TREATMENT IN GENERAL PRACTICE

This article is one of a series on the management of some diseases of the nervous system met with in general practice.

SPONTANEOUS SUBARACHNOID HAEMORRHAGE

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Spontaneous subarachnoid haemorrhage, so called to distinguish it from the haemorrhage directly attributable to a severe head injury or to the extension of an intracerebral haemorrhage on to the surface of the brain, was at one time regarded as an entity of some rarity and of purely pathological interest. But since the establishment of lumbar puncture as an everyday diagnostic procedure, it has been shown that many cases recover, and that this type of "vascular accident" is very much more common than post-mortem evidence appeared to indicate. It is, like coronary thrombosis, a new disease in the sense that the accompanying clinical picture has only been recognized within the past few years.

Leakage from an aneurysm of one of the cerebral arteries is the cause *par excellence* of subarachnoid haemorrhage. These aneurysms would appear to be usually determined, as Eppinger long ago pointed out, by a congenital defect in the arterial wall (the congenital or berry aneurysm); occasionally a cerebral arteriosclerosis or an infective embolus (a complication of a malignant endocarditis) is directly responsible; syphilis is very rarely an aetiological factor. Congenital aneurysms are met with not infrequently in the course of routine post-mortem examinations. They occur at all ages, are often about the size of a small berry, are most commonly situated on one of the arteries of the circle of Willis or in its neighbourhood, and rarely give rise to symptoms unless they leak or rupture. This is an "accident" for which there is often no obvious determining factor, although it may be predisposed to by superimposed changes in the wall of the artery or by a raised blood pressure, and in exceptional instances may be the direct consequence of physical effort or a blow on the head.

Symptomatology

The symptoms in cases of spontaneous subarachnoid haemorrhage may be attributable to various causes—namely, (a) irritation of the meninges by the altered blood in the subarachnoid space; (b) increased intracranial or intrathecal pressure; (c) the local pressure of a clot on the neighbouring structures; (d) damage to the brain in its vicinity when an aneurysm lying deeply in one of the cerebral fissures ruptures into the adjacent brain; and (e) the primary disease when the patient is the subject of a cerebral arteriosclerosis or an infective endocarditis.

Although the therapeutic indications are obvious we are faced with very definite limitations in their practical application. What can be done to arrest or minimize the haemorrhage? What means have we at our disposal to reduce the intracranial pressure—the cause of death in the fatal cases—when this is excessive? Is it advisable to withdraw the blood-stained cerebro-spinal fluid with the object of alleviating the meningeal irritation which it is producing? What are the chances of a further leak, and

what precautions should be taken to minimize the risk of a recurrence? These are some of the therapeutic questions which arise.

The treatment of subarachnoid haemorrhage may be conveniently considered by citing typical clinical pictures and discussing the applicable therapeutic measures.

Sudden Coma

An individual who is, it may be, in the best of health or who may have complained for some little time of a premonitory headache, due no doubt to a slight leakage, is suddenly seized with an intense "throbbing," "bursting" headache, accompanied, it may be, by vertigo and vomiting, and almost at once becomes deeply comatose. The breathing is stertorous, the pupils dilated, the pulse slow and perhaps irregular, and the temperature somewhat raised. Neck rigidity and Kernig's sign are often present; the knee jerks are diminished or absent, the plantar reflexes are often extensor; and on ophthalmoscopic examination haemorrhages may be seen. A diagnosis of subarachnoid haemorrhage is here practically certain, and corroboration is afforded when a bloody cerebro-spinal fluid is withdrawn on lumbar puncture. The outlook in a case of this kind, in which the patient abruptly becomes deeply comatose, is very grave.

Transient Unconsciousness

But there are other cases in which, although the onset is equally abrupt and the patient unconscious, he quickly comes round. He may be drowsy or stuporose; sometimes he is confused, irritable, and resistive; and he usually complains of "terrible" headache. The signs on examination may be very similar to those in the type of case first described, but the extravasation has evidently not been so excessive, and the fact that the patient is now conscious or less drowsy suggests that the haemorrhage has been arrested.

And what of treatment? Absolute rest is essential. A quarter of a grain of morphine should be given to ease the headache and quiet the restlessness. Then the question arises, What about withdrawing some cerebro-spinal fluid? In my opinion it is wise in a case of this kind to leave well alone and to adopt an attitude of masterly inactivity, for the following reasons. In the first place, we know that many of these patients recover completely and often remain perfectly well for long periods—it may be indefinitely—without a recurrence. Secondly, we know that the meningeal symptoms caused by the altered blood in the cerebro-spinal fluid clear up entirely, and that the febrile disturbance due to the same condition is merely a transient phenomenon, although it may persist for two or three weeks. And finally, it cannot be denied that the withdrawal of cerebro-spinal fluid may lead to further haemorrhage.

When to Intervene

But when there is evidence of progressive haemorrhage, as shown particularly by increasing drowsiness, something must be done to reduce the increased intracranial pressure which is endangering life. Lumbar puncture is indicated here, but the fluid should be withdrawn very slowly until it emerges drop by drop. It may be necessary to repeat the lumbar puncture, but discretion is called

for, and the withdrawal of the fluid at fixed intervals is not to be commended.

Surgical treatment calls for passing notice. A direct attempt to expose the bleeding point and arrest the haemorrhage by ligaturing an artery in the neighbourhood of the bleeding point or by the application of pressure is rarely justified, for it is seldom possible to locate the aneurysm with certainty unless it happens to be situated about the point where the internal carotid artery joins the circle of Willis. When the presence of a third-nerve paralysis indicates that this is so, and when the symptoms point to progressive haemorrhage or to a recurrence of the bleeding, ligature of the internal carotid in the neck would appear to be a preferable procedure.

A patient who has had a subarachnoid haemorrhage should be kept at absolute rest on his back for four weeks. At the end of this period he may be permitted gradually to assume the sitting position. He must not be allowed to exert himself or to strain at stool. It is well to keep him off work for three months, and if his occupation entails strenuous effort he should be advised to try and obtain some lighter employment. Should the patient inquire as to the possibility of a recurrence he may be told that this is most unlikely if he adheres rigidly to the restrictions laid down by his physician.

Haemorrhage from a leaking aneurysm is sometimes strictly localized, and when this is so no blood may be found in the cerebro-spinal fluid obtained on lumbar puncture. There is one situation in which a diagnosis of a localized subarachnoid haemorrhage may be made with practical certainty. When headache of abrupt origin is associated with neck rigidity and a third-nerve palsy, a diagnosis of a leaking aneurysm at or about the point where the carotid artery joins the circle of Willis is obvious. Cases of so-called recurring third-nerve palsy are very probably so produced. In a case of the writer's in which the diagnosis of a leaking aneurysm in this region was confirmed by arterio-radiography, Mr. Norman Dott ligatured the internal carotid artery in the neck. The result was very satisfactory, for the severe pain localized about the eye from which the patient had been suffering for some weeks was immediately relieved and the associated third-nerve paralysis gradually improved.

According to J. Gluskin (*Thèse de Paris*, 1935, No. 414) the Department of Public Health in Lithuania forms part of the Ministry of the Interior, and consists of: (1) a central office subdivided into three sections, devoted respectively to sanitary and statistical epidemiology, administration, and finance; (2) veterinary services; and (3) pharmaceutical services. The Health Service of War and of the Navy is under the control of the War Office. There are also the following eight voluntary organizations, which collaborate with the official institutes—namely: (1) The Lithuanian Red Cross, (2) the Society for Combating Tuberculosis, (3) the White Cross for Combating Venereal Disease, (4) the German Hospital Society, (5) the Jewish Society for Public Assistance, (6) the Russian Hospital Society, (7) the Mother and Child Association, and (8) the Association for Combating Alcoholism. The diseases notifiable in Lithuania are enteric fever, typhus, relapsing fever, malaria, cholera, anthrax, plague, dysentery, cerebro-spinal fever, mumps, leprosy, rabies, and bites by suspected animals. The Society for Control of Tuberculosis is also endeavouring to make tuberculosis notifiable. There are at present 214 lepers in Lithuania isolated in the three leper hospitals at Riga, Taisi, and Cosis.

HEALTH SERVICES IN ENGLAND AND WALES

SIXTEENTH ANNUAL REPORT OF THE MINISTRY OF HEALTH

As is appropriate, Sir Kingsley Wood prefaces the sixteenth Annual Report of the Ministry of Health,¹ covering the twelve months ended March 31st, 1935, with a Jubilee review of the main developments during the King's reign, in the sphere of activity covered by the Ministry.

Survey of the King's Reign

He recalls that the experience of the war years had emphasized the value of unified control, and that consequently in 1919 the Ministry of Health had been created to combine the health work of the National Health Insurance Commissioners of England and Wales with the public health services of the Local Government Board, including such kindred services as those relating to the medical inspection and treatment of school children and the medical care of the mentally unfit. Under the three headings of insurance, organization of local government, and the special services rendered by the latter, he indicates the chief lines of progress made in the quarter of a century since 1910. In 1912 the insured population was estimated at 11 millions; it had now increased to 16,450,000. In the last ten years more than £150,000,000 had been disbursed in the statutory sickness and maternity benefits, and over £90,000,000 in medical benefit, while more than £53,000,000 had been spent in additional benefits between the date when the first periodical valuation of approved societies had become effective and the end of the last calendar year. The number of old age pensions between the ages of 65 and 70 was 664,000, of widows' pensions 657,000, and of orphans' pensions 15,000. The expenditure of local authorities had risen from £147,000,000 in 1910-11 to £507,000,000 in the last completed year of account. The London County Council, which had expended on its work £12,000,000 in 1910-11, had spent £38,000,000 in 1932-3, a sum which was comparable with the budgets of some nations.

The development of the organization of local government was indicated, moreover, by the passing of the various Rating and Valuation and Local Government Acts. Water supplies had been immensely increased, housing schemes had resulted in the addition of more than two and a half million new houses to the eight million existing in 1918, and town planning on well-considered lines was now the rule rather than the exception. Systematic services for the prevention and treatment of tuberculosis and for the development of work in connexion with maternity and child welfare had come into being, and schemes to aid the blind were now operating in all areas of the country. In 1910 there was no mental deficiency service; the Act of 1913 had led to the provision of accommodation for severe cases, the treatment of early mental illness, the training and employment of defectives, and such a fall in the relative amount of certification that in 1934 over 20 per cent. of cases admitted to institutions had entered as voluntary patients. Other advances noted by the Minister of Health were the provision of post-graduate medical training facilities, the promoting of medical research, and the active co-operation with other countries through the agency of the Office International d'Hygiène Publique in Paris and the Health Organization of the League of Nations.

Finally, the standardized death rate had fallen from 13.2 per 1,000 in 1910 to 9.3 in 1934; infant mortality in the first year of life from 105 per 1,000 live births in 1910 to 64 in 1933; the death rate per million children living at the ages of 5 to 15 from 2,491 to 1,882; the standardized death rates per million from pulmonary tuberculosis

¹ *Sixteenth Annual Report of the Ministry of Health, 1934-35.* London: H.M. Stationery Office. 1935. Cmd. 4978. (5s. 6d. net.)