Present Organization

The Trust still owns the Roehampton estate and has an income from factory rentals, invested funds, and donations. The hospital, now providing 400 beds, is leased at a peppercorn rent to the Minister of Health until 2002, and the Minister has appointed the Board of Governors of Westminster Hospital to manage it. The Minister, however, does administer the limb-fitting centre, which is leased to him at a beneficial rent, and the satellite centres. In 1961 the Governors of the Trust changed their title to Trustees and are not concerned with National Health Service patients in the hospital. No wards or beds are set aside for disabled ex-Service men, but the Minister has agreed with the Trust that they have preferential admission, excepting those with pulmonary tuberculosis or impaired mental health, who are treated elsewhere. Westminster Hospital is responsible for the hospital welfare of the National Health Service patients and the majority of ex-Service men and appoints medical and lay staff to the hospital but not to the limb-fitting centre. It is noticeable that there is grouping in the hospital for the Service men requiring plastic surgery, operations in connexion with loss of limb, and investigation of tropical disease.

The majority of the amputations in the United Kingdom are carried out by general surgeons in the hospitals where they normally work. Orthopaedic surgeons do many of the emergency amputations required owing to accident. A small number of patients are sent to Roehampton for decision and amputation, if necessary, and the majority of secondary operations, when required before limb-fitting, are performed there.

The limb-fitting centre has become more of a national centre than ever. Of the 3,500 new amputees who attend each year 70% have lost a limb from disease of blood-vessels and 25% from accidents.

The Trust, under the chairmanship of Sir Arton Wilson, shows appreciation of the changes necessary for the adequate provision of artificial limbs for both civilian and Service casualties. Not only has it spent £100,000 on the limb-fitting centre and the factories but it is contributing £63,000 to a

research and works building, a project in which the Ministry of Health and the Trust are co-operating. This is required for the constant study of design and materials used in artificial limbs, including such advances as powered limbs. The research committee, under the chairmanship of Mr. H. Jackson Burrows, considers any project submitted that may benefit the amputee. The research workers are assisted by the committee in the planning and financial aspects of their work and have the advantage of criticism by specialist members.

It is the high standard of the routine work that has given Roehampton its good name. Without doubt, credit for the original medical arrangements should go to Muirhead Little (1854-1935). He was an experienced orthopaedic surgeon, who set a pattern when Roehampton was first opened both for the technique of amputation and for the standard prostheses. He was helpful to the amputee of the first world war and his influence was appreciated for many years. Following his example, the staff educate the amputee in the use and care of the artificial limb; stress is laid on the necessity of wearing a stump sock and on its method of application. There is a walking school in which the amputee learns to walk, sit, and go up and down steps. The original pattern of education has been improved year by year. Active rehabilitation has replaced a somewhat leisurely and inactive convalescence, which followed all surgical procedures in the Edwardian and Georgian eras. Physical and mental confidence are restored, and the man or woman is prepared for return to profitable employment. Even so, it is surprising how a double amputee will often teach himself to be mobile, and many enjoy physical recreation, such as swimming, golf, and tennis.

The national limb-fitting service has acquired an international reputation and is visited by doctors from many parts of the world. Technicians, particularly from Europe, receive training in the factories, which remain private undertakings in contract with the Ministry of Health.

The author wishes to express his appreciation for some of the historical information to the Trustees and the Clerk to the Trustees.

Indications for Laboratory Tests for Toxoplasmosis

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Our experience in carrying out the routine testing of sera for toxoplasma antibody has been that there is often uncertainty about when to ask for special tests for the diagnosis of toxoplasmosis. Sera are not uncommonly sent in when there seems to be no real need for testing; on the other hand, it is probable that more testing of sera in certain types of case is indicated. It is proposed, therefore, to provide here a tentative guide on the indications for laboratory tests for toxoplasmosis.

Tests for Toxoplasma Antibody

The cytoplasm-modifying test of Sabin-Feldman (dye-test) is the one routinely used in this country. It is a sensitive test which shows the presence of antibody in about 30-40% of the normal adult population. The most convincing method

of diagnosing active toxoplasmosis is by the demonstration of at least a fourfold rise in titre. However, in practice, by the time the first serum is obtained the titre has usually already reached a high level, and we tend therefore to attach a probable diagnostic significance to titres of 1/512 or over. Nevertheless, on rare occasions titres in excess of this figure may be found in healthy persons with no history of recent illness.

Indications for Serological Testing

The following are the main conditions in which toxoplasmosis may be suspected, and in which antibody tests preferably of acute and convalescent sera may be necessary.

Lymphadenopathies

(a) Cases of apparent glandular fever, where the Paul-Bunnell test and bacteriological tests are negative.

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(b) Cases of lymphadenopathy of uncertain aetiology, more particularly where Hodgkin's disease or other malignant disease is suspected. It is necessary to emphasize, however, that cases of active toxoplasmosis coincident with malignant disease have been reported, so that it is essential in some cases to consider biopsy findings alongside the serological result.

Eye Conditions

Typically, toxoplasma infection produces focal choroidoretinitis, which, if severe, may be accompanied by signs of anterior uveitis. An iridocyclitis without retinal lesions is most unlikely to be due to toxoplasmosis. It is possible that toxoplasma may be responsible for optic neuritis, and optic atrophy may follow the congenital disease. Nystagmus or squint may result from congenital lesions involving the macula.

Most cases of active toxoplasmic choroidoretinitis seen in this country are recurrences of congenital infection, as evidenced by the scars of previous lesions. In these cases antibodies are usually present in low titres, and, as about a third of the adult population possess antibodies, a positive result is by no means conclusive evidence of ocular toxoplasmosis. A fourfold rise in dye-test titre during the evolution of the condition is additional evidence of a toxoplasmic infection. A negative result is strong—but not conclusive—evidence against the eye condition being due to toxoplasma. Where the only lesions are healed scars it is questionable whether tests are worth while, but they have the advantage of providing a base for comparison with the titre obtained if there is a flare-up later.

Congenital Infections

In the newborn the presence of hydrocephalus, meningitic symptoms, or generalized illness, especially with hepatosplenomegaly, jaundice, or purpura, should suggest the possibility of toxoplasmosis. As a choroidoretinitis is the commonest but often delayed feature in congenital toxoplasmosis, the retina should be examined in suspected cases. A diagnosis of congenital infection is supported by the demonstration of a high level of antibody in the mother's serum. As toxoplasma antibody is passively transferred to the infant, the presence of antibody in low titre in the infant is normally of no significance.

In older children congenital toxoplasmosis should be suspected in cases of choroidoretinitis or similar eye conditions. Mental defect is rarely due to toxoplasmosis but may be suspected if the defect is accompanied by eye changes or by evidence of other lesions of the central nervous system, such as calcification in x-ray films, fits, or palsies.

Manifestation of active toxoplasma infection other than those mentioned above are very rare. It is doubtful whether toxoplasmosis needs to be considered in a case of pyrexia of unknown origin, unless there is some evidence of localization such as glandular enlargement, meningeal symptoms, or splenomegaly. It is possible that occasional cases of encephalitis, myocarditis, or atypical chest infections may be due to toxoplasma infection, and it may therefore be worth while carrying out antibody tests when all other tests are negative. There is no indication for testing in cases of gastro-

intestinal or genito-urinary infection, but abdominal symptoms are occasionally due to toxoplasmosis of abdominal lymph glands.

Isolation of Toxoplasma

The only way to confirm the diagnosis is to isolate toxoplasma and demonstrate rising antibody titres. The presence of toxoplasma in tissues or body fluids can be shown by inoculation of mice. A positive result supports a diagnosis, but the certainty of the diagnosis is somewhat diminished by the knowledge that toxoplasma is sometimes isolated from the tissues of healthy persons.

It is doubtful if it is worth while inoculating mice in the presence of a negative or low dye-test result. The types of material that may be examined are glandular biopsies, cerebrospinal fluids showing other pathological changes, blood, sputum, and tissues—such as enucleated eyes—obtained at operation or at necropsy. Experience shows that it is necessary to emphasize that tissues should not be put in fixative, that they should as far as possible be refrigerated (but not frozen), and to prevent the growth of contaminants should preferably be kept in a solution of penicillin and streptomycin—100 units/ml. of each in normal saline.

Research

There is a great need for further research on toxoplasmosis, especially its epidemiology. For this to be done it is essential for the clinician or field worker to co-operate with the laboratory on agreed problems. For example, recent work in Germany suggests that a significant proportion of cases of recurrent abortion and stillbirths may be due to toxoplasma, but much more work is required before this can be accepted. Both the toxoplasma laboratories would be willing to consider a research project on this subject, if there were clinicians interested. Applications for help in other projects would also be very sympathetically received.

Summary

It is suggested that tests for toxoplasmosis should be performed in cases of lymphadenopathy of uncertain aetiology, choroidoretinitis, and neonatal illness with hydrocephalus, meningeal symptoms, or generalized illness with hepatosplenomegaly.

Toxoplasmosis is rarely the cause of encephalitis, myocarditis, or pneumonia; but in atypical cases, where the aetiology remains in doubt, tests may be worth while.

A dye-test titre of 1/512 or higher is presumptive evidence of active infection, but high titres may occur in normal persons. To prove an infection a significant rise in titre must be shown, preferably accompanied by isolation of the organism.

We wish to thank Professors C. P. Beattie and E. S. Perkins for allowing us the benefit of their great experience while preparing this memorandum.