graphic brush cytology has proved negative by using a fine spring-loaded Tru-cut needle Biopsy gun (Biopsy TM, Radiplast, Uppsala), percutaneously under ultrasound guidance.

The use of self expanding metal stents was alluded to in the leading article, and a primary indication would be those patients with non-resectable hilar cholangiocarcinoma in whom good survival might be expected. There is no evidence that the optimum route of insertion for these metal stents is via the transhepatic route, and there are many advantages in placing metal stents endoscopically.

Low strictures

Messrs Russell and Rees failed to reference Roux en Y choledochojejunostomy as the preferred procedure for biliary drainage, for there is none except surgical history. In fact, conventional choledochoduodenostomy is an adequate bypass and this has the added advantage of easing endoscopic procedures later if nodes or tumour growth around the porta hepatis occlude the bile duct.

We agree that there are a few figures suggesting an improved survival after radical resection, but numbers are small and very few centres achieve a 5% mortality, and cures are rare. The improved survival may merely indicate the improved selection.

We agree with Professor Cotton that difficulties do arise in the management of a few patients for whom resective surgery may be the correct approach. The patients are best cared for in a unit which has a specialist team of interventional endoscopists, radiologists, and a pancreaticobiliary surgeon.

In the article routine stenting was not advocated; in fact, it was clearly pointed out that clinicians now have to take a mature approach in their decision making, and have to balance the patient's condition and likelihood of survival before deciding on a surgical or an endoscopic approach to palliation. Clearly, there are going to be some patients who look fit and well, and in whom some form of surgical palliation may be appropriate to reduce the need for admissions, which would be necessary in the patient stented endoscopically. At the other end of the spectrum there are those patients over the age of 70 years in whom a simple stenting procedure seems a very suitable alternative to any form of surgical palliation, particularly, when we know that most patients die jaundice free with their original stent in situ.

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Ultrastructural demonstration of histamine in human enterochromaffin like cell granules

SIR,—We read with great interest the paper by Lönröth *et al.*¹ By using immunohistochemical methods in light microscopy in normal volunteers, the authors showed that in addition to mast cells some gastric endocrine cells contained histamine. These cells were located exclusively in the fundus, constituted 44% of the total number of endocrine cells in the oxyntic mucosa, and stored neither 5 hydroxy-

Ultrastructural histamine demonstration in enterochromaffin like cell secretory granules on human fundus biopsy section. The 5 nm gold particles are located in the electron dense granules and inside a typical vacuolated granule (original magnification $\times 60/10^3$).

tryptamine nor somatostatin. These endocrine cells were supposed to be enterochromaffin like cells.

To study this hypothesis, we tried to demonstrate histamine (HA) in the enterochromaffin like cells by an immunocytochemical method in electron microscopy. Ultrastructural analysis of fundic sections, indeed, allow enterochromaffin like cells to be distinguished, with their typical secretory granules, from the other gastric endocrine cells.² This study was done in a patient with pernicious anaemia, hypergastrinaemia (>1000 pg/ml), and micro-nodular hyperplasia of argyrophilic cells (Grimelius argyrophil technique). Fundic mucosal biopsy specimens were obtained during gastroscopy, fixed in 4% glutaraldehyde in phosphate buffer at 20°C, dehydrated in ethanol, and embedded in Epon 812. Ultrathin sections were cut and mounted on gold grids. They were incubated for four hours in 1/200 diluted polyclonal guinea pig anti-HA antibodies (Peninsula ref 61069) at room temperature and rinsed in phosphate buffer and in distilled water. The grids were then incubated for one hour in a 5 nm gold particle conjugated anti-guinea pig immunoglobulin (Biocell EMGAG5), 1/20 diluted in phosphate buffer solution. Finally, the grids were rinsed in water, dried, and contrasted with uranyl acetate in ethanol.

The efficiency and the specificity of the immunocytochemical reaction were first checked on rat peritoneal mast cell (PMC) sections. Normal rat PMC granules were shown to contain HA while, after in vitro incubation in a poly-L-lysine (secretagogue) solution,³ the PMC granules no longer contained HA.

In the human biopsy sections few mast cells were present around the gland. They were shown to contain HA in their uniformly electron dense granules. The enterochromaffin like cells were identified ultrastructurally. Most of these cells contained granules positively marked by the anti-HA immunocytochemical reaction (Figure). This reaction was reproduced several times on many sections of the same biopsy specimen with concordant results. The control sections were incubated either with anti-HA neutralised by HA followed by the immunogold reaction, or with immunogold reagent alone. They were both negative except a light aspecific background.

The results of this study are in agreement with Lönröth's conclusions: the histamine-containing endocrine cells of the human fundus are enterochromaffin like cells. The role of these cells in the physiology of histamine mediated acid secretion should be explored. Further studies should determine if the cell granules release histamine under the influence of gastrin.

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Reply

SIR,—Dr Delwaide and colleagues have with this report further confirmed that the enterochromaffin like cells of the human fundus indeed contain histamine. In the human gastric mucosa these cells are confined to the oxyntic gland area, which also presents a higher histidine decarboxylase activity than the non-acid producing pyloric gland region.¹ Patients with hypergastrinaemia of different origin also have a higher histidine decarboxylase activity together with an increased density of enterochromaffin like cells in the oxyntic gland area.²⁻⁴ In addition, pentagastrin infusion is followed by a release of histamine and by a substantial increase in histidine decarboxylase activity in the oxyntic gland mucosa of healthy volunteers. These pentagastrin induced events do not occur in the pyloric gland region.⁴

In conclusion, all this circumstantial evidence together with the results presented by Dr Delwaide and colleagues favour the view that the enterochromaffin like cells of the human stomach store histamine, release the amine on proper stimulation, and have the capacity to synthesise histamine.

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BOOK REVIEWS

Textbook of secretory diarrhea. By Emanuel Lebenthal and Michael E Duffey. (Pp 456; illustrated; \$132.) New York: Raven Press, 1990.

Although secretory diarrhoea is not everyone's cup of tea, I approached this book with some

enthusiasm. The title, however, is somewhat misleading because it is not a textbook as I understand the term. It is more a collection of reviews by distinguished experts focusing predominantly on the physiological and biochemical mechanisms underlying intestinal secretion. There are excellent reviews of neural regulation of intestinal ion transport, of mechanisms of chloride and other ion transport, and of reconstitution of epithelial ion channels. The role of the paracellular pathway is dealt with in an excellent chapter. Intracellular second messengers, stimulated by secretagogues, are described in three good chapters and although intracellular calcium is dealt with surprisingly cursorily, these aspects are clearly reviewed.

In contrast to these excellent basic science chapters, the rather shorter section on clinical aspects of secretory diarrhoea is a little disappointing. In some chapters, another version of the pathophysiological basis of the diarrhoea, such as cholera, is given when this had been dealt with at greater length earlier. In some instances, conflicting interpretations of the literature are given. Other evidence of loose editing includes reference lists given alphabetically in most but not all chapters.

The section on therapeutic options provides a good, if somewhat repetitious, review of basic mechanisms of inhibition of secretion but little practical advice on treatment of patients. The chapters on oral rehydration therapy are interesting but practical management is confined to infants and children.

If you are looking for a collection of impressive, up to date essays on the pathophysiological basis of intestinal secretion with some indication of its relevance to secretory diarrhoea, then this is the book for you. If, however, you are wanting a comprehensive textbook of the whole field of secretory diarrhoea, then you may be disappointed and if you are looking for help with particular clinical problems, then you may need to look elsewhere.

L A TURNBERG

The irritable bowel diet book. By Rosemary Nicol. (Pp 79; £3.50.) London: Sheldon Press, 1990.

At first sight, this book is manna, if not from Heaven then at least from the Society for Promoting Christian Knowledge of which Sheldon Press is the publishing imprint. According to the press release, the author '... has now devised a delicious and nutritious [sic] diet which makes a decisive difference to your irritable bowel.' What more could the harassed gastroenterologist want for the recidivist patient who has not responded to Fibrocol, Coloflock, or Culpamint? The only remaining question is whether it is available on prescription.

But read the book and doubts creep in. Chapter 1 poses a rhetorical question: What is irritable bowel syndrome? Like jesting Pilate, the author does not stay for an answer except to point out that it is a disorder and not a disease, but passes rapidly to 'One man's wheat ... a look at problem foods.' Rosemary Nicol has summarised a lot of useful information on food, allergy, intolerance, and exclusion diets, but where is the promised 'delicious and nutritious' diet? It transpires that, at least in part, the answer is a do-it-yourself solution. What you do is titrate your fibre intake against your stools as calibrated on the 'Bristol stool form scale.' This scale ranges from 1 ('separate hard lumps like nuts') to 7 ('watery, no solid pieces'). According to the text, 4 ('like a

sausage or snake, smooth or soft') is normal, but 'If your stool is ... number 3 (like a sausage or snake, but with cracks on its surface), this is constipation even if you have a bowel movement like this several times a day.'

But this is not all. Whether or not your stools are postmodernist or resemble the sculpture of Henry Moore, it seems that '... one of the main things your irritable bowel needs is good healthy food eaten in a calm leisurely way. Anything else is asking for trouble.' The author provides a number of recipes for 'healthy living,' many of which are wheat free. She categorises these as 'quick, interesting and cheap': well, quick and cheap maybe, but interesting? But even if her culinary advice leans towards the ascetic rather than the gourmet, this is not important. What does matter is whether this well intentioned book is helpful.

The truth is that although many IBS (and inflammatory bowel disease) patients find that dietary modification is helpful, there are no scientific data that support the notion that IBS is a consequence of faulty diet, or that stool gazing is an effective means of determining a diet that will alleviate symptoms. In my experience many IBS patients are burdened by myths about diet and colic induced by gobbling unrefined bran. Some patients may be helped by the advice in this book – IBS is a condition with a high placebo effect – but at least as many are likely to end up by feeling frustrated and, if they believe the author, guilty about a lifestyle which is 'unhealthy.' The implication – perhaps unintended – of the text is that IBS is the patient's fault, and is the product of bad eating and bad living. This may be Christian knowledge, but it is not medical science.

I have been pondering on the meaning of 'nutricious.' My conclusion is that it is a conflation of 'nutritious' and 'lubricious.' These must be aphrodisiac foods, and interested heathens are referred to *Venus In The Kitchen* by Norman Douglas, which is the standard text in these matters. His recipes don't work either, but the placebo effect is interesting.

DAVID WINGATE

Mucosal biopsy of the gastrointestinal tract. 4th ed. Edited by R Whitehead. (Pp 455; illustrated; £47.00.) Philadelphia: Saunders, 1990.

The fourth edition of this immensely popular monograph contains a wealth of diagnostic information clarifying the interpretation of biopsies from the gastrointestinal tract. The text is written in impeccable English and the illustrations greatly enhance the visual dimension. The subtypes of chronic gastritis which are described embrace type A, type B, type A B, bile reflux gastritis, and chronic erosive gastritis. Healthy scepticism is expressed regarding the role of *Helicobacter pylori* in the aetiology of chronic gastritis. Duodenal biopsy is accepted as the standard procedure for the diagnosis of coeliac disease, but the role of circulating antibodies and the shortcomings of endoscopic biopsy are not amplified.

A histological grading system is recommended for duodenitis (bulbitis) with the implication that grade 2 or 3 is part of the peptic ulcer diathesis. Crypt hypoplastic villous atrophy is rare in children and adults and its clinical associations are briefly documented.

Biopsy differentiation between ulcerative colitis, Crohn's disease, infectious colitis, ischaemic colitis, and other forms of colitis is considered in helpful detail. Criteria for

accurate identification of dysplasia in the oesophagus and stomach and in inflammatory bowel disease are clearly described and illustrated. Rare entities such as storage disorders, parasitic disease, sarcoidosis, infantile systemic hyalinosis, and acrodermatitis enteropathica are discussed in perspective.

The critical appraisal of relevant references is commendable, stimulating, and challenging, and the personal views which are expressed with supporting evidence add considerable interest. Certain topics are excluded from the text – namely colorectal cancer and polyps, perianal lesions such as squamous carcinoma, malignant melanoma, and Bowenoid papulosis. Without doubt, this edition should be available to all gastroenterological pathologists for leisure reading, consultation, and reference.

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Current gastroenterology. Edited by G Gitnick. (Pp 339; illustrated; £56.00.) London: Wolfe Publishing, 1990.

Gary Gitnick has done it yet again, with another year's *Advances in Gastroenterology* (excluding liver and biliary disease) summarised in 325 pages (plus index). Each author must have devoted months of his life to producing his chapter which was then peer reviewed to ensure excellence. However, there is often duplication between chapters, and this may be missed by the reader relying only on the index. The endoscopy chapter describes many topics already covered in one or more earlier chapters, such as Barrett's metaplasia and sclerotherapy (oesophagus), gastric haemorrhage (stomach), screening for colon cancer and polyps (colon, colon cancer), intervention for chronic pancreatitis and pseudocysts (pancreas).

Perhaps future editions could save space by eliminating such overlap and then encourage adequate coverage of common and important diseases which receive only short shrift. Thus *Helicobacter* (still called here *Campylobacter*) *pylori* has only three pages and the irritable bowel syndrome, which we are told affects 17% of the population, is given just one page. Authors could also be reminded that the plural of diverticulum is diverticula not diverticulæ, and be requested to provide citations for new items mentioned, especially treatment, such as balsalazide for ulcerative colitis, and mepacrine for collagenous colitis.

I had often thought, but now I know, that I work in an underdeveloped country. Cass and Vennes from Minneapolis are appalled that 21% of GI units in the UK have waiting lists over five weeks for routine upper endoscopy: 'The British units appear understaffed and overworked.' Yes.

J H BARON

Baillière's clinical gastroenterology. Vol 4 No 3: virus infections of the gut and liver. Edited by M J G Farthing. (Pp 195; illustrated; £22.50.) London: Baillière Tindall, 1990.

Accepting the current estimate that probably more than half of the annual 5 million preschool child deaths from diarrhoeal disease are due to virus infection, the prevailing ignorance among gastroenterologists of viral illness of the gut might seem almost complacent. But it is hardly surprising, given the fact that there was little progress in understanding viral illness before the comparatively recent advent of molecular biology, of which virology has been