meet each patient’s continuing need, and, however serious the situation and for however long it may be needed, to offer a hopeful, thoughtful, and kindly approach to the individual problems of every patient referred to them.