Patients often complain of blurred vision or sudden loss of sight. Distention of peripheral veins leads to dependent plethora, and there is a purplish palmar erythema. Symptoms from the central nervous system include headache, nausea, dizziness, and, in extreme cases, peripheral neuropathies and convulsions. The increased concentration of protein leads to compensatory expansion of the plasma volume which contributes to vascular oozing and can also lead to severe dyspnoea or congestive cardiac failure. Platelets are normal, but the increased viscosity interferes with clotting mechanisms, and this also causes increased bleeding.

The threshold of viscosity at which symptoms develop varies considerably from one patient to another and may be much lower in cases with other associated disease. For instance, visual symptoms occurred sooner than usual in diabetic patients, who are predisposed to retinopathy. The diagnosis is easily made once the syndrome is suspected. These patients have extremely high sedimentation rates by the Westergren method and in most cases raised serum immunoglobulins.

The nature of the protein complexes capable of producing hyperviscosity has been a subject of immunological study in the past few years. In some cases of multiple myeloma and Waldenström’s macroglobulinaemia a simple excess of the respective paraproteins to 10 or more times the normal value can give rise to the syndrome. But the rise in serum viscosity is not always proportional to the amount of globulin. It depends on the size and shape of the particular immunoglobulin(s) as well as on their chemical structure and ability to form large aggregates.

Waldenström’s disease is perhaps the least uncommon cause of hyperviscosity. IgM, having a molecular weight of nearly one million and a disc-like shape, is particularly apt to produce high serum viscosity, and increased synthesis of it in the malignant lymphoid tissue soon surpasses the safety margin. The classical presenting symptoms of Waldenström’s macroglobulinaemia are in fact tiredness and nosebleeds. One advantage to the patient is that IgM is mostly intravascular, so that the hyperviscosity responds well to plasmapheresis in this disease.

In multiple myeloma there are interesting differences between the different classes and subclasses of immunoglobulin. About 4% of patients with myeloma develop symptoms of hyperviscosity. Within the IgG myelomas it has been found that in the IgG subclasses the viscosity increases slowly with the level of paraprotein and becomes dangerous only with extremely high values, whereas IgG myelomas apparently account for half the cases of hyperviscosity, though only 8%; are of this subclass. IgG forms polymers more readily at high than at low concentration, so that a mere threefold increase in this protein may cause the blood viscosity to go up steeply. In this context it is interesting to note that cryoglobulins also contain IgG much more often than could be expected by chance. IgA myelomas rarely give rise to hyperviscosity.

Of greater interest still are the cases of hyperviscosity seen in “immune complex” diseases, many of which are also associated with cryoglobulinaemia. Large protein aggregates form in the circulation through the combination of rheumatoid factors with so-called “intermediate complexes.” This name derives from the ultracentrifuge sedimentation constants of these complexes, which are from 9 to 16S and are thus intermediate between the 7S immunoglobulins and the 19S IgM. Intermediate complexes can be formed in several different ways. Sometimes they contain only IgG, and by modern methods11 it has been possible to show that part of this is an IgG antiglobulin reacting in the complex with normal IgG.10 Some intermediate complexes contain low-molecular-weight IgM subunits12; others contain components of complement or antinuclear antibodies.13 The patients frequently have longstanding rheumatoid arthritis with subcutaneous nodules and high-titre rheumatoid factors but not necessarily a high level of IgM in the serum.10

In addition to their role in the causation of hyperviscosity syndrome intermediate complexes are now considered to have other ill effects. They are generally soluble and therefore remain in the circulation. Some become deposited in renal glomeruli, and others have a special affinity for vascular endothelium and cause vasculitis.13

Resistant Malaria

For most people in the tropics prophylaxis and suppression of malaria presents few problems. The drugs and regimens used for the past 20 years are still as effective as ever for all but a minority. Many problems arise from the very human desire of the great majority to be one of that minority. Almost everyone prefers to think that he is unique, and that the drugs which work with the populace do not work with him. It is also great fun to tell the doctor that his remedies do not work. Thus there always has been talk of cases of malaria breaking through recommended prophylaxis; but on investigation these reports usually turn out to be explained by faulty diagnosis of malaria parasites—often platelets or artefacts in a film from a patient with fever from some non-malarial cause; a fever may even be diagnosed as malaria without a blood film examination. Nevertheless an important resistance problem does exist, particularly in relation to chloroquine in parts of South East Asia and Brazil, and in relation to other antimalarial suppressives in Africa, and it is important that research be maintained into more effective means of combating this and preventing emergence of other resistant strains.

The emergence of resistance has led to emphasis on the use of combinations rather than single drugs for malaria suppression and prophylaxis. An important combination has recently been reported by A. B. E. Laing.1 He had earlier shown that the effect of pyrimethamine and sulphadoxine (also known as sulphormethoxine, Fansal) was potentiated by using them in combination, when very small doses were able to clear Plasmodium falciparum from the blood of hospital patients in a hyperendemic area. The next step was to see whether very small doses of these drugs would also act as effective suppressants, and a trial was conducted with 120 children. It was found that 2 mg pyrimethamine with
40 mg sulphadoxine administered fortnightly was completely successful in suppressing seasonal hyperendemic malaria in the children over a period of 6 months, but that pyrimethamine alone in the standard dosage of 25 mg weekly failed to do so in some cases. Moreover 11 out of 12 controls receiving no suppressives developed malaria during the period of observation. No untoward side effects were encountered. A similar trial using sulphadoxine or dapsone with pyrimethamine in weekly dosage among school children in Nigeria has also been successful.\(^1\)

Standard antimalarial regimens for prophylaxis and suppression in adults include proguanil 100 mg daily, or chloroquine 300 mg (base), pyrimethamine 25 mg, amodiaquine 400 mg (base), or chloroproguanil 20 mg weekly. For most purposes these will probably long continue to be used, but the regimens advocated by Laing and A. O. Lucas will almost certainly find increasing application.


**Handicapped Children**

It is an unfortunate fact that handicaps in children are often multiple. A single noxious factor in pregnancy, such as the rubella virus, may simultaneously damage several organs developing at the time—the eye, the ear, the heart, and the brain. A danger of overspecialization in paediatrics therefore is that the specialist may so confine his attention to one part of the anatomy—for example, the heart, if he is a cardiologist—that he fails to observe abnormalities elsewhere, such as deafness, visual defects, or mental subnormality.

The multiplicity of handicaps suffered by many children is more generally recognized than it used to be, and the importance of assessment centres in which the whole child can be assessed with the help of all the various specialists, including the teacher, is becoming clear. But there will always be a need for someone to assess the child as a whole, co-ordinating the findings of the specialists, discussing the problems with the teachers, and guiding the parents about their management of the child in the family setting. Such a person may be a physician for handicapped children or a general paediatrician with a special interest in certain handicaps, while the family doctor too must have a role in this.

The specialists with whom the generalist will discuss the child and whose findings he will co-ordinate may be numerous. In a well-staffed centre for the assessment of cerebral palsy the affected children may be examined by an orthopaedic surgeon, audiologist, ophthalmologist, dentist, psychiatrist, psychologist, physiotherapist, speech therapist, occupational therapist, medical social worker, and in addition a teacher of headmaster status. The findings are discussed for each patient at a case conference, to which all members of the assessing team contribute, and are co-ordinated by the full-time physician for handicapped children or paediatrician.

A new publication by the Department of Education and Science\(^1\) highlights some of the problems and needs of such units. The report is based on visits in 1967 and 1968 to 33 assessment units administered by local education authorities in England and Wales. The visits were made by H.M. inspectors and a medical officer of the Department. The variety of disabilities encountered was wide, and included Perthes's disease, coliculid disease, congenital dislocation of the hip, behaviour problems, psychoses, mental subnormality, spina bifida, dyslexia, aphasia, deafness, and amyotonia in children aged 2 to the teens. It was felt that the teachers, though doing an excellent job, were receiving too little specialist help and advice; that assessment must be a continuous process and not just a single event; and that too often it was confined to deciding whether a child was suitable for a particular sort of special school instead of determining his individual needs. It was suggested that special education may be needed for as many as 1%, of the children aged between 2 and 7. This is a good report, which should be read by all who are interested in the problems of handicapped children.


**"You" under Way**

This week the first issue of a new monthly magazine directed at the lay public was launched under the auspices of the B.M.A. Entitled *You*, it is aimed at a mass circulation and is intended to bring health education into the home.

That many people need a stimulus to lead a healthy life and some instruction in how to do it is familiar enough to doctors, who every day see in their consulting-rooms the consequences of overeating and overdrinking, too little exercise and too little care. And the success of the Family Doctor booklets over the years in providing advice in simple terms has encouraged the B.M.A. to venture again on the publication of a magazine. Its first attempt in this field, *Family Doctor*, was discontinued on the death of Dr. Harvey Flack, who edited it for the 15 years of its existence. The experience of publishing that journal pointed up two problems that any professional association has to study in its endeavours to reach a large lay audience. The first is how to reconcile the general public's acceptability of such a magazine with a scrupulously professional outlook. The second is how to finance it satisfactorily.

For the publication of *You* the B.M.A. has entered into an agreement with TPL Magazines Ltd., a subsidiary company of Thomson Publications Ltd. A joint management committee has been set up with equal numbers of nominees from the B.M.A. and Thomson Publications. This committee will determine the general policy of the magazine, its editorial and advertising contents, and the methods used in promoting it. The present editor of the Family Doctor publications, Dr. Trevor Weston, is editor of *You*, and the agreement provides that while subsequent editors will be appointed by the management committee the appointment will always be subject to the B.M.A.'s approval. As the B.M.A. is to be so closely associated with the production of the magazine and its name will appear on it, these safeguards are clearly of great importance.

With its technical and commercial experience TPL Magazines Ltd. offers the facilities needed if a magazine of this kind is to reach a large audience. At the same time it has come to a financial agreement with the B.M.A. that will allow the magazine to be published without fear of loss by the Association. TPL Magazines, as well as bearing the costs of publication, will pay the B.M.A. an annual licence fee and a royalty on the net profits. But however large or small the financial attraction this venture may offer the B.M.A., the real need for public education in health matters must remain the Association's justification for the launching of *You*. 