lesion as of prognostic value with regard to regeneration of the motor fibres. In one case he observed parapallæsthesia.

Functional disturbances of pallesthesia may occur either alone or in conjunction with organic disturbances. Pallesthesia may be lost without loss of pressure sensation, but pressure sensation is never lost without loss of pallesthesia. This is because if pressure sensation is to be lost a lesion of the whole nerve is necessary, since pressure sensation derives its stimuli from so many sources.

The author concludes then that pallesthesia is a form of deep sensation which is independent of all other forms of sensation. He was able to test the perception of vibrations on a piece of exposed bone, and found that this was more intense than on the opposite side, so proving that the soft parts had nothing to do with this sensation; and, as the nerve to the diaphysis of the bone does not subservce this sense, it follows that the periosteum and the nerves to the periosteum are concerned in its transmission. The author thinks that vibration sense is the perception of a special stimulus, and not merely of rhythmical tactile or pressure stimuli.

If pallesthesia is present in the bones whose periosteum is supplied exclusively by the ulnar or sciatic nerves, a complete lesion of these nerves may be excluded, and, if it is absent, it is probable that the nerves are completely divided; but the same conclusions must not be drawn with regard to the radial and median.

R. G. GORDON.

[165] Certain aspects of post-diphtheritic diaphragmatic paralysis.

The authors comment on the paucity of reference in the literature to diaphragmatic paralysis. Paralysis of some sort occurs in 10 to 25 per cent of cases, and in spite of the statements of earlier writers this incidence is diminished by the early administration of antitoxin. Paralysis of the phrenies occurred in 8 out of 4259 cases of diphtheria, and was fatal in all. These paralyses occur from the fifth to the seventh week of the disease, and the condition may be mistaken for lobar pneumonia. The breathing is entirely intercostal, helped by raising of the shoulders. The abdomen is scaphoid in most cases, and before paralysis is established there is vomiting, tachycardia, and dyspnœa. There is cyanosis and pallor and occasionally acute epigastric pain. No treatment seemed to be of any use in the authors' experience, but they quote a case of Dr. Marriot's in which a child recovered after artificial respiration had been carried on for five days. They remark on the necessity of rest in cases of paralysis, and the futility of administering antitoxin after the third day.

R. G. GORDON.

TREATMENT.


The author states that the older views of motor aphasia have not taken into account adequately a fact, fully emphasized by P. Marie, that
intellectual defect is commonly associated with motor aphasia. The following conclusions follow ten years’ study of difficult cases of this sort.

Cases in which speech is spontaneously restored may be seen not only in the mild and temporary lesions but in some of the grave types. The mechanism is uncertain; but the cause is usually that the patient is taken in hand by his relatives, who re-educate him on the same lines as one applies to a small child learning to talk. Many cases, on the other hand, remain unimproved for as long as fifteen years, and are then partially or wholly cured of their motor aphasia by systematic re-education.

The methods of re-education are in general two. The older method is essentially didactic, by articulation exercises and co-ordination of the voluntary muscles of articulation.

The newer method which the writer has used (in association with Monod) consists in the re-education of attention, emotional control, and inhibition, and in the removal of that lack of confidence which the patient shows in his attempts at articulation. In the writer’s opinion the patient has not really forgotten the complex act of co-ordination, since this is in health automatic and unconscious after the simple evocation of an elementary sound which sets going the whole corresponding reflex mechanism, unless the response be inhibited. It is because the aphasic is able neither to evoke nor retain the combination of sounds that are characteristic of the sought-for word that he cannot articulate it.

Other sound combinations interfere in the aphasic, so that he is unable to fix his attention on a particular sound and unable to repeat the word to which the sound is a key. Moreover, the patient fears his own incapability, does not try or tries badly, inhibits, and repeats only stereotyped words. By beginning with pronunciation of simple sounds one often increases the patient’s mistrust in his own powers of expression. If the first lessons consist of practice in elementary acts such as blowing or sighing, e.g., for the f’s and l’s, we re-associate the ideas and images which tend to re-fix the sound in the aphasic’s mind. As soon as a new sound is obtained, it can be fixed by a simple short word which begins with that particular sound; the act to produce the sound, the sound itself, and a particular word will then be re-associated and perhaps retained. New sound emissions vary in difficulty with individual patients, and they quickly forget lessons at first. Where inhibition, inattention, and intellectual defects are present in the same patient, the simplest acts are acquired only after a regular struggle. Memory aids, such as writing, drawings, and simple objects, are useful in training the memory.

Elocution and reading aloud are used later; small words of similar construction often act as keys to a whole series; words denoting articles of diet, of occupation, and pastimes are useful. Many months will be taken up in pronunciation and reading aloud.

In conclusion, practical results vary much according to cases. The defects of intellect are the most hampering of all the difficulties, and these are the very difficulties which have escaped general recognition in the past, so that attempts at treatment have often failed on this score.

J. Le F. B.

The author rapidly reviews the pathology of the disease, and reserves the term true syringomyelia for the gliomatous new growth in the neighbourhood of the central canal. In 1907 he published his first observations, and latterly, in conjunction with Beaujard, has treated several cases by x rays, with resulting improvement in symptoms. The subjective symptoms are the most improved; amyotrophy when present seems to have been arrested; trophic changes are not much influenced in the joints, though trophic ulcers have healed in the soft parts.

An interesting case is described where a patient with cervical syringomyelia was treated with radiations from 1906 to 1914. The sensory changes in the hands improved, and the amyotrophy was so much better as to allow of the patient’s return to work as a packer. In 1920 he was re-examined a few days before death from haemoptysis. Autopsy showed a long cavity from the 1st cervical segment to the lower dorsal region, but the gliomatous process in the cervical region was almost nil, this being the part subjected to radiation. The untreated dorsal cord, on the other hand, showed active gliomatous changes.

It is pointed out that a wide area of radiation should be insisted upon in these cases, using the largest therapeutic doses. The writer’s histological and experimental studies show that the largest doses of x rays do not harm the healthy structures in the central nervous system. Laminectomy before radiation does not seem to be necessary, especially as the bone is less dense than usual in syringomyelia. The two sides of the cord are treated separately, screening off with lead the parts to be untreated, and filtering off skin rays by aluminium filters; the anticathode is placed 20 cm. from the skin surface.

J. Le F. B.


This is a short review on the cerebrospinal fluid, especially in its relation to syphilitic disease of the nervous system. The only diagnostic point touched on is the early diagnosis of neurosyphilis before the appearance of nervous symptoms. The work of Fildes, Parnell, and Maitland, and of Scott and Pearson and others on this subject is briefly summarized. Weed, Wegefarth, and Ayers produced meningitis in animals by drawing off their cerebrospinal fluid during the course of an experimental septicemia, and quoted five clinical cases of septiceemia where meningitis followed lumbar puncture. In view of these facts, Bastron considers it possible that lumbar puncture performed in the early stages of syphilis may introduce the spirochete into the subarachnoid space and precipitate neurosyphilis. He therefore advises that lumbar puncture for diagnostic purposes should be avoided in early syphilis until the patient has had a course of antisyphilitic treatment.

He considers that the intraspinal therapy of neurosyphilis does not
yet rest on any secure foundation either of theory or results; for it is only in cases of meningeal syphilis that the drugs can by this means be brought into direct contact with the spirochæte, and these are the cases which respond most readily to general systematic treatment. In general paralysis the spirochæte is within the brain tissue, and is no more likely to be reached by intrathecal than by intravenous administration of drugs.

Baston gives numerous references to recent papers, especially by American authors, which are valuable to anyone who wishes to enlarge his knowledge of this subject.

J. G. Greenfield.


The statistics are derived chiefly from two epidemics in 1917 and 1918. The serum used was obtained by repeated injection of the pleomorphic streptococcus from poliomyelitis, and was given intravenously, as this was found to produce better results that when it was administered intrathecaly. The results were uniformly good when the serum was given in the earliest stages before the onset of paralysis, and the importance of examining the cerebrospinal fluid as to cell count and globulin reaction to determine the diagnosis at this stage is insisted on. In the later stages the results become less good; but when the paralysis was only slight, 60 out of 61 completely recovered. In those cases in which paralysis was definitely established before administration, 61 out of 123 completely recovered and there were 18 deaths.

R. G. Gordon.


Present therapeutic measures are powerless to influence the course of general paralysis, and are able to improve tabses only slightly, but are most efficient in the early stages which precede these conditions, and which are revealed by examination of the cerebrospinal fluid. A single puncture for diagnosis is only recommended after the stage of general infection, and when sufficient treatment has been given, and a single puncture may suffice. The writer stresses the fact that the blood-serum Wassermann may be negative while there is active neurosyphilis revealed in the cerebrospinal fluid. A discussion of the time to puncture leads Sézary to state that no general rule should be kept, but that each case should be treated on its own clinical findings. His rules are: First abolish all clinical signs by treatment, and also, if possible, obtain a negative blood Wassermann; wait one month, and then give a short supplementary course of intravenous arsenobenzol; if the blood now gives a positive from a former negative Wassermann reaction, wait two and a half to three months; and if a negative Wassermann is obtained then, perform lumbar puncture. The fluid thus obtained is free from suspicion that blood infection rules the result. A good general rule is to puncture at the time when all intensive treatment is being stopped with apparent cure in sight; following this,
for three or four years less active treatment is carried out and the patients are examined clinically at intervals, when a second, less important, examination of the cerebrospinal fluid will be desirable.

There are certain rare cases of neurosyphilis, myelitis, arterial lesion, and tabo-paralysis in which the cerebrospinal fluid is normal for some unexplained reason; but these rare cases should not influence one's practice with the vast majority of others, especially in relation to their treatment.

J. le F. B.


This article deals with data obtained from 642 cases of syphilis in all stages of the disease, treated at the department for syphilis at Johns Hopkins Hospital. All the patients underwent a routine neurological examination, and those with definite neurosyphilis with clinical signs are excluded from the considerations in this paper. Routine lumbar puncture was performed after a few months' antisyphilitic treatment to notice the following points: (1) The effects of treatment on early and minor abnormalities in the spinal fluid; (2) To detect possible asymptomatic neurosyphilis; (3) To note racial differences in latent neurosyphilitic cases, as between negro and white patients; (4) To test the diagnostic value of certain minor signs and symptoms. A full routine microscopic and serological investigation of the fluids was carried out. The findings were that, of 34 cases with primary syphilis treated before secondaries had appeared, only one (2.9 per cent) showed any abnormality in the cerebrospinal fluid. After the appearance of the secondaries the incidence of abnormal findings in the spinal fluid was raised to 15 per cent, no matter how long the disease had lasted or by what lesion it was apparent. Only 12.7 per cent of the whole 642 cases showed abnormal findings in the cerebrospinal fluid, thus demonstrating that treatment had been successful in clearing up at least half the early abnormalities noted by other workers in untreated cases.

Asymptomatic neurosyphilis was twice as frequent in white as in coloured patients. Of 173 patients who had minor signs in pupils, etc., 49 had also spinal-fluid abnormalities (28.3 per cent), against 7.03 per cent in other cases.

In general the serological signs of asymptomatic neurosyphilis can be made to disappear by prolonged, intensive, routine antisyphilitic treatment. In the syphilis department of Johns Hopkins Hospital more than 20 per cent of all patients are clinically, or, because of the serological evidence potentially, outspoken neurosyphilis.

The paper concludes that a study of the spinal fluid should be made as a routine in all cases of syphilis as essential to an intelligent treatment of the disease generally. The writer recommends that spinal puncture should be performed after the first or second course of intravenous treatment, and that it should be repeated at least once before final discharge from treatment as a presumed cure. In this way the incidence of clinical neurosyphilis will be reduced to a minimum.

J. le F. B.
TREATMENT

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