

of coma, and that is, freedom from, or only slightly developed, affection of the lungs. My case bears out both these observations.*

From a consideration of the case I have brought forward and of other similar ones I have noted, it may, I think, be reasonably inferred that there is a peculiar form of diabetes of an acute type, most common in young subjects, in which the initial symptoms come on with marked brusqueness, and in which suddenly occurring intestinal symptoms usher in the fatal coma or collapse which is the usual mode of death characteristic of these cases, and that in this form of the disease especially are morbid lesions of the pancreas likely to be met with. The nature of the connexion, if any such exists, between pancreatic disease and diabetes remains, however, still as vague and undetermined as the pathology of glycosuria itself.

ART. XIX.—*On some Microscopical Sections from Two Cases of Diabetes Mellitus.*^b By P. S. ABRAHAM, M.A., B.Sc., F.R.C.S.; Member of Court of Examiners, and Curator of the Museum, Royal College of Surgeons of Ireland.

As the result of the interesting and important discussion on diabetes mellitus which took place last year at the Pathological Society of London, we may consider that at the present time we really know very little about the true pathology of that disease. Although nearly every organ of the body has been in various cases and at different times found in a diseased condition, no definite or fundamental lesion has been demonstrated to exist in all cases. Without alluding to the numerous other chemical and pathological theories which have been, from time to time, put forward, it may be remarked that since Claude Bernard's historic discovery of glycosuria following injury to the floor of the fourth ventricle, and in consequence of the frequent termination of diabetes mellitus by coma, observers have been naturally led in recent years to a minute examination of the nervous centres. Dr. Dickinson, indeed, and some others consider that they have found in connexion with the blood-vessels of the medulla and pons abnormal appearances enough to account for the functional perversion.

I have recently had the opportunity of examining certain of the

* *Vide* also Lindsay. *Dubl. Jour. Med. Sci.*, Oct., 1883.

^b Read before the Academy of Medicine in Ireland, Friday, February 29, 1884.

nervous structures in two cases of diabetes, and although I cannot now pretend to throw much light upon the subject, it seemed to me that a demonstration of the sections which I have prepared might at least prove interesting to the members of the Pathological Section of the Academy of Medicine.

The first case was under the care of Surgeon Kelsall, A.M.D., who forwarded to me the cerebellum, pons, medulla, and a small part of the cervical cord, together with the following note:—"Sergeant J., 2nd York and Lancaster Regiment, admitted on 3rd January, 1882, with diabetes mellitus. Quantity of urine passed daily, between 300 and 400 oz.; sp. gr. between 1024 and 1036. Died 20th April, 1882. *Post mortem*, six hours after death—Liver fatty, 5 lbs. 9 oz.; kidneys large and white coloured." Surgeon Kelsall was shortly afterwards ordered abroad, and I have not been able to obtain further details of the case.

The parts were kept in Müller's fluid for some time, and subsequently in spirit. The sections were stained with picocarmine and hæmatoxylin, and were mounted, some in balsam, others in glycerine.

The most marked appearances which present themselves in all the sections are numerous masses, resembling the so-called "*corpora amylacea*" and "*colloid bodies*," which are interspersed everywhere throughout the nervous tissue. They are of all sizes, from the bulk of a leucocyte to masses twenty times the diameter, and the largest of all are evidently made up by the coalescence of several. They can be seen to occupy spaces amongst the neuroglia fibres, and as they have increased in size the latter have become bulged or pushed aside. In many cases the proper tissues of the part seem to have become absorbed, and have been replaced by one or more of the masses. Some of them are situated near to the blood-vessels, perhaps in the lymphatic channels; but there appears to be no definite or constant arrangement. The smaller ones have generally taken up from the double stain a beautiful blue tint; the larger have remained uncoloured, except sometimes around the circumference. The former are, for the most part, globular in shape, with a more or less distinct boundary, and in structure they are, as a rule, absolutely amorphous. Occasionally, however, I imagine I can make out a condensation in some parts or a faint nucleus. The large masses, on the other hand, are often distinctly granular, and are generally more or less botryoidal in form, with an irregular boundary. The enveloping tissue is sometimes slightly condensed and

more darkly stained in the immediate neighbourhood, and occasionally there is here an increased number of small cell elements. What the exact nature of these masses may be I am at a loss to say. They are unaffected by alcohol and ether and dilute KHO, and are certainly not fat; they are more probably protoplasmic. The text books give but little information on the subject; and here, as in many other cases, the writers differ. In his "Diseases of the Nervous System," Dr. Ross, speaking of "colloid bodies," says—"It is probable that these bodies may be the results of *post-mortem* decomposition, and neither they nor the 'amyloid corpuscles' afford trustworthy evidences of disease." On the other hand, Heitzmann, in his recently published "Microscopical Morphology," states—"In the arachnoid of a man whose brain, crowded with these corpuscles, was in the condition of the so-called 'gray atrophy,' I could trace the origin of these from medullary elements which had arisen in the fibrous tissue of the arachnoid in consequence evidently of a slight inflammatory process." The appearances observed in my sections seem to me to point rather to the latter view—*i.e.*, to an *ante-mortem* origin. But whether they are to be considered due to degenerative changes, or to a new deposit, I have but little evidence to offer. As will be seen further on, I have found these so-called "amylaceous corpuscles" in the pons in a second instance of diabetes mellitus, and Dr. Shingleton Smith has recorded their occurrence in the spinal cord of another case. There is no reason, however, to assume that they have any especial relation to this disease.

With regard to Dr. Dickinson's perivascular enlargements, the blood-vessels of these sections generally show a well-defined ensheathing lymph channel. In some cases the space is certainly exaggerated, but nearly always when this occurs there is a tear in the vicinity, which indicates a mechanical alteration of the histological relations.

The second case from which sections were obtained is that now brought before the Academy by Dr. Duffey. The organs examined were the pons, cerebellum, pancreas, mesenteric gland, liver, kidney, lung, and muscles of the left ventricle of the heart. The sections were treated as in the above instances.

Pons and Cerebellum.—A marked turgescence of the vessels is the first thing observable. They are engorged with blood, and the lymph spaces around them are without doubt considerably widened. A few of the blue stained irregular masses are to be seen

peripherally in the pons, in contiguity to the blood-vessels. None are observable in the cerebellum.

Pancreas.—The proper substance of the gland is quite gone, and nowhere are to be found either ducts or alveoli. The mass is made up of loose connective-tissue trabeculæ, with large tracts intervening. These meshes contain groups of large irregular nucleated cells, interspersed with smaller cells and nuclei. The latter are often crowded together, appearing like lymphoid tissue, among the fibres of the trabeculæ. There can be little doubt as to the carcinomatous nature of the growth.

Mesenteric Gland.—Scattered amongst the lymphoid tissue are the same large, irregular nucleated cells, singly or in masses.

Liver.—The liver cells are comparatively small, and the intercellular spaces large. In places there seems an inflammatory increase of the connective tissue.

Kidney.—There is great hypertrophy of the intertubular connective tissue, with dense inflammatory infiltration, and some fatty degeneration in parts. The tubular epithelium appears for the most part unhealthy—sometimes broken up, and often with the nuclei not taking the stain.

Lung.—Portions of hepatised patches of lung were examined. The usual appearances of pneumonia are present, proliferating epithelium, and masses of round cells occluding the alveoli. The blood-vessels are filled with blood-cells or with coagula; but there is no evidence of fatty embolism.

Heart Muscle.—The fibres are rather granular, but without fatty degeneration.

ART. XX.—*Brachial Monoplegia with Anæsthesia.*^a By C. J. NIXON, M.B., LL.D., Dubl.; F.K.Q.C.P.; Senior Physician to the Mater Misericordiæ Hospital.

THE following are the notes of a case of left brachial monoplegia occurring in a patient whom I have the honour of exhibiting to the Section. The case is a remarkable one in some respects, especially in the irregularly distributed area of cutaneous anæsthesia which exists:—

CASE.—Margaret O., aged nineteen, a domestic servant, was admitted into the Mater Misericordiæ Hospital on the 23rd of October last, com-

^a Read before the Medical Section of the Academy of Medicine in Ireland, December 14, 1883.