Pancreatic Society of Great Britain and Ireland

The 14th annual meeting of the Pancreatic Society of Great Britain and Ireland was held at the General Infirmary, Leeds on 17 November 1989. The president for the meeting was Mr Michael McMahon and the Lility guest lecturer was Dr Paul G Lankisch from Luneburg, West Germany. The Rodney Smith prize for the best paper went to Mr R Sutton (Oxford) for his work on the function of pancreatic islet autografts. Selected abstracts are published below.

Teenage pancreatitis—Is it a separate entity? J E TRAPNELL (Royal Victoria Hospital, Boscombe, Bournemouth, Hants) Chronic relapsing pancreatitis in adolescence is a most uncommon clinical problem and has received minimal separate recognition in the literature. It occurs in an age range where the causes of the disease which may operate from birth, overlap with the major aetiological factors in the generality of pancreatitis in adult life. A personal series of 32 patients with pancreatitis aged 11–20 years, seen and treated between 1960 and 1988 is reported. Twenty four of these cases followed a chronic relapsing course. There was therefore a marked reversal of the normal proponderance of acute over chronic relapsing disease. There were four deaths—a mortality of 17%.

The patients divide aetologically into five groups. There were four boys who were alcoholics and two girls were on longterm steroids. There was one patient with hyperlipaemia and six girls had gall stones—although cholelcyctectomy did not produce a remission of their disease and five of these required further surgical procedures. Finally in 11 patients, no underlying cause for the pancreatitis could be found and this idiopathic group also ran an unexpectedly severe course.

The reversal of the acute versus chronic disease ratio, together with the troublesome clinical course in the patients with gall stones and in the idiopathic group raises the question as to whether teenage pancreatitis is a distinct entity in the overall spectrum of this disease. It is suggested that a prospective collective study of this subgroup is indicated.

Main pancreatic duct status in pseudocysts complicating acute pancreatitis

N D CARR, S JONES, R A THEIS, W R LEES, R C G RUSSELL (Department of Gastroenterology, The Middlesex Hospital, Mortimer Street, London) This study evaluates main pancreatic duct status and outcome in 75 patients (57 men, 18 women median age 39 years) who were referred for further management of pancreatic pseudocysts after acute pancreatitis. Investigations included ERCP (58), ultrasound (68), computed tomography scan (17) and percutaneous pancreatography (four). Sixty one patients had pseudocysts which communicated with a completely disrupted (44) or a partially disrupted (17) main pancreatic duct. In the remaining 14 patients the main pancreatic duct was normal.

Forty nine of the 61 patients with complete or partial disruption of the main pancreatic duct underwent partial pancreactectomy. Of 45 patients available for follow up, good results were achieved in 44 (median follow up 62 months) but one required completion pancreactectomy. The other 12 patients were treated conservatively or by drainage. Outcome was satisfactory in seven of these but four died from pancreatic complications and one required resection.

Pseudocysts associated with a normal main pancreatic duct were successfully treated conservatively or by drainage in 10 patients (median follow up 58 months) but four others underwent resection for diagnostic reasons, and also did well.

These results indicate that assessment of main pancreatic duct status is important in deciding on the treatment of pseudocysts caused by acute pancreatitis.

Can APACHE-II predict specific complications of acute pancreatitis? A prospective comparison with the Ranson system

M LARVIN, M J McMAHON (University Department of Surgery, The General Infirmary at Leeds, Leeds) Death from acute pancreatitis results from early fulminant major organ failure, or more commonly from late septic complications of pancreatic necrosis. Prediction of major organ failure and pancreatic necrosis is important for therapeutic trials, and may aid clinical management. Existing multiple criteria measure only initial severity, and cannot predict pancreatic necrosis. Acute Physiology and Chronic Health Enquiry (APACHE-II) scores provide rapid initial assessment and sequential monitoring of the severity of AP. The role of APACHE-II in predicting major organ failure was prospectively evaluated in 290 attacks of acute pancreatitis. By predefined criteria, complications were classified as early major organ failure (within the first week) (21, 7%), and pancreatic necrosis, proven at autopsy/ laparotomy (15, 5%). Data were collected to calculate Ranson and daily APACHE-II scores. For the identification of major organ failure APACHE-II scores at admission provided similar accuracy to Ranson scores 48 hours later. Ranson scores proved poor at predicting pancreatic necrosis compared with APACHE-II scores, for which accuracy increased as attacks progressed. APACHE-II has the potential to provide more rapid identification of major organ failure, which may facilitate stratification for clinical trials. Sequential ‘tracking’ of progress, hitherto impossible, may give early warning of pancreatic necrosis.

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Circulating concentrations of neutrophil elastase-A1 proteinase inhibitor in acute pancreatitis

R E BANKS, S W EVANS, D ALEXANDER, M J McMAHON, J T WHICHER (Department of Chemical Pathology and the *Department of Surgery, University of Leeds, Leeds) Acute pancreatitis varies in severity from a mild illness with low mortality to a severe form which is frequently fatal. Numerous studies have examined plasma concentrations of pancreatic enzymes, acute phase reactants and proteinase inhibitors in an attempt to predict the severity and outcome of the illness, with variable success. It has been recently proposed that fatal pancreatitis may result as a consequence of excessive leukocyte stimulation. We have examined this hypothesis with respect to neutrophil involvement by measuring the concentrations of circulating neutrophil elastase-A1 proteinase inhibitor (E-A1PI) complex serially in 27 patients with acute pancreatitis, using an ELISA method developed in house. Patients were classified as having severe or mild illness on the basis of Imrie and Ranson criteria and clinical outcome. Although plasma E-A1PI concentrations were raised in >90% of the patients on admission compared with control levels, no correlation was seen between E-A1PI concentrations and the severity or outcome of the illness, therefore not supporting a prime role of the neutrophil in determining fatality in pancreatitis. The concentrations of E-A1PI are also examined in relation to CRP and α2-macroglobulin levels with regard to prognosis.


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Trypsinogen activation peptide assay of peri- toneal fluid in acute pancreatitis

D I HEATH, C WILSON, A M GUDGEON, A JEHANLI, G PATEL, C W IMRIE, J HERMON-TAYLOR (Departments of Surgery, Glasgow Royal Infirmary, Glasgow, and St George's Hospital, London) Trypsinogen activation peptide assay specifically reports trypsinogen activation in vivo by quantifying released activation peptides using C-terminally directed antibodies which do not
Recipients of pancreas allografts (10) displayed mildly impaired glucose handling with qualitatively normal though quantitatively reduced insulin and glucagon responses, whereas animals with intraportal grafts (5) displayed poorer graft function, perhaps because of the smaller venous beds used for grafting within the spleen compared to that within the liver. Animals with intraportal grafts of purified islets prepared by an improved method for human islet isolation (5) displayed slightly stronger insulin responses. Pulsatility of insulin and glucagon release were detected in three of four animals with well maintained graft function, although at a lower frequency than normal. Longterm graft survival correlated with insulin responses to glucose six weeks after transplantation, suggesting that beta cell reserve is a determinant of graft survival; well maintained graft function was observed in two animals from the group of over three months. These results provide further support for the suggestion that isolated islets have the potential of restoring normal or nearly normal pancreatic endocrine function in man.

Comparison of conventional and digital retrograde pancreatography

D J LINTOTT, R C FOWLER, A R COWEN, A G CHALMERS, A T R AXON, P J HARTLEY (Department of Diagnostic Radiology and Gastroenterology Unit, The General Infirmary at Leeds Department of Medical Physics, The University of Leeds, Leeds) Digital fluorography is an image intensifier based technique for general digital radiology. A prototype unit has been used in this department for the past three years, mainly for upper gastrointestinal examinations. Computer enhancement of images has been used over many of the theoretical limitations of a 512×512 matrix. To test the diagnostic limitations of this matrix, a prospective comparative trial of conventional 105 mm and digital pancreatography was performed. Conventional and digital images were obtained at endoscopic retrograde pancreatography on 20 patients. Comparable images were randomised and assessed blind by the independent clinical observers. Radiographic image quality and diagnostic confidence levels were recorded and compared.

Computer enhanced 512×512 mm digital pancreatogram images are of a radiographic quality comparable to conventional 105 mm film. There is good correlation with high diagnostic confidence in 74% of comparable digital and film image pairs. Instances of poor diagnostic correlation are unrelated to the imaging technique.

Since completion of this study a custom designed digital spot film imager has been installed which provides the facility to obtain on line computer enhanced 1024×1024 matrix images.
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Leicester) Thirty four patients with prognostically severe acute pancreatitis have undergone rapid bolus dynamic computed tomography scanning. Twenty four scans showed computed tomography necrosis which in 13 patients involved less than a third of the pancreas, in four patients one third to two thirds of patients more than two thirds. Scans showed peripheral necrosis. Cytological examination of fine needle aspirates from computed tomography necrotic areas revealed necrotic amorphous debris. Repeat scans at six weeks in those with patients with more than two thirds necrosis showed persistent non-enhancement and ERP in one of these patients failed to show any pancreatic ducts in the computed tomography necrotic area. The 10 patients whose scans did not show computed tomography necrosis had clinically mild attacks. Among the 24 patients whose scans showed necrosis, 10 proved to have mild attacks; 14 had severe attacks. There were six deaths, four from multiorgan failure and two from pancreatic infection. The two patients who died from pancreatic sepsis were the only two with infected fine needle aspirates. Disease severity and the risk of death was unrelated to the extent of computed tomography necrosis. Three patients developed pseudocysts in areas of computed tomography necrosis.

We conclude that computed tomography necrosis does represent pancreatic necrosis but that disease severity is unrelated to its site or extent. Infected necrosis carries a high risk of death whilst sterile necrosis may lead to pseudocyst formation and in a proportion of patients (20%) is associated with death from multiorgan failure.

Effect of cimetidine, glucagon, propathine bromide, morphine, pethidine, naloxone, ethyl alcohol on the sphincter of Oddi

N SETAKIS, J ECONOMOU, N RITSI, A KONDIS, N GEORGIADES, G ANDONIOU (Prassovia, Athens, Greece) The physiology of the sphincter of Oddi is closely related to the pathogenesis of acute pancreatitis. The knowledge of the effect of different drugs on the sphincter of Oddi provides us with more information regarding their effect on pathogenesis or treatment of pancreatitis.

The aim of this study was to determine the effective diameter of the ampulla of Vater before and after administration of 200 mg cimetidine, 2 mg glucagon, 30 mg propathine bromide, 5 mg morphine, 50 mg pethidine, 0-4 mg naloxone iv and 10-20 ml ethyl alcohol via nasogastric tube.

The flow rate of normal saline through the human common bile duct into the duodenum was measured on those patients before and after the administration of one of the above substances. From the flow rate/min and based on Poisselle's law for laminated flow we determined the effective diameter of the ampulla of Vater.

We studied 190 patients. Thirty six patients were given 200 mg cimetidin iv, 62, 2 mg glucagon iv, to 15, 30 mg propathine bromide iv, to 26, 5 mg morphine iv, to 36, 0-4 mg naloxone iv, and finally 20 patients we administered 20-30 ml ethyl alcohol through a nasogastric tube to the first and second part of duodenum.

The conclusions from our study are as follows: cimetidine produces spasm of the sphincter of Oddi; glucagon relaxes the sphincter of Oddi; propathine bromide in the doses that we used has a very small effect of the sphincter; morphine produces very strong spasm, which, however, is reversed by the administration of glucagon; pethidine has no effect on the sphincter of Oddi; naloxone has no effect on the sphincter; ethyl alcohol produces spasm of the sphincter, less than that of morphine, which, however, is not reversed by the effect of glucagon.

Duct drainage procedures in benign pancreatic disease

L C SMITH, T N WALSH, B A THEIS, R C G RUSSELL (Department of Gastroenterology, The Middlesex Hospital, London) The role of drainage procedures in the management of benign pancreatic disease remains controversial, and rarely used. Of 360 procedures performed for benign disease between 1976 and 1989, only 45 were drainage procedures (longitudinal pancreatojejunostomy 18; accessory sphincteroplasty 20; main duct sphincteroplasty seven). This study evaluates the results of drainage procedures.

The indication for longitudinal pancreatojejunostomy was pain of operation and a duct more than 1 cm diameter, for accessory sphincteroplasty was a pancreas divisum (19) and obstruction of the accessory sphincter by a calculus (one) and for main duct sphincteroplasty was a stricture of the main sphincter (seven). All patients had an ERCP and ultrasound preoperatively and were followed up prospectively in a special clinic. A good result is defined as a patient with minimal or no pain, and leading a normal lifestyle. After longitudinal pancreatojejunostomy 13 of 18 had a good outcome, one patient died of haemorrhage at two months, and one patient proceeded to total pancreatectomy, while the patients have symptoms, but are better than preoperatively. After accessory sphincteroplasty, eight patients had a good outcome, seven patients failed and proceeded to resection, while five patients symptoms but do not require further treatment. After main duct sphincteroplasty, only two patients had a good result, two patients had a resection, and three patients are unchanged.

It is concluded that longitudinal pancreatojejunostomy is a useful therapeutic procedure with 72% good results, maintained in five patients followed for five years. Accessory sphincteroplasty gives a good result in 40%, and main duct sphincteroplasty is of little value.

Characteristics and management of cystic pancreatic tumours

A C SMITH, V A CHANDIRAMANI, C A CAINLEY, S J WILLIAMS, B A THEIS, A R W HATFIELD, R C G RUSSELL (Department of Gastroenterology, The Middlesex Hospital, Mortimer Street, London) Cystic pancreatic tumours are said to occur in the distal pancreas, and rarely present with jaundice. In a review of 10 patients (mean age 57 years, range 31-78, F:M 6:4) seen in the last four years, seven occurred in the head of the pancreas and three in the body. The site of pathology determined the clinical presentation which included jaundice (five), abdominal pain (five), abdominal mass (five), weight loss (two), steatorrhoea (two) and fever (one). Ultrasound showed a mean tumour size 7-6 cm (range 4-12). At ERCP two of seven patients had pancreaticoduodenal fistulae. Histological results showed cystadenocarcinoma (five), cystadenoma (three), pancreatic adenoma (one) and one patient had typical ultrasound findings but no histology. In two patients endoscopic stenting was attempted to relieve jaundice but failed because of thick mucus. A pancreatico- duodenal wash was performed non-operatively. All patients are alive at a mean follow up of 27 months (range 6-78). Cystic neoplasms may occur at any site in the pancreas, require appropriate drainage procedures, and aggressive surgical management may be inappropriate in the light of prolonged survival without treatment.

Role of resection in the management of pancreatic cancers

V A CHANDIRAMANI, B A THEIS, R C G RUSSELL (Department of Gastroenterology, The Middlesex Hospital, Mortimer Street, London) Despite the recent optimism, the outlook for pancreatic cancer patients is dismal. To determine the approach to the patient presenting with a pancreatic neoplasm, 102 patients who underwent resection [adenocarcinoma (PCa) 31, ampullary (ACA) 44, neuroendocrine (NT) 11, miscellaneous (M) 16], 117 patients treated by surgical bypass (SP) and 121 managed by endoprosthesis (EP) were reviewed. The diagnosis was confirmed histologically in 69% of the palliative group.

Between group comparisons were made for age, tumour size, hospital stay, lymph node status, size of resection margins, and local complications and survival (Table). A log rank analysis showed a significant survival advantage for resection, even after age and tumour size standardisation, but all patients in the PCa group died within three years despite selecting carefully for favourable tumours. In PCa small tumours did better than tumours more than 2 cm, but other factors did not correlate with improved survival.

It is concluded that resection merely delays death by 10 months in PCa. The high incidence of lymph node involvement (36%) and local extension (56%) outside the pancreas in PCa suggests the resection rate used has not been successful in the good results of ACA, NT and M demand histological assessment before palliative treatment is advised.

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