THE EMPLOYMENT OF PATHOLOGISTS IN CORONERS' COURTS*

BY

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Although many fundamental facts of pathology have been established from very early times, the modern development of that branch of medicine and the immense amount of detailed pathological knowledge available at the present time dates from about the middle of the last century, when enthusiastic workers devoted their lives to the investigation of pathological problems; from these beginnings the body of pathologists arose, and the investigations, which at first were chiefly anatomical and histological, have since expanded to include the various branches of pathological and bacteriological work. It was only very slowly that pathological knowledge was applied to medico-legal problems, and in this country the employment of pathologists by coroners and police has developed within living memory, and is still very limited when the country generally is considered, though they are more frequently employed in London and the larger urban districts. Yet it is of even greater importance that pathologists should be employed in medico-legal than in hospital work, for whereas unskilled hospital work results in loss of scientific knowledge, similar work in medico-legal cases may entail very serious legal consequences.

Medico-legal cases fall mainly into two groups—namely, that in which death is known or suspected to be unnatural, and that in which the death is reported to the coroner because the cause is unknown, although an unnatural cause is not suspected. It is in the second group, in my experience, that rare or supposedly rare lesions are so frequently responsible for death. Two consecutive cases which I had recently, illustrate some of the difficulties which may be encountered in this group.

The first of these was a woman, married, and 34 years of age, whose illness dated from about three months before death. She first became depressed, gradually lost weight, and was treated for anaemia. During this time she had an attack of vomiting and diarrhoea, which was thought to be due to food poisoning, sardines being blamed. For six months she had not menstruated, and she persisted in believing that she was pregnant. On the day before her death she again became acutely ill, with abdominal pain, nausea, vomiting, and diarrhoea; she collapsed and died suddenly during an attack of vomiting.

The death was obscure, one suggestion being that she had become infected during an attempt to procure abortion. The necropsy showed that she was not pregnant and had not aborted. The skin was generally rather dark in colour, especially the face, and I remarked on the possibility of Addison's disease of the suprarenals being responsible for her death; this proved to be the case, the disease taking the rare form of simple atrophy of the glands, which were represented by two very small ill-defined reddish masses.

In this case an accurate knowledge of the normal position of the suprarenals was necessary to enable the remains of the glands to be found, removed, and subjected to microscopical examination. Had the disease not been found the case might have been regarded as one of enteritis from changes found in the lower part of the small intestine.

The second was a boy, 12 years of age, who was quite well until about fifteen hours before death, when he complained of headache; he steadily became worse, and attacks

of vomiting supervened. He then collapsed and was sent to bed, where he was found dead three hours later.

At the necropsy very slight changes were found. There was some dilatation of the heart cavities, and there were a number of petechiae on its surface; these were so minute as to require a hand lens for identification. There was also slight cloudy swelling of the liver. Within the skull the cerebral convolutions were obviously flattened, but no cause of the increased intracranial pressure was found. I then opened the spinal canal, and found that the cord and its membranes were normal; but the cerebro-spinal fluid accumulated at the bottom of the canal appeared to be slightly turbid; I therefore collected some of the fluid in a pipette. Subsequent microscopical examination showed marked fatty degeneration of the heart muscle. In the cerebro-spinal fluid I found large numbers of polynuclear cells, and a very few intracellular diplococci having the characters of Weichselbaum's organism of acute cerebro-spinal meningitis.

The case thus proved to be one of fulminating cerebro-spinal fever, with less change in the central nervous system than I have seen in any other case. Without the subsequent laboratory investigation it would have been impossible to give the cause of death, and a well-equipped laboratory is, in my opinion, essential to the investigator of medico-legal cases, in addition to a considerable experience of post-mortem work and morbid histology.

It is not reasonable to expect a general practitioner to deal satisfactorily with medico-legal cases, though it is true that certain pathological conditions, such as cerebral haemorrhage or ruptured gastric ulcer, can be recognized. But the disease which has been diagnosed with confidence during life is not always found at the necropsy.

Only yesterday I made a post-mortem examination on a woman who was said to have died from a cerebral haemorrhage and to have had another stroke six months previously. The case was reported only on account of a recent fall, which it was thought might have influenced her death. No cerebral haemorrhage was found, and no indication of a previous haemorrhage; death was due to chronic alcoholic poisoning.

The following pathological conditions are a few of the very many which may prove to be stumbling-blocks to the general practitioner. Encephalitis lethargica, the symptoms and course of which show great differences, is sometimes reported owing to its obscure nature. This disease can only be diagnosed by extensive microscopical examination of the brain. Subdural meningeal haemorrhage is very commonly attributed to injury, but in my experience is more often due to rupture of a cerebral aneurysm. The aneurysm may be literally no larger than a pin's head, and it can be very difficult to find, embedded in the meningeal haemorrhage, requiring a thorough cleaning of the blood vessels over the base of the brain. Cerebral haemorrhage into a tumour is not a very rare cause of death. The tumour tissue at the margin of the haemorrhage may require microscopical aid to diagnosis, but the condition may be suspected if the arteries are free from disease or the haemorrhage occurs in a very unusual part of the brain, as in the subcortical white matter. Internal hydrocephalus sometimes causes extremely puzzling symptoms, and cases are not very rare in coroners' work. The cerebro-spinal fluid sometimes soaks completely into the brain after death, and the dilated ventricles are displayed only by appropriate methods of incising the brain. Diseases in the spinal canal form a group in which cases are met with occasionally, and the spine should be opened in any case in which the cause of death is obscure after the examination of the body is otherwise complete.

In the heart, disease of the coronary arteries associated with a small lumen or with thrombosis is by far the commonest cause of sudden and unexpected death. The

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disease may be very obvious, but in some cases a very thorough search of the arteries and their principal branches must be made before the cause of death can be ascertained. Syphilitic aortitis with reduction in size of the orifices of the coronary arteries is another fairly common cause of sudden death. Disease of the heart muscle is an important cause of death, and one which it is often impossible to diagnose without microscopical examination. The muscle may be soft merely from post-mortem changes, and pale owing to the small amount of blood in its wall at the moment of death. On the other hand, a muscle of good colour and firm consistence may conceal advanced fatty degeneration. For this reason I always examine the heart muscle microscopically after treatment for a time with osmic acid.

It is often very difficult for the pathologist to help the general practitioner if he is required to make a second post-mortem examination; the more thorough the first examination the greater the difficulty, and I have had cases in which the cause of death remained conjectural. Nor is it satisfactory to ask the pathologist to make histological examination of material removed by another, the material sent not always being representative; in such circumstances the report of the pathologist may be misleading. The general practitioner is in a dilemma when, having made a post-mortem examination in an apparently straightforward case, he finds no satisfactory explanation of death. Sometimes he states frankly that he has found no cause. Sometimes, having missed the actual cause of death, he fastens upon a common chronic process such as chronic bronchitis, and the death is ascribed to that cause; or occasionally he invents a cause of death, as in the case of an infant in whose body no serious disease was apparent. A thymus gland was present, and the operator cut into the gland and squeezed, whereupon a milky fluid escaped, and a diagnosis was made of "thymusitis," and was accepted by the coroner.

These remarks are intended only to point out some of the difficulties with which the investigator has to contend in medico-legal examination of the dead body, and to support the thesis that the proper person to make all such investigations is an experienced pathologist who can also carry out any laboratory investigations which may be necessary.

TUBERCULOSIS OF BOVINE ORIGIN

DEPUTATION TO MINISTERS

Sir Hilton Young, the Minister of Health, Earl De La Warr, Parliamentary Secretary of the Ministry of Agriculture and Fisheries, and Mr. A. N. Skelton, Parliamentary Under-Secretary of State for Scotland, received a deputation on November 24th from the People's League of Health. The deputation was introduced by Sir Thomas Horder, and the other speakers were Lord Moynihan, Dr. Savage, Sir Archibald Weigall, Professor Hobday, and Dr. Norman Wright.

Its object was to submit to the Government a resolution passed at a meeting called by the People's League of Health, held at the Mansion House last summer. The resolution was in the following terms:

"That this meeting representative of all interests involved, held at the Mansion House, London, on July 11th, 1932, do approve of the Report of the People's League of Health on Tuberculosis of Bovine Origin in Great Britain, and urge upon His Majesty's Government the imperative need of giving early practical effect to the proposals it contains."

Sir Thomas Horder said that the report, prepared by the People's League of Health and now submitted to the Government, contained recommendations designed to ensure the safety of the milk supply. The League hoped that if its recommendations were adopted and the

public could be assured of the safety of milk, there would be an increase in the consumption of milk in this country, which would be in the interests of the consumer and the producer alike. Lord Moynihan said that it was the considered opinion of the medical profession that steps ought to be taken to ensure a pure milk supply or such treatment of milk as would render it safe for consumption. Impure milk was responsible for the spread of many diseases, and, in particular, surgical tuberculosis. The ideal method of preventing milk-borne disease would be to ensure the purity of raw milk, but, failing this, pasteurization should be adopted. Objections had been brought against pasteurization, but he did not believe that they had weight. Any diminution in the nutritive value of milk due to pasteurization could easily be remedied by the supply of other articles of diet. It was, however, essential that the process of pasteurization should be carefully controlled. Dr. Savage said that at present no urban area had power to protect its milk supply. The deputation desired to urge upon the Government three main lines of action: (1) that active steps should be taken to reduce bovine tuberculosis; (2) that there should be active encouragement of tuberculin-tested herds; and, (3) that milk should be pasteurized. The deputation was not, however, asking for universal pasteurization at present, but only that municipalities should be enabled to apply to the Minister of Health for power to require that all milk sold in their districts should be derived from tuberculin-tested herds or be pasteurized. Sir Archibald Weigall, speaking on behalf of the Royal Agricultural Society of England, endorsed what had been said. The ultimate ideal should be tubercle-free national live stock, but the report was agreed upon as the best half-way house. The ideal was to be attained as laid down in the final report of the Committee on Production and Distribution of Milk, 1919. The difficulties of administration and finance were recognized, but it was felt that uniformity in the application and interpretation of the tests proposed for dealing with this matter was essential. Professor Hobday explained some of the detailed recommendations contained in the League's report, and Dr. Wright said that experience in Scotland fully confirmed the need of action on the lines recommended in the report.

Ministers' Replies

The Minister of Health said that he fully appreciated the importance of the milk supply and of the questions raised by the deputation, and he was very conscious of the wide knowledge and experience which the members of the deputation possessed. The report which the League had submitted was one of great value. He was in full sympathy with the desire of the deputation to increase the consumption of milk, and he agreed that it was essential to give the public confidence in the safety of the milk supply. The deputation would not expect him to express at present any definite opinion upon the recommendations contained in its report, though the recommendations were generally in consonance with the policy of the Ministry of Health. He had been much interested to hear the expert views of the deputation on the question of pasteurization, and he proposed to ask the Cattle Diseases Committee of the Economic Advisory Council to consider the subject and advise upon it. It would be necessary also, before coming to any definite conclusions, to await the report of the Milk Reorganization Commission. Lord De La Warr said that, while the financial aspects of the questions raised by the deputation could not be ignored, the Minister of Agriculture fully appreciated their importance, and would welcome any practical steps that would assist the sale of milk or improve the health of stock. The Ministry would be ready to do anything in its power to co-operate with the People's League of Health and other bodies interested in advancing these objects, apart from any measures which the Government itself might find it possible to take.

Dr. C. O. Hawthorne, representing the British Medical Association, expressed the thanks of the deputation for its reception by the Ministers.