A[100]Buck, A. C., Reed, P. I., Siddiq, Y. K., Chisholm, G. D., and Fraser, T. R.: Bladder dysfunction and neuropathy in diabetes. Diabetologia *12*:251-58, 1976.

[101]Frimodt-Moller, C.: Diabetic cystopathy. I. A clinical study of the frequency of bladder dysfunction in diabetics. Dan. Med. Bull. *23*:267-78, 1976.

[102]Ellenberg, M., and Weber, H.: The incipient asymptomatic diabetic bladder. Diabetes *16*:331-35, 1967.

[103]Andersen, J. T., and Bradley, W. E.: Early detection of diabetic visceral neuropathy. An electrophysiologic study of bladder and urethral innervation. Diabetes *25*:1100-05, 1976.

[104]Larcan, A., Huriet, C., Vaillander, M., and Fauchier, J. P.: Étude cystomanométrique de la vessie du diabétique. Diabète *11*:339-41, 1963.

[105]Ewing, D. J., Campbell, I. W., and Clarke, B. F.: Mortality in diabetic autonomic neuropathy. Lancet *1*:601-03, 1976.

[106]Ellenberg, M.: Diabetic neuropathy: clinical aspects. Metabolism *25*:1627-55, 1976.

[107]Ellenberg, M.: Diabetic complications without manifest diabetes. Complications as presenting clinical symptoms. J.A.M.A. *183*:926-30, 1963.

[108]Ellenberg, M.: Diabetic neuropathy following stress situations. Am. J. Med. Sci. *238*:418-26, 1959.

[109]Balfour, J., and Ankenman, G. J.: Atonic neurogenic bladder as a manifestation of diabetic neuropathy. J. Urol. *76*:746-52, 1956.

[110]Greene, L. F., Kelalis, P. P., and Weeks, R. E.: Retrograde ejaculation of semen due to diabetic neuropathy. Fertil. Steril. *14*:617-25, 1963.

[111]Ellenberg, M., and Weber, H.: Retrograde ejaculation in diabetic neuropathy. Ann. Intern. Med. 65:1237-46, 1966.

[112]Kolodny, R. C.: Sexual dysfunction in diabetic females. Diabetes *20*:557-59, 1971.

[113]Ellenberg, M.: Female sexuality in the diabetic. Mt. Sinai J. Med. N.Y. *44*:495-500, 1977.

[114]Rubin, A., and Babbott, D.: Impotence and diabetes mellitus. J.A.M.A. *168*:498-500, 1958.

[115]Schoffling, K., Federlin, K., Ditschuneit, H., and Pfeiffer, E. F.: Disorders of sexual function in male diabetics. Diabetes *12*:519-27, 1963.

[116]Weiss, H. D.: The physiology of human penile erection. Ann. Intern. Med. *76*:793-99, 1972.

[117]Simpson, S. L.: Impotence. Br. Med. J. *1*:692-97, 1950.

[118]Fisher, C., Gross, J., and Zuch, J.: A cycle of penile erection synchronous with dreaming (REM) sleep. Arch. Gen. Psychiatry *12*:29-45, 1965.

[119]Karacan, I., Goodenough, D. R., Sapiro, A., and Starker, S.: Erection cycle during sleep in relation to dream anxiety. Arch. Gen. Psychiatry *15*:183-89, 1966.

[120]Karacan, I.: A simple and inexpensive transducer for quantitative measurements of penile erection during sleep. Behav. Res. Methods Instrum. *1*:251-52, 1961.

[121]Fisher, C., Schiavi, R., Lear, H., Edwards, A., Davis, D. M., and Witkin, A. P.: The assessment of nocturnal REM erection in the differential diagnosis of sexual impotence. J. Sex. Mar. Therap. *1*:277-89, 1975.

[122]Karacan, I., Scott, F. B., Salis, P. J., Attia, S. L., Ware, J. C., Altinel, A., and Williams, R. L.: Nocturnal erections, differential diagnosis of impotence and diabetes. Biol. Psychiatry *12*:373-80, 1977.

[123]Cooper, A. J.: Guide to treatment and short term prognosis of male potency disorders in hospital and general practice. Br. Med. J. *1*:157-59, 1970.

[124]Kent, J. R.: Gonadal function in impotent diabetic males. Diabetes *15*:537, 1966.

[125]Faerman, I., Vilar, O., Rivarola, M. A., Rosner, J. M., Jadzinsky, M. N., Fox, D., Lloret, A. P., Bernstein-Hahn, L., and Saraceni, D.: Impotence and diabetes. Studies of androgenic function in diabetic impotent males. Diabetes *21*:23-30, 1972.

[126]Wright, A. D., London, D. R., Holder, G., Williams, J. W., and Rudd, B. T.: Luteinizing release hormone tests in impotent diabetic males. Diabetes *25*:975-77, 1976.

[127]Lash, H., Zimmerman, D. C., and Loeffler, R. A.: Silicone implantation: inlay method. Plast. Reconstr. Surg. *34*:75-80, 1964.

[128]Pearman, R. O.: Treatment of organic impotence by implantation of a penile prosthesis. J. Urol. *97*:716-19, 1967.

[129]Scott, F. B., Bradley, W. E., and Timm, G. W.: Management of erectile impotence: use of implantable inflatable prosthesis. Urology *2*:80-82, 1973.

[130]Furlow, W. L.: Surgical management of impotence using the inflatable penile prosthesis. Mayo Clin. Proc. *51*:325-28, 1976.

[131]Andaloro, V. A., and Dube, A.: Treatment of retrograde ejaculation with brompheniramine. Urology *5*:520-22, 1975.

[132]Budd, H. A.: Brompheniramine in treatment of retrograde ejaculation. Urology *6*:131, 1975.

[133]Walters, D., and Kaufman, M. S.: Sterility due to retrograde ejaculation of semen: report of pregnancy achieved by autoinsemination. Am. J. Obstet. Gynecol. *78*:274-75, 1959.

ABSTRACTS

(All are verbatim summaries)

Smith, B. (Dept. of Pathol., St. Bartholomew's Hosp., London, England): NEUROPATHOLOGY OF THE OESOPHAGUS IN DIABETES MELLITUS. J. Neurol. Neurosurg. Psychiatry *37*:1151-54, 1974.

Abnormalities of the innervation of the oesophagus have been shown in 18 out of 20 unselected diabetics without clinical dysphagia or neuropathy. The changes appear to be in the axons of the extrinsic and intrinsic parasympathetic fibres. It is probable that, as in the peripheral nerves, the major changes are in the Schwann cells, although here the affected fibres are unmyelinated.

Appenzeller, O.; and Richardson, E. P., Jr. (Depts. of Pathol. and Neurol.-Neuropathol., Harvard Med. Sch., and the Charles S. Kubik Lab. for Neuropathol. of the James Homer Wright Pathol. Lab., Mass. Gen. Hosp., Boston): THE SYMPATHETIC CHAIN IN PATIENTS WITH DIABETIC AND ALCOHOLIC POLYNEUROPATHY. Neurology *16*:1205-09, 1966.

Autonomic function may be defective in patients with diabetic and alcoholic neuropathy. Thus, reflex circulatory adjustments which occur after sudden changes in posture and depend on sympathetically mediated vasoconstriction are impaired in some patients with these disorders. Thus far, however, no systematic investigation has been undertaken in an attempt to correlate these functional deficits with the morphological appearance of the autonomic ganglia or nerves. The present study is based upon an examination of sympathetic chains obtained at autopsy in patients dying at the Massachusetts General Hospital. They all had a well-documented history of diabetes mellitus or chronic alcoholism, and some of them had a complicating polyneuropathy.

Bennett, T.; Hosking, D. J.; and Hampton, J. R. (Dept. of Physiol., Nottingham Univ. Med. Sch., and Dept. of Med., Gen. Hosp., Nottingham, England): CARDIOVASCULAR CONTROL IN DIABETES MELLITUS. Br. Med. J. *2*:585-87, 1975.

Heart rate variability and the changes in heart rate and blood pressure which occur on standing were measured in 21 diabetics. These simple measures distinguished four groups of patients, with loss of parasympathetic activity being commoner than loss of sympathetic activity.

Bennett, T.; Hosking, D. J.; and Hampton, J. R. (Dept. of Physiol., Nottingham Univ. Med. Sch., and Dept. of Med., Gen. Hosp., Nottingham, England): BAROREFLEX SENSITIVITY AND RESPONSES TO THE VALSALVA MANOEUVRE IN SUBJECTS WITH DIABETES MELLITUS. J. Neurol. Neurosurg. Pschiatry *39*:178-83, 1976.

Baroreflex sensitivity was measured in a group of diabetic patients from the slope of the regression of pulse interval on systolic arterial pressure, during elevation of pressure induced by phenylephrine. The response to Valsalva's manoeuvre was assessed in the same subjects. There was a good correlation between the two tests in the identification of patients with a parasympathetic autonomic disturbance, but measurements of baroreflex sensitivity were more readily quantifiable than were the responses to Valsalva's manoeuvre. Furthermore, baroreflex sensitivity could be measured in patients with sympathetic nervous dysfunction in whom vagal function could not be assessed by means of the Valsalva manoeuvre. Measurement of baroreflex sensitivity is likely to be suitable for longitudinal studies of the progress of diabetic autonomic neuropathy.

Bennett, T.; Hosking, D. J.; and Hampton, J. R. (Dept. of Physiol., Univ. Hosp. and Med. Sch., and the Dept. of Med., Gen. Hosp., Nottingham, England): CARDIOVASCULAR REFLEX RESPONSES TO APNOEIC FACE IMMERSION AND MENTAL STRESS IN DIABETIC SUBJECTS. Cardiovasc. Res. *10*:192-99, 1976.

The cardiovascular reflex responses to apnoea accompanied by immersion of the face in water and to mental stress, have been investigated in 21 diabetic subjects. Apnoeic face immersion caused bradycardia and forearm vasoconstriction (in seven subjects), bradycardia and forearm vasodilatation (three subjects), tachycardia and forearm vasoconstriction (three subjects), or tachycardia and forearm vasodilatation (eight subjects). Mental stress evoked a tachycardia and forearm vasodilatation in all subjects. The abnormalities in the responses to apnoeic face immersion are the most readily accounted for by loss of vagal and/or vasoconstrictor function.

Malins, J. M.; and Mayne, N. (Diabetic Clinic, Gen. Hosp., Birmingham, England): DIABETIC DIARRHEA. A STUDY OF THIRTEEN PATIENTS WITH JEJUNAL BIOPSY. Diabetes *18*:858-66, 1969.

Thirteen diabetic patients with chronic diarrhea have been studied clinically and subjected to jejunal biopsy. Eleven conformed to the accepted clinical picture of "diabetic diarrhea," all showing evidence of gross neuropathy, and a normal jejunal mucosa was found in every case. The other two were found to have a flat jejunal biopsy; in one, celiac disease had been diagnosed at the age of two, but in the other there was no remote history of gastrointestinal disorder. The diagnosis of "diabetic diarrhea" is one of exclusion, and there is no single feature that can be regarded as diagnostic. The nature of the diarrhea is uncertain, but the response to antibiotics in some patients suggests an abnormal colonization of bacteria in the intestine, though this cannot be demonstrated. The association of diarrhea with diabetic neuropathy is strong.

Campbell, I. W.; Heading, R. C.; Tothill, P.; Buist, T. A. S.; Ewing, D. J.; and Clarke, B. F. (Diabetic and Dietetic Dept., Univ. Depts. of Therapeutics, Med. Physics, and Med., and Dept. of Radiol., The Royal Infirmary, Edinburgh, Scotland): GASTRIC EMPTYING IN DIABETIC AUTONOMIC NEUROPATHY. Gut *18*:462-67, 1977.

Gastric emptying was studied in 12 diabetic patients, six with and six without objective evidence of autonomic neuropathy and in 20 non-diabetic controls, using a double isotope scintiscanning technique which differentiated between solid and liquid emptying. Three patients with autonomic neuropathy exhibited gastric stasis, although this was detected by conventional radiology in only one. Neither the patients with stasis nor those without exhibited abnormally rapid early gastric emptying. In patients without stasis, the normal differentiation between solid and liquid emptying was impaired, suggesting an abnormality of antral peristalsis not attributable to vagal denervation. Both intravenous and oral metoclopramide produced symptomatic improvement in two patients with gastric stasis and restored their gastric emptying to normal.

Buck, A. C.; Reed, P. I.; Siddiq, Y. K.; Chisholm, G. D.; and Fraser, T. R. (Depts. of Surg. and Med., Royal Postgrad. Med. Sch., Hammersmith Hosp., London, England): BLADDER DYSFUNCTION AND NEUROPATHY IN DIABETES. Diabetologia *12*:251-58, 1976.

Established urodynamic and electrophysiological techniques have been applied to assess the frequency and extent of autonomic and peripheral neuropathy in 60 subjects with diabetes mellitus; 38 were diabetics with suggestive symptoms and the others were representative newly diagnosed (11) or treated (11) diabetics. Objective evidence of neuropathic bladder dysfunction was detected in 43 of them (71.7%). The commonest abnormality was a hypotonic, insensitive large capacity bladder, which condition was usually asymptomatic. Less frequently (15%) this was complicated by bladder decompensation and sphincter involvement, resulting in excessive residual urine and infection; some of these had bladder paralysis with chronic painless retention of urine (7%). Electrophysiological studies found a sensory defect in the lower limbs in all tested patients (100%), and in 41 patients (69%) an associated motor conduction abnormality, which was more frequent and marked in the lower than the upper limb. These functional abnormalities appeared to be related to the severity of diabetes, but less to its duration. Indeed of 11 newly diagnosed diabetics tested 7 had a peripheral neuropathy and 4 urodynamic abnormalities. The high incidence of bladder dysfunction and peripheral neuropathy in this series indicates the frequency of subclinical diabetic neuropathy and a factor needing more emphasis in diabetic uropathy.