

however faulty the Abderhalden hypotheses may be held by the serologist, from a clinical standpoint the methods of Dr. Ludlum are successful in a large enough percentage of these cases to entitle them to consideration as valuable aids to both diagnosis and therapy.

DILATATION OF CEREBRAL VENTRICLES IN VARIOUS FUNCTIONAL PSYCHOSES

By E. E. Southard, M.D.

Cases of dementia præcox, manic-depressive insanity and involutional melancholia studied photographically. The dilatation of the ventricles often more marked in posterior parts. Correlation of dilatation with excitement.

Dr. D. J. McCarthy, Philadelphia, said he thought this study of Dr. Southard's very illuminating from the standpoint of what might be termed the abnormality of brain tissues. One of the most difficult things the neuropathologist has to face in correlating pathological conditions of the brain with symptomatic phenomena is to determine whether the variation from the normal is pathological. Only one method exists for the neuropathologist to get a fairly definite idea of what constitutes a normal condition. Not only the microscope, but the general state of the brain substance, the condition of normal meninges, the normality of blood vessels and blood supply to the brain, there is only one method—to see in succession and in a relatively short time a tremendous mass of material. This study which has interested Dr. Southard had interested Dr. McCarthy, and he had examined 500 brains of patients dying from advanced pulmonary tuberculosis. This question of distention of ventricles in the Reports of the Phipps Institute is noted, together with a corresponding amount of atrophy and associated not only with ependymal changes, but also changes in the choroid plexus. The study of dementia præcox was closely associated with pulmonary tuberculosis and the condition is one in which there is apt to be a rather marked loss of body weight as the patient goes on to the terminal stages. The loss of brain substance with body weight as in cancer and tuberculosis would have to be correlated before any relation of brain substance in connection with the symptomatic manifestation could be drawn. In the tuberculous group of cases there was a moderate to advanced stage of distention, as Dr. Southard has shown, associated with atrophy of the cortex grossly and under the microscope. This atrophy was almost uniformly limited to the parietal and occipital regions, the anterior part of the brain remaining apparently normal. In advanced cases there was a pathological condition of the ependymal and subependymal tissues, a condition of lysis or condensation, so to speak, of the subependymal tissues. In the subependymal tissues there were large masses of hyaline bodies which were not the hyaline bodies we see in paralysis agitans and conditions of that kind. When you took the ventricular fluid you found the same condition. In a large number of cases the ventricular fluid congealed when hardened in formalin. Dr. McCarthy said he was not able to determine whether the condition was normal or whether it was pathological. He said he termed it a gelatinous exudate as contrasted with the tendency of the normal ventricular fluid to remain fluid. Dr. Southard must realize that unless one had a

mould to take the brain in, to keep it in, that there would be a tendency for the brain tissue to have this slit. Dr. McCarthy's method is to make a transverse section of the brain adapted to showing up the entire ventricle, the lateral ventricles anteriorly and posteriorly and using an arbitrary method of finding out the measurements. Although the measurements were made in some conditions, he thought Dr. Southard was now beginning where we should have begun some fifteen or twenty-five years ago in working out problems of neuropathology.

Dr. Spiller said it was important to know the ages of the persons from whom the brains were removed. In older people we might expect greater enlargement of the ventricles than in younger people. He asked whether Dr. Southard had measured the ventricles of the brains of many persons who were not strikingly abnormal so far as the brain was concerned. He thought if one examined such brains he would find a great variation in size of the ventricles. Dr. Spiller said he had a large number of brains in his laboratory in which the ventricles varied in size. They were from persons who were not supposed to be without nervous disease, so that one cannot determine from these whether such variations occur in persons who are supposed to have normal brains. It would make a great difference in the appearance of the ventricles if the section were made in the brain as soon as removed or after the brain had been hardened. Dr. Spiller said he had always followed the method of horizontal sections, and these had some advantages over frontal sections. They permitted a better observation of the basal ganglia and adjoining parts, they afforded better preparations for gross specimens, and they were equally capable of being made into microscopical serial sections. It is true; however, that many prefer the method of frontal sections.

Dr. Archibald Church, Chicago, said in view of the fact that neurologists are more and more becoming interested in intraventricular conditions and choroid functions, he would recite a little experience of a brilliant coworker of his, Dr. Lespinasse, who devised and carried out in one case a new method of controlling the choroid, that is of destroying the choroid within the ventricle. It occurred to the operator that he could examine the choroid and the intraventricular area by means of a short cystoscope. A child with hydrocephalus came under his care and after introducing the instrument through the parietal cortex, he was able to see the choroid floating in the fluid. Through this same tube he introduced an electrical instrument and cauterized the choroid which shriveled up to a very small mass. Within three days the tremendous dimensions of the head present before the operation entirely disappeared and the cranial bones collapsed upon themselves. Unfortunately the child perished within a week.

Dr. Southard said that his method of preserving the brain was the Retzius method of suspension of the brain in formaldehyde upon threads passed under the basal vessels; the brain comes through in this method without distortion. No brain should be placed in a jar, packed round with cotton, since this method invariably produces distortion. Some might think that brains should be formalized in the skull, *in situ*. Dr. Southard felt that this method was to be deplored from the standpoint of bacteriology. Of course, a special series, such as Dr. Cushing's brain tumor series, might require a different technique.

In reply to Dr. McCarthy, Dr. Southard thought some of the conditions spoken of might be due to secondary invasion of organisms.

With respect to Dr. Spiller's remarks, Dr. Southard preferred the frontal method of section of the brain, not because it was a German method, as opposed to the French method, but because if one were later to make total brain sections for microscopic purposes, the technique was much easier with the frontal section than with the horizontal section as advocated by Dr. Spiller. Moreover, Dr. Southard felt that on account of the metameric arrangement of the nervous system, there was a good deal to be said for the method of frontal section on theoretical grounds. At any rate it is unwise for any one to condemn the frontal section method as entirely unscientific. Dr. Southard could not forbear saying that although the horizontal section method might have its special advantages, he felt that the frontal section method had equal advantages and perhaps greater ones.

The question of artefacts had been raised. Dr. Southard was unwilling to take the opinion of any one as to artefacts who had not made elaborate systematic studies from fairly large collections of brains and studied his results with the aid of photographs. Dr. Southard was inclined to agree with Nissl, who once somewhat whimsically stated that everything you cannot photograph was subjective.

As to the question of normal brains, Dr. Southard would be quite willing to work upon normal brains if there were any to be found; the medicolegal was notoriously inadequate for purposes of control. The true pathological method was to examine as large a number of brains as possible from all sorts of conditions,—insanity, epilepsy, feeble-mindedness, criminality, nondescript medicolegal material and general hospital material.

A BRIEF REVIEW OF A YEAR'S NEUROSURGICAL WORK, WITH SPECIAL REFERENCE TO SPINAL CORD LESIONS

By B. Sachs, M.D. (neurological aspect), and C. A. Elsberg, M.D.
(surgical aspect)

Short review of neurological material at Mount Sinai Hospital, New York, during the past twelve months, with remarks upon the indications for operation and results obtained by operative interference. The symptomatology of the cases of spinal cord disease; peculiarities in the level symptoms; variation of symptoms; indications and contraindications to surgical treatment.

Dr. B. Sachs said it seemed to him that the blood vessels had their innings at this meeting, and while he thought it would be justified if we treated the subject with some skepticism, yet he thought that the results that had been achieved in some of those cases were so remarkable that we must take the possibility into account that the blood vessels really do that which has been claimed for them. Personally, he must say that it is rather difficult to conceive of a pressure or of some other influence exerted by a merely dilated blood vessel. It is difficult to conceive of this pressure being great enough to bring about such marked symptoms as Dr. Elsberg described in several of these cases and whether they are able to explain this influence or not we must take it into account. To refer to the case of the Turk referred from Dr. Sachs' service, that case presented all the symptoms pointing to a very definite focal lesion so definite that they were at least suspicious of its being a neoplasm, and they would not have been