NEUROPATHOLOGY.

[154] Minute pathological changes in the liver in epidemic encephalitis, especially in the chronic forms (Lesioni istopatologiche del fegato nell'encefalite epidemica, specialmente nelle forme croniche).—
T. Rizzo. Riv. di pat. ner. e ment., 1924, xxix, 60.

Changes are found in the liver cells in the majority of cases. These are of a degenerative type, combined with chronic reaction in the form of connective tissue proliferation. The writer remarks on the frequency with which similar cirrhotic changes occur in the Parkinsonian syndrome due to causes other than encephalitis.

R. G. Gordon.


In the brain of a patient with chronic epidemic encephalitis of the Parkinsonian variety, who died of pulmonary tuberculosis, mucin-like bodies were found lying in the neuroglial meshes. They possessed no cytological structure and were not present within neuroglia or nerve cells. They were present in the white matter of the cerebellum adjacent to the dentate nucleus. They were spherical in form, with irregular edges on high magnification, and their diameter varied from 20 to 50 microns. They were clearly not artefacts and stained with basic but not acid dyes.

R. M. S.


The virus of herpes attacks certain ectodermal structures, viz., skin, nervous system and cornea. The skin lesions are the commonest, and it is usually by the presence of associated spots that the cause of nervous and corneal herpetic lesions is recognized. The virus is easily obtained from the spots, and when injected into the brains of laboratory animals causes, as is well known, an encephalitis similar to that caused by the virus of encephalitis lethargica. When it attacks the human nervous system it causes herpes neuralgicus (including zoster), ocular palsy, or optic neuritis; the virus has been demonstrated in the cerebrospinal fluid of patients recovering from dermal and corneal herpes. In the cornea the commonest lesions are dendritic ulcers, keratitis vesiculosa, and keratitis punctata superficialis. Grüter shows that the virus is present in the cornea in these conditions, and he has studied it by transmitting it to the cornea of dogs.

If a swab be taken from a dendritic ulcer on the human cornea and inoculated into the scarified cornea of a dog, there is produced a characteristic inflammatory picture having many points of similarity with human keratitis dendritica. After about twenty hours points of infiltration are seen along the lines of scarification; the next day they coalesce; then delicate ‘shoots’ appear and on the third or fourth day there develops the characteristic branched network with overhanging epithelial edges; later, there is a more or less distinct iritis. The peculiar sensory disturbance of keratitis dendritica is found on the first day, but it develops gradually as the infection spreads,
and is most definite on the most inflamed area of cornea; the edges of the cornea, if free from inflammation, may retain their sensitivity when the centre is anaesthetic. In the next few days the whole cornea becomes inflamed and shows a large map-like network constantly changing in appearance; its details are best seen with the aid of fluorescein. The parenchyma of the cornea, as a rule, shows fine grey dots. After six or eight days there is marked improvement and by the tenth day superficial healing takes place, but the deep inflammation lasts for several weeks more; the surface of the cornea remains quite anaesthetic, and, with fluorescein, epithelial defects are apparent; numerous blood vessels grow in from the edge. This type of inflammation has not been obtained with bacterial inoculations or by the instillation of chemicals. It is produced by a specific ultramicroscopic virus which has not, as yet, been cultured. Of fifty-eight swabs from dendritic ulcers, forty-two have ‘taken’ and have caused the same type of keratitis. Ten strains of infection have been transmitted from dog to dog, several of them more than twenty times. On nine occasions blind human eyes have been inoculated and dendritic ulcers have followed, but positive results are only obtained in individuals of lowered resistance. In animals one attack confers immunity, whereas in man there is only relative immunity or none at all. The virus is resistant to cold, but is killed by being heated to 50° C. for half an hour.

Two types of herpes virus occur in the human eye, a milder and a stronger; the former causes both in man and in dogs keratitis vesiculosa or punctata, the latter causes keratitis dendriticà. If the virus of the milder type be inoculated into the brain of a dog, it becomes more virulent, and after transmission through the brains of several animals, is as strong as that of the stronger type; on the other hand, the latter, if it be either heated to 36° C. for several hours in a saline suspension or kept for several months in the ice-chest on a brain-and-glycerin medium, becomes much weaker. In the human skin the weaker type is present in the spots of herpes zoster and is associated with staphylocoeci in certain cases of impetigo contagiosa; the stronger type is present in herpes facialis and labialis, and in cases of impetigo contagiosa with great inflammatory reaction. The type of virus present can only be decided by inoculating the cornea of dogs. There is no reason to suppose that herpes zoster has a causal agent essentially different from that of herpes simplex. Staphylocoeci, pneumococci and other organisms may be associated with the herpetic virus in the skin lesions.

J. P. M.


The Spatz method for the diagnosis of general paralysis at autopsy by means of the presence of iron in the cells round the cortical vessels was described in a
former abstract (this Journal, Vol. IV., p. 289). Ostertag now raises the following objections: (1) That in some cases of syphilitic meningitis, iron may be present in the cells round the vessels of the pia, and, where the pia is adherent to the brain, even round vessels in the most superficial part of the cortex; that in carrying out Spatz's test, small portions of pia are likely to be included and therefore the test is useless in a difficult case. (2) That in certain cases of general paralysis the iron may be present only in a localized area and therefore a negative finding is of little value.

Spatz admits that iron does occur in the cellular infiltrate in a few cases of syphilitic meningitis and says that care must be taken not to include any pia in the portion of brain chosen for the test; in any case, the naked-eye appearance after the application of ammonium sulphide is more important than the microscopic, and the distribution of the iron throughout the whole cortex is specific for general paralysis. He explains that he has always expressed himself with reserve in regard to the value of a negative result of the test, but that in actual practice negative findings in cases of this disease are very uncommon.

J. P. M.


The various nervous and mental diseases which show a familial tendency or in which hereditary factors are suspected, are difficult to classify, partly because of group overlapping and partly because the character of the pathological lesions is often closely comparable in two processes which are quite divergent from the clinical standpoint. For these reasons, Orton limits his review to a consideration of the chief histopathological features of those conditions which show more or less definite lesions.

1. The chronic heredodegenerations—progressive spinal muscular atrophy, familial spastic paraplegia, the hereditary ataxias of Friedreich and of Marie, and their admixtures, and hereditary optic atrophy—are characterized by predominantly degenerative changes of the nature of cell sclerosis with little or no lipoid degeneration. The ataxias are further characterized by coarse-fibred tangled mats of gliosis unlike the columnar replacement of most tract degenerations.

2. The lenticular group is characterized by progressive degenerative changes associated with fatty degeneration and neuronophagia predominantly in the lenticular nuclei, with varying degrees of neuroglial response, and usually—though not without exception—a striking hepatic cirrhosis. In Wilson's disease, the lesion is practically confined to the striate bodies; there is very little glial reaction, and cavitation results. In pseudosclerosis and bilateral athetosis lesions can also be found in other parts of the nervous system, and there is a glial reaction which results in some fibrous scarring and many giant multinucleated forms and pale vesicular giant nuclei.

3. The chronic choreas are characterized by extensive degeneration associated with fatty deposits in the striate body and with striking response
on the part of both glia and connective tissue. In Huntington's chorea the cortex is always involved, particularly the laminae II, III, and IV in the central and frontal cortical fields.

4. Amaurotic family idiocy is essentially a dementia in which there occurs complete involvement of the nerve cells by a process leading to extensive distortion of cell form through the accumulation of débris. This débris is lipoidal, but varies in its staining reaction to scharrach R and does not stain either by this method or with osmium as intensely as do the senile fatty deposits. The process is looked on as a disturbance of intracellular metabolism, but whether of synthesis or catalysis cannot be determined.

5. Defects may be explained as simple failures in production of neuroblasts leading to numerical reduction but with comparatively normal form, as in microcephalia vera, or as deviations from the normal, as in the production of an abnormal brain pattern or cell lamination or as combinations of both processes. An explanation of 'normal-looking' brains in striking defective cases is suggested on the ground of proportionate overgrowth of the supporting tissues with lack of either quantitative or qualitative development of the nerve cells or their interconnections.

R. M. S.

SENSORIMOTOR NEUROLOGY.

[159] Contribution to the radiological diagnosis of medullary compression (Contributo allo studio radiagnostico delle compressioni midollari).

Pointing out the difficulty of accurate diagnosis of spinal compression by ordinary radiological methods, the author draws attention to the methods of Dandy and Sicard. The former injects sterilized air and the latter 'lipiodol' i.e., iodized oil, into the subarachnoid space. The authors describe their own double technique of injecting lipiodol above the compression and air below, and claim that in this way they can obtain in one photograph an accurate location of the area of compression. In their experience no ill effects follow this procedure, and they are satisfied that the technique presents no difficulties.

R. G. Gordon.


This paper is in the nature of a retrospect. Changes in the chemistry and physical characteristics of the fluid lying above and below an obstructive lesion of the cord are discussed and their differences compared. The technique of puncture of the eisterna magna is given, as is also Sicard's localizing method by lipiodol and x-ray. Cisternal puncture alone or combined with lumbar puncture is considered useful in (1) diagnosis or treatment of post-meningitic spinal subarachnoid block; (2) early treatment of meningococcal meningitis; (3) for diagnosis and treatment of syphilis of the nervous system; (4) for diagnosis of cord compression.

Lewis Yealland.