curring in a fifty-nine-year-old woman with diabetes of twenty years' duration is presented. Her symptoms appeared shortly after institution of insulin therapy. In spite of the extensive motor damage and severe disability due to hyperesthesias, she made a gradual but definite recovery on a regime of a carefully controlled diet, vitamin supplements and therapeutic exercises.

SUMMARIO IN INTERLINGUA

Neuropathia Sciatic Diabetic: Reporto De Un Caso

Es presentate un caso de extense neuropathia sciatic unilateral occurrente in un femina de cinquanta-nove annos de etate qui habeva diabete de un duration de vinti annos. Su symptomas se manifestava brevemente post le institution del therapia a insulina. In despecto de extense damnos motori e de sever grados de invaliditate in consequentia de hyperesthesias, illa se restabliva gradualsed definitemente con un regime de cautemente regulate dieta, vitaminas supplementari, e exercitios therapeutic.

REFERENCES

[1] Bailey, A. A.: Neurological complications associated with diabetes. Diabetes *4*:32-36, 1955.

[2] Goodman, J. I.: Femoral neuropathy in relation to diabetes mellitus. Diabetes *3*:266-73, 1954.

[3] Rundles, R. W.: Diabetic neuropathy. Medicine *24*:111-60, May 1954.

[4] Goodman, J. I., et al.: The Diabetic Neuropathies. Springfield, Ill., Charles C Thomas, 1953, p. 55.

EDITORIALS

PREGNANCY AND DIABETES

Many factors contribute to fetal wastage in diabetes and multiple-part programs ensure the highest possible salvage.

The causes of fetal loss may be classified as three: preventable, unpreventable and those demanding maximum research exploration. The preventable fetal losses include the early spontaneous abortions; the intra-uterine deaths due to ketoacidosis, to toxemia, to polyhydramnios, and to some lesser degrees of vascular insufficiency; the premature losses due to polyhydramnios; and the intrapartum deaths due to the disproportion between the abnormally wide shoulders of the infant and the pelvis.

The unpreventable causes include the extreme degrees of vascular insufficiency, congenital anomalies and the accidents such as knotted cords, placenta previa and ruptured uteri, which would be equally devastating in the general population.

Deserving and currently receiving maximum research exploration are the neonatal losses due to pulmonary hyaline membranes.

No specific agent alone, but many forms of combined therapy increase the chances of fetal survival.

Chemical control of diabetes is the only means of preventing intra-uterine deaths due to ketoacidosis, during which fetal loss approaches 100 per cent. Fetal susceptibility to ketoacidosis is greatest in the second trimester. Patient susceptibility is highest in adult-type diabetes of short duration. Intensification of diabetes in this group, inexperienced in the management of malignant diabetes, may be disastrous. Ketoacidosis may be physiologically induced by the placental production of diabetogenic hormones, but sometimes it is iatrogenically induced by the prescription of diets inadequate in both calories and carbohydrate. Its progress may be checked too slowly by suboptimal insulin therapy. The requirement for insulin in ketoacidosis in pregnancy is disproportionately great compared with the blood glucose level or CO_2 content. Weekly prenatal visits, however, with immediate revision of insulin and dietary regimens guarantee prevention of ketoacidosis.

Sodium restriction and diuretic therapy control the degree of but do not eliminate the occurrence of hydramnios. However, premature deliveries due to early rupture of membranes by polyhydramnios are prevented.

Female sex hormonal therapy is the main defense against spontaneous abortion and some premature deliveries. Its greatest service in diabetic pregnancies is in the prevention of toxemia with its high incidence of intra-uterine deaths. The rates of these accidents in series where such endocrine therapy is used in adequate doses are negligible.

Early timing of the delivery remains an important part of management. It is directed against intra-uterine deaths due to vascular insufficiency in any pregnancy. In the diabetic, three areas are involved. Vascular changes producing obstructive vascular disease are demonstrable in the pelvis, uterus and the placenta. Ab-

normal vasomotor responses, venular dilatation and arteriolar constriction seen in the bulbar conjunctival vessels of diabetics are exaggerated in the pregnant diabetic. Similar changes in uterine, placental and pelvic vessels are inferred. Although poorly judged timing and errors in dates may turn intra-uterine into neonatal deaths, early timed deliveries have lowered viable mortality rates.

Pelvic deliveries are admittedly desirable, but failure of progress after induction, late diagnosis of disproportion, and breech presentation indicate the need for cesarean section. Such programs eliminate intrapartum deaths completely.

In part because of prematurity, in part because of cesarean sections, but mostly because of diabetes, pulmonary hyaline membranes are the most important cause of morbidity and mortality in the neonatal period. The early time of appearance of symptoms and signs suggests a prenatal influence; the demonstration that the protein is fibrin suggests an intravascular origin.

The 3 per cent mortality due to congenital anomalies can perhaps be lowered by avoiding such causes of anoxia as acidosis and hypoglycemia. Prevention of those due to chronic vascular insufficiency will depend upon the preservation of better vascular states prior to pregnancy onset.

Much confusion exists today because of exaggerated claims. These are largely two: one that good treatment of diabetes alone guarantees fetal survival; or, two, that female sex hormones guarantee salvage in spite of poor control of diabetes, late timing of delivery and omission of a diuretic program.

Constant supervision and dietary control in revealed prediabetes has given a fetal salvage higher than that of the general population. The combination of chemical control of diabetes with diet and insulin, the use of diuretics, the use of female sex hormones, early timing of the delivery and immediate care of the newborn infant has resulted in nondiabetic salvage in Class B patients (adult at onset, short-term without vascular lesions). As maternal vascular lesions progress, fetal salvage decreases until in cases with the severest grade, nephropathy (Class F), fetal salvage occurs in only half the patients.

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THE "KIMMELSTIEL-WILSON LESION"

Over twenty years ago Kimmelstiel and Wilson[1] described, in the kidneys of diabetics, nodular glomerular lesions which have come to be known as "intercapillary glomerulosclerosis" or "Kimmelstiel-Wilson lesions." Further clarification and indications that these changes might be specific for diabetes came from the studies of Allen,[2] Robbins et al.[3] and many others. A "diffuse" glomerular lesion, sometimes associated with, and possibly preceding the nodular, has been described by Bell[4] and has been given increasing recognition in recent years. However, although recent studies[5] suggest that the diffuse lesion may be more closely related to clinical symptoms than the nodular, it must be emphasized that the term "Kimmelstiel-Wilson lesion" is properly applied only to the classical nodular lesion described by the original authors.

In the past six years there has been a revival of interest in another type of lesion, not specific for diabetes and probably of minor importance, which was described, in at least one form, by the original authors[1] but not emphasized by them. This has been called "the exudative lesion" by British workers[6,7] and has also been described in some detail by Koss[8] and Barrie et al.[9] It consists of a mass of homogeneous "fibrinoid" material, differing in texture, tinctorial qualities and location from the classical hyaline nodular lesion of Kimmelstiel and Wilson.[10] It is characteristically located either in the lumen of a capillary or in the capsular space, in contrast to the Kimmelstiel-Wilson lesion, which is intercapillary or intramural, depending on one's concepts of the "mesangium," intercapillary space and basement membrane of the glomerulus. The exudative lesion can be distinguished in the electron microscope by its density as well as its location.[11] It is usually a late or terminal phenomenon in diabetic nephropathy and is clearly nonspecific for diabetes, since typical examples can be found in other diseases, such as chronic glomerulonephritis.[12]

The nodular and exudative lesions resemble each other only superficially in that each appears as a mass of eosinophilic material; otherwise, as indicated above, they are quite different. Unfortunately, perhaps, for readers who are not accustomed to looking at histological sections of diabetic kidneys, a clear distinction between the two is not always made in current literature. For instance, it is stated that "Kimmelstiel-Wilson type lesions" were found in a series of nondiabetics and that this constitutes evidence that "the Kimmelstiel-Wilson lesion is not absolutely specific for diabetes mellitus"[13] whereas in fact the illustrations and descriptions presented refer to the exudative lesion and not the nodular lesion of the original authors.

Further difficulty occasionally arises in the description

of lesions induced in the kidneys of rabbits by large doses of cortisone or related steroids, when, for example, it is said that the lesions "resemble those of human diabetic glomerulosclerosis,"[14] whereas the lesions induced by these steroids are clearly of the nonspecific exudative type[15] and have not been shown to have any definite relation to diabetes. Indeed, superficial resemblances between the cortisone-induced and the human diabetic lesion seem to have been largely responsible for speculations, now increasingly doubted,[16] concerning a possible role of the adrenal cortex in the pathogenesis of renal disease in diabetes. It is, of course, conceivable that the exudative lesion in man may in fact be associated with adrenal cortical activity and yet have no direct relation to diabetes.

There are thus three glomerular lesions which may be found in the diabetic kidney (to say nothing of the commonly present arteriolar sclerosis and pyelonephritis) which need to be clearly differentiated both histologically and semantically if confusion is not to arise.

REFERENCES

[1] Kimmelstiel, P., and Wilson, C.: Intercapillary lesions in the glomeruli of the kidney. Am. J. Path. *12*:83, 1936.

[2] Allen, A. C.: So-called intercapillary glomerulosclerosis—a lesion associated with diabetes mellitus. Arch. Path. *32*:33, 1941.

[3] Robbins, S. L., Rogers, J., and Wollenman, O. J., Jr.: Intercapillary glomerulosclerosis. A clinical and pathologic study. III. A pathologic study of 100 cases. Am. J. Med. *12*:700, 1952.

[4] Bell, E. T.: Renal vascular disease in diabetes mellitus. Diabetes *2*:376, 1953.

[5] Gellman, D. D., Pirani, C. L., Soothill, J. F., Muehrcke, R. C., Maduros, W., and Kark, R. M.: Structure and function in diabetic nephropathy: The importance of diffuse glomerulosclerosis. Clinical Research *6*:293, 1958.

[6] Hall, G. F. M.: The significance of atheroma of the renal arteries in Kimmelstiel-Wilson's syndrome. J. Path. & Bact. *64*:103, 1952.

[7] Anderson, G. S.: The pathogenesis of diabetic glomerulosclerosis. J. Path. & Bact. *67*:241, 1954.

[8] Koss, L. G.: Hyaline material with staining reaction of fibrinoid in renal lesions in diabetes mellitus. Arch. Path. *54*: 528, 1952.

[9] Barrie, H. J., Aszkanazy, C. L., and Smith, G. W.: More glomerular changes in diabetics. Canad. M.A.J. *66*:428, 1953.

[10] Muirhead, E. E., Montgomery, P. O'B., and Booth, E.: The glomerular lesions of diabetes mellitus. Arch. int. med. *98*: 146, 1956.

[11] Farquhar, M. G., Hopper, J., Jr., and Moon, H. D.: Diabetic glomerulosclerosis: electron and light microscopic studies. (In press).

[12] LeCompte, P. M.: Vascular lesions in diabetes mellitus. J. Chronic Dis. *2*:178, 1955.

[13] Raphael, S. S., and Lynch, M. J. G.: Kimmelstiel-Wilson glomerulonephropathy. Arch. Path. *65*:420, 1958.

[14] Bencosme, S. A., Wilson, D. L., and Rosen, D. A.: Glomerular lesions produced in the rabbit by prednisone and prednisolone. Arch. Path. *65*:340, 1958.

[15] Bloodworth, J. M. B., Jr., and Hamwi, G. J.: Experimental diabetic glomerulosclerosis. Diabetes *5*:37, 1956.

[16] Rifkin, H., Solomon, S., and Lieberman, S.: Role of the adrenal cortex in diabetic retinopathy and nephropathy. Diabetes *7*:9, 1958.

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In 1901 Eugene L. Opie, then twenty-eight years of age, first reported the pathological lesions of the islands of Langerhans in diabetic man. His published papers were titled "The Relations of Chronic Interstitial Pancreatitis to the Islands of Langerhans and to Diabetes Mellitus"[1] and "The Relation of Diabetes Mellitus to Lesions of the Pancreas: Hyaline Degeneration of the Islands of Langerhans."[2] These have become accepted as classics in the scientific literature of diabetes and are associated in the minds of investigators in this field as the sequels to the paper of von Mehring and Minkowski[3] in 1890 on the relationship between the pancreas and diabetes and as the precursors of Banting and Best's famed paper announcing the discovery of insulin in 1922.[4]

Eugene Opie's interest in the islands of Langerhans was stimulated by his curiosity during his student days at Johns Hopkins. In Opie's own account written in an article titled "The Peripatetic Education of a Pathologist"[5] he states, "During the laboratory course in pathology I found in a class section of the pancreas a strange body which I showed to Dr. Welch when he made his unhurried round of the class. He told me it was an island of Langerhans described in an inaugural dissertation.

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