The annual meeting of the British Society of Gastroenterology

The annual general meeting of the British Society of Gastroenterology was held in Birmingham on 3 and 4 November 1961 under the Presidency of Dr. E. Bulmer, with Dr. J. M. French as the local secretary.

The following elections were made for 1962: President, Hermon Taylor; Secretary, H. A. Magnus; Treasurer, G. D. Hadley; and Council Member, A. W. Kay. The following were elected to the ordinary membership: A. P. Dick, J. W. P. Guummer, R. O. K. Schade, and A. Wynn Williams. The following were elected as associate members: A. R. Anscombe, E. L. Blair, S. D. Clarke, A. G. Cox, H. Ellis, F. R. Johnson, A. G. Parks, W. A. Scott-Harden, T. Scratherd, C. Shaldon, R. G. Shorter, W. P. Small, F. G. Smiddy, A. N. Smith, H. B. Torrance, M. D. Turner, and E. J. Williams.

A number of scientific demonstrations was shown in the Medical School, Queen Elizabeth Hospital, and at the Metabolic Unit, Little Bromwich Hospital.

SCIENTIFIC COMMUNICATIONS

GASTRO-INTESTINAL RADIOLOGY IN CHILDREN

ROY ASTLEY (CHILDREN’S HOSPITAL, BIRMINGHAM) discussed gastrointestinal radiology in children and illustrated his points by cineradiography.

SELECTIVE PANCREATIC ANGIOGRAPHY

J. P. McMullin, introduced by O. Fitzgerald (DUBLIN), described an attempt to obtain specific information on pancreatic anatomy and pathology by means of angiography. In order to obtain a more selective angiogram than could be obtained by aortography, or by retrograde catheterization of the coeliac axis, pre-operative injection of radio-opaque dye into the gastro-duodenal artery had been carried out in a number of cases.

At operation in cases of suspected pancreatic dysfunction the hepatic artery and the gastro-duodenal artery are identified and exposed. The gastro-duodenal artery is isolated and a polythene tube is inserted distally. Fifteen ml. of 60% Hypaque is injected into the polythene tube and radiographs are taken at five seconds and 25 seconds.

A series of films was shown demonstrating the results obtained by this technique in normal and abnormal states and comparisons made with standard tests of pancreatic function in the same cases.

CYTOLOGY OF THE BILE DUCT IN LABORATORY ANIMALS AND IN MAN

R. H. McMinn and F. R. Johnson (LONDON HOSPITAL) Various histochemical studies were carried out on the epithelium and glands of the lower end of the bile duct in the rat, guinea-pig, cat, dog, Rhesus monkey, and man. These studies were supplemented by autoradiography using S35 in vivo and/or in vitro, and in the first four species mentioned, by electron microscopy.

The ducts of all species were found to be capable of secreting protein-carbohydrate complexes, some of which was mucin of the sulphated variety. In the rat the secretion came from goblet cells but in the other species it was derived both from surface epithelium and from alveolar glands. All the epithelium and glands examined gave a strong reaction for the enzyme succinic dehydrogenase, suggesting high metabolic activity and the presence of mitochondria. This was confirmed by the electron microscope which revealed numerous mitochondria, especially in the supranuclear cytoplasm. Among other ultrastructural features were microvilli, prominent at the luminal surface of the lining cells, and numerous vesicles of a secretory and/or absorptive nature.

The findings suggested that the epithelium is actively concerned in transport mechanisms.

RECURRENT ULCERATION FOLLOWING OPERATIVE TREATMENT

W. P. SMALL (WESTERN GENERAL HOSPITAL, EDINBURGH) Nine hundred and one patients, suffering from peptic ulceration and operated upon in the Western General Hospital between 1947 and 1957, have been followed up at the gastric clinic, 900 being traced.

Within this group, those patients either admitted with established recurrent ulceration or developing such ulceration during or since the period of review have been intensively studied. The completeness of the follow-up permits worthwhile conclusions.

Jejunal ulceration occurs most frequently in blood group O patients and at varying periods after the initial operation. Comparison of the intervals between recurrence of symptoms and subsequent operation shows that jejunal ulceration leads the patient to seek earlier operative relief after Polya gastrectomy than after gastro-enterostomy. This indicates that jejunal ulcer is more troublesome and more acute when complicating gastrectomy and that it is possible to delay treatment, often for many years, when the preceding operation has been a gastro-enterostomy.

The problem of diagnosis of recurrent ulcer has been
studied in conjunction with the modes of clinical presentation. Contrary to accepted teaching, radiological investigation has been shown to be of considerable value.

The surgical treatment of established jejunal ulceration is on the whole disappointing and not nearly so effective as the primary treatment for duodenal ulcer. Jejunal ulceration poses fresh difficulties at present insufficiently recognized and demanding a new approach to the problem.

Study of those cases in which the results of the maximal histamine secretion test are available shows that, whereas recurrent ulceration is due in some cases to persisting hypersecretion, in others additional factors must be responsible. These factors, influencing the resistance of the individual and determining the success or failure of treatment, have previously received only fleeting recognition and merit further study.

THE PROGNOSIS OF BILIARY STRicture
M. D. TURNER AND S. SHERLOCK (ROYAL FREE HOSPITAL, LONDON) Thirty-six patients with a stricture of the bile duct system were seen in a medical department over a period of 15 years. Twenty-five were women and 11 were men. In 31 instances the stricture followed an operation on the biliary tract, usually cholecystectomy. One resulted from a gastrectomy, one from a superior mesenteric-caval venous anastomosis, two appeared to be due to gall stones, and in one the cause was not determined. Seventy-two operations were performed on these patients in attempts to cure the condition. Thirteen patients were apparently cured and were followed for periods ranging from three months to 15 years. Thirteen patients suffered from recurrent cholangitis, three from persistent jaundice. Two had persistent external biliary fistulae and in five the result is unknown.

Signs of cirrhosis developed after at least two years of persistent jaundice or recurrent cholangitis. Eight patients died, three immediately after operation designed to relieve the stricture, and five from five to eight years after production of the stricture from liver failure and its complications; the stricture had never been completely relieved. The higher the site of the stricture in the biliary system the worse the prognosis.

SYMPOSIUM ON SMALL INTESTINAL MOTILITY

PHYSIOLOGY AND METHODOLOGY
E. N. ROWLANDS (CENTRAL MIDDLESEX HOSPITAL, LONDON) reviewed the physiology and methodology employed in the study of gastrointestinal motility.

FILM: IMPAIRED MOTILITY IN THE PHARYNX AND OESOPHAGUS
G. M. ARDRAN AND F. H. KEMP (NUFFIELD INSTITUTE FOR MEDICAL RESEARCH AND RADCLIFFE INFIRMARY, OXFORD) Radiology is a valuable method for the study of impairment of the pharyngeal expiratory mechanism during swallowing: impairment often results in incomplete expression of the bolus. The causes of pharyngeal residues were briefly reviewed and examples shown. One cause of residue which is frequently unrecognized is associated with the presence of small lateral pharyngeal diverticula: these are demonstrable in approximately 50% of individuals over the age of 50, and are not infrequently seen in younger age groups. If these diverticula do not readily empty their contents, they may cause symptoms.

The normal oesophageal expiratory mechanisms are the primary and secondary peristaltic contractions: these cease at the lower limit of the inferior sphincter. Supradiaphragmatic pouches are functionally oesophagi if the oesophageal contraction wave passes through them. Regurgitation of liquid from below can only occur if the contents cover the lower oesophageal opening, and is normal when the lower sphincter relaxes under these conditions. Regurgitated material is then expressed by the oesophageal expiratory waves: if they are impaired, the gastric contents remain in the oesophagus. Thus an important factor in the aetiology of reflux oesophagitis is failure of the normal expiratory mechanism.

INNERVATION OF CARDIA AND LOWER OESOPHAGUS
J. R. TROUNCE (GUY'S HOSPITAL, LONDON) It is generally held that the lower oesophagus and gastric-oesophageal junction is supplied by branches of the vagus nerve usually arising just below the lung root and forming the oesophageal plexus. These are joined by filaments from the greater splanchnic and para-aortic nerves, and perhaps higher up by a few branches direct from the thoracic ganglia.

Using strips of muscle removed at operation, and recording their response to drugs and to electrical stimulation, the pattern of innervation of the lower oesophagus was delineated. Briefly, the motor supply to the oesophagus is cholinergic; at the cardia there is, in addition, evidence of a nerve supply which, on stimulation, produces relaxation of the circular muscle and is probably adrenergic.

The pathways which subserve various oesophageal functions in man are not known as it is not possible in the human to cut the nerves supplying the oesophagus and observe the results. However, section of these nerves...
does occasionally occur either when denervation is carried out for some other reason or by disease. The results of this type of observation allow a tentative picture of the part played by the various nerves supplying the oesophagus to be constructed.

GASTRIC EMPTYING

J. N. HUNT (GUY'S HOSPITAL, LONDON) The results of unpublished experiments were presented showing: (1) With meals which leave the stomach slowly the 45° head-down Trendelenburg position does not slow gastric emptying. With meals which leave the stomach quickly emptying is slowed. (2) Meals containing fatty acids slow gastric emptying but such meals have no action on other types of meals given immediately afterwards. Presumably the slowing of emptying is not mediated via a hormone or the hormone is very rapidly destroyed.

The significance of these data in relation to the receptors controlling gastric emptying was considered.

EXPERIMENTAL STUDIES ON THE CONTROL OF INTESTINAL MOTILITY IN MAN

A. M. CONNELL (CENTRAL MIDDLESEX HOSPITAL, LONDON) The mechanisms which coordinate the movements of different parts of the intestinal tract are little understood. In this paper some of the nervous factors which affect intestinal coordination were reviewed and results presented of experimental work on the gastro-ileo-colic reflexes and the influence of the central nervous system on colonic motility.

THE EFFECT OF MORPHINE IN DIVERTICULOSIS OF THE COLON

NEIL S. PAINTER (RADCLIFFE INFIRMARY, OXFORD) In the course of investigations into the intraluminal pressures of the sigmoid colon of patients with diverticulosis coli, the opportunity was taken to study the effect of morphine on these pressures. In addition, simultaneous cineradiography was used to show the actual movements of the colon. Under basal conditions the intraluminal pressure patterns were virtually identical in the normal sigmoid colon and that affected by diverticulosis. Morphine increased the number of pressure waves in the sigmoid and those segments of the colon bearing diverticula reacted excessively to the drug and produced high waves of pressure. Simultaneous cineradiography showed that the diverticula remained in connexion with the bowel lumen when these waves of very high pressure occurred.

It is therefore concluded that morphine should not be administered to patients with acute diverticulitis because it may predispose to perforation. Pethidine does not have this effect and is a suitable analgesic for use in acute diverticulitis.

THE ABSORPTION OF AMINO-ACIDS FROM A CASEIN PREPARATION: STUDIES IN MAN

R. H. GIRDWOOD AND J. RICHMOND (EDINBURGH ROYAL INFIRMARY) A casein preparation was given by mouth to control subjects and to patients with primary malabsorptive disease (idiopathic steatorrhoea), pancreatic insufficiency, hepatic cirrhosis, and to a group after partial gastrectomy. The levels of certain free amino-acids were measured microbiologically in the plasma and urine, and alpha amino nitrogen was measured in the plasma. There was no evidence of impaired amino-acid absorption in primary malabsorption disease. The other results were discussed, and reference was made to intravenous clearance tests.

INVESTIGATION OF PROTEIN ABSORPTION IN NORMAL SUBJECTS AND PATIENTS WITH MALABSORPTION USING 15N LABELLED YEAST PROTEIN

C. W. CRANE (BIRMINGHAM) Little difference appeared to exist in the rates of absorption of whole yeast protein and an enzymic hydrolysate of this material when fed to normal subjects after an overnight fast. Elimination of the isotope in the urine over the following three days was remarkably constant but the amount of isotope excreted in the faeces was more variable.

In patients with idiopathic steatorrhoea, a marked delay compared with normal subjects was found when whole protein was fed but this delay was less when the hydrolysate was given. The amount of isotope excreted in the faeces was greater than in normal subjects.

Two patients have been re-examined after successful treatment with a gluten-free diet. After eight months, the faecal excretion of isotope over six days after giving labelled protein, initially high, was found to have returned to within normal limits in one patient but a slight delay in the absorption of the protein remained unchanged. After two years' treatment, both faecal excretion of isotope and the rate of uptake of labelled protein were found in the second patient to have returned to normal. The jejunal biopsies of both patients showing complete villous atrophy remained unaffected by the diet.

THE EFFECT OF FAT ON PROTEIN ABSORPTION

K. N. JEEJEEBHOOY, C. G. BOOTH, AND N. F. COGHILL (POSTGRADUATE MEDICAL SCHOOL OF LONDON AND THE WEST MIDDLESEX HOSPITAL) Studies of the effect of increasing amounts of triolein on the rate and site of absorption of 131I-labelled human serum albumin were carried out in rats. The results indicated that the labelled material was absorbed more slowly and absorption occurred more distally on the small intestine when fat was given, suggesting that fat may interfere with the absorption of albumin.
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The limitations of 131I-labelled albumin in such studies were described.

Further observations were made using albumin and amino-acids labelled with 3H. The results indicate that fat may influence protein absorption but not the absorption of amino-acids. The results of nitrogen balance in patients with a lesion of the small intestine were also presented.

THE RATE OF ABSORPTION AND FATE OF ORAL RADIO-IODINATED FAT

D. A. W. EDWARDS AND ANN E. JOHNSON (UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL AND CENTRAL MIDDLESEX HOSPITAL, LONDON) The rate of absorption of oral radio-iodinated triolein from the moment of ingestion, and the distribution in the body of the absorbed radioactivity, were measured by external body counting. Approximately 75% is normally absorbed within 25 minutes and the rate of absorption is sufficiently slower in some malabsorptive states for the method to be potentially useful as a screening test, except in post-gastrectomy steatorrhoea where the rate is normal. Approximately 70% of the absorbed radio-iodinated triolein is de-iodinated within a few minutes of absorption. The remaining radioactivity is stored in adipose tissue with a biological half-life of the order of months.

STUDIES ON THE EFFECT OF VAGOTOMY ON ABSORPTION IN MAN

A. G. COX, B. ROSS, AND A. W. KAY (SHEFFIELD ROYAL INFIRMARY) Absorption studies made before and after vagotomy in human subjects were presented. These included (i) faecal fat excretion before, a few weeks after, and one year after the operation; and (ii) the absorption of intrajejunally fed glucose, Na131I, and D-xylose measured before, 18 hours, and one week after operation. These studies were combined with observations on the use of a radio-telemetering capsule to assess intestinal motility changes immediately after vagotomy.

THE ROLE OF THE HIATUS IN THE CONTROL OF REFLUX

D. A. W. EDWARDS (UNIVERSITY COLLEGE HOSPITAL MEDICAL SCHOOL AND CENTRAL MIDDLESEX HOSPITAL, LONDON) The theory, described by Creamer and Pierce, that reflux is normally controlled by the difference between intra-abdominal and intra-thoracic pressure, which closes the flaccid oesophageal tube as it passes through a slit opening in the diaphragm, may apply in hiatus hernia. The stomach then acts as a flaccid tube so that (i) the loculus does not always fill from below, and (ii) intralocular pressure is not always as high as intra-abdominal. In the normal, the cardiac sphincter obliterates the oesophageal lumen within the abdomen so that the pressure gradient mechanism may work effectively. The sphincter cannot withstand intra-abdominal pressure so that in hiatus hernia reflux occurs when intralocular pressure approaches intra-abdominal. The hiatus controls the extent and rate of transference of intra-abdominal pressure to the loculus but does not compress the gut tube.