consultant is personally responsible for his own patients, we see great value in the results of clinical work being examined on a group basis." Later in the report there are proposals for the introduction into Scotland of the "medical audit" and for alternatives to traditional systems for hospital care.

All these proposals will not easily find general acceptance. But if British medicine is to maintain its reputation internationally then modern methods of organization and assessment must be introduced. Clinicians must ensure that the new methods do not reduce their proper clinical freedom—the traditional duty of each doctor to treat his patients in the way he believes to be best.

**Operation for Parkinsonism**

At the beginning of this century Robert Clarke designed a machine, modifications of which have revolutionized the treatment of Parkinson's disease. Clarke's patent specification clearly defined the principle of stereotaxis: "This invention relates to what may be termed stereotaxic surgical apparatus for use in performing operations within the cranium of living human beings... (it) is designed to enable a so-called probe... to reach, with absolute precision and by the shortest path, any predetermined point within the cranium through a comparatively small opening in the wall of the latter, the primary object being to obviate the necessity of extensively laying open or partially dissecting the head and removing considerable portions of the cranial contents in order to gain access to the exact spot whereat the actual operation is required to be carried out."

Clarke worked in association with Sir Victor Horsley, but they used the machine exclusively for work in animals. It was not until 1950 that E. A. Spiegel and H. T. Wycis reported the use of stereotaxis in man at a meeting of the American Neurological Association. Using a modified Clarke's stereotaxic apparatus, they had succeeded in abolishing choreathetic movements by means of electrocoagulation of the globus pallidus of the side opposite to the involuntary movements. Spiegel and Wycis later found they could improve tremor and rigidity in Parkinson's disease by the same operation; but technical difficulties arose from the great variation in man between the external landmarks of the skull and the targets in the brain. J. Talairach and his colleagues overcame this problem by using ventriculography to relate cerebral structures to the target areas. Experience of many workers has shown that the nucleus ventralis lateralis and the nucleus ventroposterior lateralis of the thalamus are better targets for the treatment of Parkinsonism than the globus pallidus.

Most patients with Parkinson's disease have a good chance of worthwhile relief of symptoms if certain conditions are fulfilled. There must be no mental deterioration and the Parkinsonism must not be so far advanced that the patient is entirely dependent on the help of others. The stereotaxic apparatus should be capable of finding the selected target accurately to within one millimetre. The passage of the electrode or cannula to the target should be made through a "silent" part of the cerebrum. Patients with bilateral manifestations of the disease can be successfully treated provided that the smallest therapeutic lesion necessary to produce the desired effect is made on each side and that an interval of at least six months is allowed between treatment of the first and second sides. Individual variation in the position of the thalamic nucleus should be taken into account.

The most important factor other than technical considerations which affects the result of surgical treatment is the pattern of the disease. Patients with long-standing unilateral symptoms are almost certain to obtain complete relief, whereas patients who are completely incapacitated by the disease have little to gain. Between these two extremes are ambulant patients with bilateral symptoms, who can be offered substantial benefit from bilateral stereotaxic thalamotomy. Severe ataxia, dysarthria, and involuntary salivation are resistant to treatment.

Age alone does not appear to affect the result of operation—L. C. Oliver reported several patients over the age of 70 who had been treated successfully. A long history of slight or moderate disability is not necessarily an adverse factor; indeed it usually indicates slowly progressive disease and tends to favour a good and lasting result. This is true also of postencephalitic Parkinsonism, in which oculogyric crises are abolished or their frequency reduced in about a third of the patients. Finally, though nothing can be done at present to arrest the degenerative process underlying Parkinson's disease, follow-up of patients after operation seems to indicate that the development of further symptoms may be arrested by thalamotomy.

**Complications of Vaccination**

Vaccinia is much the commonest iatrogenic disease. Between 1951 and 1960 there were over 5 million cases in England and Wales, though fortunately the great majority of them were mild and uncomplicated. Most of the patients, moreover, were immunologically better off after than before their illness. The argument is sometimes put forward that a person has little advantage in possessing antibodies against an infection he is unlikely to encounter, and it gains some support from the fact that, though there may be no harm in having a few reserve antibodies, in acquiring them some patients die, some pass through long, worrying illnesses, and some suffer enough discomfort to interfere with work and other pursuits. Vaccinia is a virus disease. If the infection were acquired naturally, virologists would beistolng for elbow room at their benches in their eagerness to isolate the virus and produce a vaccine against the disease. But with vaccinia the tables are turned, and it is the epidemiologists and the administrators who are left to control this troublesome infection.

The complications of vaccinia have been recently reviewed in Great Britain and the U.S.A. While there are several points of difference in the two studies, which might be related to such widely different factors as the strain of vaccine virus and the accuracy of reported figures, there are two important points of agreement. These are, firstly, that children under 1 year old suffer most complications, and, secondly, that many of the complications are preventable. In the British series of over 5 million cases there were four deaths from eczema vaccinatum and seven from vaccinia gangrenosa, all in children under 1 year old; there were 22 deaths from postvaccinial encephalitis, 16 of them in children under 1 year old. In the American series of over 14 million cases the frequency of complications in children under 1 year was two or three times
Reform Needed

The absence of any successful appeal from a finding of the General Medical Council since the creation of the right of appeal to the Judicial Committee of the Privy Council in 1950 at first sight may appear to be a remarkable compliment to the G.M.C. But criticisms made by the Privy Council from time to time show the G.M.C. to be no less fallible or human than other judges. The lack of any successful appeal is really a reflection on the machinery provided for disciplinary proceedings by the Medical Act, 1956, and by statutory instrument. That machinery has been much criticized, and many of the criticisms have been forcefully stated recently by J. L. Taylor.1

The results of the G.M.C.'s lack of jurisdiction to impose any sentence other than erasure from the Medical Register are far-reaching. To reduce the injustice that might result from a choice restricted to erasure or acquittal the device of postponing judgement or finding has been developed. This produces something like a sentence of being put on probation, but, as Taylor points out, the practitioner not only has to be of good behaviour during the period of probation but has to prove his good behaviour by providing references. It would be in the public interest, and merciful to the practitioner, if the G.M.C. had the power in appropriate cases to impose a fine or a period of suspension from practice. When the draughtsman of the Medical Act 1956 formulated the right of appeal in section 36 he accorded this right of appeal only to the practitioner whose name is ordered to be erased from the Register. In all other cases the practitioner either stands acquitted or he is told that no final judgement has been passed upon him. Though it is logically undesirable to grant a right of appeal from a decision which in form has not been made, postponement of judgement is in truth a finding of guilt, and justice demands that there should be an immediate right of appeal. The whole device of postponing judgement is a denial of justice which ought not to be tolerated. It is a basic requirement of justice that courts and tribunals should not only hear but also determine the issues before them as speedily as may be, and publish their determination forthwith.

In addition to a greater variety of punishments Taylor would like to see some machinery for imposing suspension without stigma when a practitioner's health (usually mental health) makes this desirable. Taylor also points out that in some circumstances a practitioner faces charges without being told the details of what is alleged against him. There is a good case for a requirement that a "circumstantial letter" be sent to every practitioner who is charged before the G.M.C.

It is not only in its machinery that the G.M.C. is hampered. The whole concept of "infamous conduct in any professional respect" requires deep examination. It is questionable whether it is desirable to try to separate the professional life of a professional man from his private conduct. A charge of "conduct unbecitting a medical practitioner" would enable the G.M.C. to make a more flexible approach to complaints against practitioners, though it may be that such flexibility would prove too severe upon practitioners. The esteem in which members of the G.M.C. are held contrasts markedly with criticisms of the procedure and rules of the disciplinary process of the profession. The whole subject is appropriate for examination by the Law Commissioners.


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higher than in any other age group, though it must be noted that no child under 1 died. There were 12 cases of postvaccinal encephalitis, but only one in the first year of life, and all five children who died were aged between 1 and 14 years. There were two other deaths from eczema vaccinatum, both in children in the 1–4-years-old age group. The odd differences between the rates in the two series, especially for postvaccinal encephalitis, cannot be explained, but such anomalies have been observed before. The figures collected by the Vaccination Committee of 1926 showed a preponderance of cases of postvaccinal encephalitis and of deaths in children of school age, whereas the figures reported to the Ministry of Health during 1951 to 1960 showed that both cases and deaths were much more frequent in the first year of life. Reporting of cases was probably incomplete in both periods and comparisons are therefore difficult, but the policy of recommending vaccination in the second rather than the first year of life is based on the more recent figures.

As to the prevention of complications, certain points are clear. Vaccinia is an infectious condition and infection can be readily transferred from the vaccination site to other parts of the body. This is the commonest cause of most cases diagnosed as generalized vaccinia. It is rarely a serious complication, but it should be preventable by careful hygiene. Transfer to another person is less common but may be more dangerous: 54 cases, including the two fatal cases, of eczema vaccinatum in the American series were caused in this way. A child with eczema must be protected rigorously against accidental vaccination from contact with a recently vaccinated person. Vaccination of a child with florid eczema is a hazardous operation and should be undertaken only on dangerous exposure to smallpox and under cover of hyperimmune vaccinal gammaglobulin and possibly N-methylisatin beta-thiosemicarbazone. When the eczematous state is past or latent the risk is less, and such patients have often been vaccinated without trouble. This is true also of patients with asthma and other allergic disorders, but it is safer not to vaccinate such patients unless it is unavoidable necessary. Except during outbreaks, immigration authorities will usually accept a medical certificate stating the facts. Any immunological defect such as hypogammaglobulinemia is another contraindication to vaccination, and a history of recurring infections during early infancy should lead the physician to obtain an analysis of blood globulins before he undertakes vaccination. Corticosteroids are known to affect immune responses, so that vaccination should be avoided for patients on long-term treatment with these substances, or, if it must be carried out, hyperimmune gammaglobulin should be given beforehand. It is undesirable to vaccinate a patient with a skin infection. There is a very small risk of causing abortion by vaccinating women in the early months of pregnancy and of producing vaccinia in the foetus by doing it in the late months. ** Whatever the national policy about routine vaccination of a country, many of the complications can be avoided by excluding from the programme those patients in whom there is a contraindication to the treatment.

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3 Report of Vaccination Committee, Cmnd. No. 5148, 1928. H.M.S.O.


