collimator. No adverse reactions to the injection were noted. Using this technique tumors were clearly visualized in 16 of the 20 patients, visualization was doubtful in 1, and they were not detected in the remaining three patients (2 with lesions in duodenum and stomach). Among the 16 positive cases, a single pancreatic localization was seen in 11; multiple pancreatic lesions were seen in 3; and, in the remaining 2 patients, hepatic and/or lymph node metastases were detected. In one of the patients with MEN 1 and diffuse gastric carcinoid, extensive gastric involvement was demonstrated. CT was also performed in 19/20 patients: in 13 cases it was not able to detect the tumors. Similarly, US was negative in 13/20 patients. These data show that Octroescan 111, a simple and noninvasive procedure, is a valid technique for localizing primary neuroendocrine tumors and their frequently unrecognized metastases. Its diagnostic sensitivity seems to be greater than that of CT or US.

Thus, Octroescan 111 appears to be a very promising technique, perhaps even as the first choice examination when there is a suspicion of neuroendocrine tumor.

180 Recovery and Growth of Colorectal Polyps
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In a 3 years intervention study with colorectal polyps, where all polyps less than 10 mm were left in situ, an evaluation of recovery, growth and new discoveries were carried out at the first year control, as previously reported. The present evaluation was performed to see if the same pattern could be demonstrated at the 2. and 3. year control, confirming the previous conclusion.

Patients attendance rates were high at all controls (87-81%), and the rates of complete colonoscopies varied from 88-99%. Recovery of polyps varied from 75 to 85%, better for the larger polyps, 5-9 mm in diameter, and for the polyps situated in the rectum and sigmoid colon, compared to the more proximal polyps. The number of new polyps discovered for each year varied from 20-26% compared to the total material for the respective year. The new polyps were significantly smaller and more proximally located than in the total polyp material.

Analysis of growth at the 1. year control had shown a significant growth in the group of polyps less than 5 mm, and a significant reduction in size in the group with diameter 5-9 mm. The same pattern was demonstrated at the 2. and 3. year controls, however the reduction in size of the polyps 5-9 mm was not significant and for the polyps less than 5 mm only the increase from 2. to 3. year was significant. There was no significant over all difference in polyp size in the total polyp material from year to year.

Conclusion: (1) Recovery of polyps left unresected was good, especially in rectum and sigmoid colon.
(2) New discovered polyps are smaller and more often located proximal to the sigmoid colon than in the total polyp material.
(3) Polyps less than 5 mm show a tendency to growth, while the polyps 5-9 mm show a tendency to reduction in size.
(4) We postulate that the regression of the larger polyps may explain the discrepancy between the prevalence of colorectal polyps and the incidence of cancer.

181 Advantages and Drawbacks of Adding Flexible 60 cm Sigmoidoscopy to Hemocult-II in Screening for Colorectal Neoplasia
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The aim is to assess benefit and costs of adding flexible sigmoidoscopy (S) to Hemocult-II (H) in asymptomatic persons between 50 and 74 years of age. At random 3,000 persons are invited to H+S and other 3,000 to H alone at Funen in Denmark. Other centres within EU are extending these figures, and the final number of 40,000 persons is approached to evaluate the feasibility of screening with H+S.

So far, 292 persons have had H+S and H was positive in 25. Colonoscopy was done in 157, because of positive H (25) or because of polyps found during S. Cancer was found in 4 and adenomas in 91 (29 > 1 cm).

In conclusion, no more than 41% accepted H+S, whereas 54% accepted H alone. However, the first strategy resulted in detection of a number of cancers, which may be higher than that for H alone, and the number of large adenomas was significantly higher than that found by H alone. A higher acceptability would be wanted and resources for extended colonoscopy service are needed before embarking on a mortality study.

182 The Putative Mucosal Homing Receptor Integrin β7 Is Upregulated in Human Intestinal Lamina Propria Compared with Peyer’s Patches and Appendix
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Introduction. The integrin β7 may be coupled to α4 as the putative mucosal homing receptor α4β7, or to α2 as α2β7. α4β7 has been identified as a main Peyer’s patch homing receptor in mice partly because of one of its ligands, MADCAM-1, is expressed by Peyer’s patch high endothelial venules. In this study we have compared the expression of integrin β7 in human small intestinal lamina propria with Peyer’s patches and appendix to evaluate its role in directing lymphocytes to these sites.

Materials and Methods. We have used a MoAb to mouse β7 that also recognizes human β7. Flow cytometry was performed on cells isolated from jejunal lamina propria (n = 7) and appendix (n = 5), including Raji cells as a positive control. Cytosocieties from normal jejunal (n = 2) and colicel (n = 2) mucosas, and from ileum containing Peyer’s patches (n = 2), were subjected to two- or three colour immunohistochemistry. Results. In flow cytometry, Raji cells as well as a fraction of lamina propria cells (median 37%, range 17-53%) expressed β7. In contrast, <5/10 appendix cells were β7+. Immunohistochemistry showed most intraepithelial (90%) and many lamina propria (40%) cells to be β7+; intra- and subepithelial cells showed highest staining. MoAb to β7 reacted mainly with T cells of memory phenotype. In Peyer’s patches scattered cells in the domes and interfollicular (T cell) zones were β7+.

Conclusions. Integrin β7 is expressed primarily on T cells and much more frequently by lamina propria than by Peyer’s patch and appendix lymphocytes. This difference might be explained by the higher proportion of memory T cells in lamina propria. Integrin β7 could therefore be an important homing receptor for T cells primed in Peyer’s patches or the appendix and destined for distant lamina propria.

183 Gluten-Specific, HLA-DQ- Restricted Small Intestinal T Cells Secretes Cytokines that May Explain Several Features of the Coeliac Lesion
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Coeliac disease (CD) is precipitated in susceptible individuals by ingestion of wheat gliadin or other gluten-related prolamins from various cereals. The disease is strongly associated with certain HLA-DQ heterodimers, DQ2 (DQα1*0501, DQβ1*0201) in most patients and apparently DQ8 (DQα1*0301, DQβ1*0302) in a small subset. T-cell recognition of gluten peptides presented by such class II molecules may be immunopathogenic importance. We recently established HLA-DQ- restricted, gluten-specific T cell clones (TCC) from the intestinal muscularis mucosa of CD patients, and have now examined their antigen-induced secretion of cytokines. Altogether fourteen TCC (DQ2- or DQ8- restricted) from three patients were investigated. Cell culture supernatants were prepared by stimulation with gluten peptides in the presence of DQ2+ or DQ8+ EBV-transformed B cells as antigen-presenting cells. Supernatants were analyzed for cytokines by bioassays, ELISA, and CELISA. Cellular cytokine mRNA was analyzed semi-quantitatively by Northern blotting and PCR. All TCC were found to secrete large amounts of IFN-γ, IL-2 and GM-CSF. The DQ2-restricted TCC produced small amounts of IL-4 but no IL-5 or IL-6, and some of them produced in addition TNF-α; this profile is typical of Th1-like cells. Conversely, the DQ8-restricted TCC secreted in addition to IFN-γ substantial amounts of IL-4, IL-5, IL-6, and TNF-α, a pattern more compatible with Th2-like cells. Very little IL-2 was found in the supernatants from all the TCC but could be readily detected by mRNA analysis. The cell supernatants from both varieties of gluten-stimulated TCC induced upregulation of HLA-DR and secretory component (SC or poly- Ig receptor) in the colonordadenoma carcinoma cell line HT-29. The characterized cytokine profiles thus substantiated the possibility that mucosal T cells activated in situ by gluten in a DQ-restricted fashion play a central role in the pathogenesis of CD.


184 "Respiratory Burst" in Macrophages Isolated from Inflamed Human Intestinal Mucosa

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The macrophage plays an important role in local defence. An important bacterial mechanism is oxygen radicals (OR) which, however, may produce tissue damage, perhaps as an early step in inflammatory bowel disease (IBD). We wanted to study: (i) the production of OR ("respiratory burst") by mucosal macrophages in patients with or without IBD, (ii) whether these macrophages respond to inflammatory mediators; and (iii) whether a difference exists between resident macrophages and newly arrived CD14+ monocyte-like cells.

Methods: Monocytes from 6 healthy donors were separated by Lymphoprep and by adherence to plastic. Cultures of lamina propria-mucosal cells (ILM) were established in 96-well plates with and without IBD, (ii) whether these macrophages respond to inflammatory mediators; and (iii) whether a difference exists between resident macrophages and newly arrived CD14+ monocyte-like cells. \[...\]

185 Function of HLA-DQ2 and HLA-DQ8 as Susceptibility Molecules in Coeliac Disease

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Coeliac disease (CD) is an immunological disorder of the small intestine, precipitated in susceptible individuals by ingestion of gluten. Approximately 90% or more of CD patients carry the cis or trans encoded HLA-DQ2*(d0501, \(\alpha1\)-d0201) heterodimer, i.e. HLA-DQ2. Most of the remaining CD patients carry the HLA-DQ8* allele, i.e. HLA-DQ8. To investigate the functional role of DQ2 and DQ8 in CD, we challenged biopsies from the small intestine of various CD patients with peptic-tptic digest of gluten and positively selected the cells which became activated; i.e. expressed the IL-2 receptor. These T cells were then expanded in vitro and T cell lines and T cell clones were established. CD4+ gluten-reactive T cells from CD2 patients recognized gluten antigen when presented by DQ2, and not when instead presented by any other HLA class II molecule of the patient. In a DQ8 patient DQ8 was similarly found to be the preferential restriction element. In contrast, when gluten-reactive T cells from the peripheral blood were investigated, both DQ or DP restricted T cells were found. Thus a major proportion of gluten-specific T cells in the intestinal mucosa of CD patients recognize gluten-derived peptides when presented by the disease associated DQ2 or DQ8 molecules, suggesting preferential antigen presentation by these DG molecules in the intestinal mucosa as a possible immunological mechanism behind the HLA association in CD.

186 Cathepsin E: A Novel Marker of Lymphoepithelium. Its Expression by Normal and Inflamed G.I. Mucosa

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Cathepsin E (CE) is a non-lysosomal aspartic protease which seems to be involved in antigen processing for presentation by class II major histocompatibility complex. By means of specific antibodies we localized histochemically CE in follicle associated epithelium (FAE) of human and rat intestine as well as in palate, pharyngeal and lingual tonsils. Outside the gut, CE was found in the epithelium overlying bronchial/bronchiolar associated lymphoid tissue and in some professional antigen-presenting cells (Langerhans cells, interdigitating reticulum cells). As a rule, CE-reactive epithelial cells expressed HLA-DR. Ultrastructural immunocytochemistry showed CE in endosomal vesicles and endoplasmic reticulum of intestinal M cells and M-like cells of tonsils. In biopsies or resection specimens from 70 pts with ulcerative colitis (UC) and 63 pts with Crohn disease (CD), CE reactivity was spread also outside the follicle associated epithelium. CE was overexpressed in all cases of UC and CD, with diffuse staining of epithelial cells in active UC and patchy distribution in CD. Coexisting HLA-DR overexpression was found in 66% of UC (limited to active forms) and 75% of CD cases, respectively. CE and HLA-DR were also studied in 65 gastrectomy specimens either histologically normal or affected with chronic gastritis of different severity. While HLA-DR was absent in normal gastric epithelium, weak CE immunostaining was found at the base of normal superficial/foveolar cells. De novo expression of HLA-DR and enhanced production of CE characterized H. pylori gastritis. These findings were mostly evident in active gastritis, where heavy staining was found in foveolar and neck epithelium by both CE and HLA-DR antibodies. Ultrastructurally these cells showed a striking expansion of the endocytic-endosomal compartment, at times containing H. pylori antigenic material.

Conclusions: (1) CE is a specific marker of lymphoepithelium, where it is coexpressed with HLA-DR. (2) CE is widely overexpressed (together with HLA-DR) in IBD as well as in H. pylori-associated chronic active gastritis. (3) the development and/or expansion of an epithelial compartment with the capacity to process (CE+) and present (HLA-DR+) antigens to T cells may be relevant in maintaining long-standing inflammation typical of such diseases.

187 Thoracoscopic Vagotomy without Drainage: A New Technique for Treatment of Chronic Duodenal Ulcer

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A total of 40 patients were considered for thoracoscopic vagotomy: 37 males and 3 females. The age of the patients ranged from 21–60 years with a mean of 35 years. All the patients had a long history of chronic duodenal ulcer disease, and were managed as a mean duration of 6.5 years. Of the 40 patients, 29 were performed in intractable, 6 with haemorrhage, 1 with perforation, 2 with anastomotic ulcer and 2 patients with recurrent ulcer after highly selective vagotomy. The median operating time was 35 minutes with a range of 15–80 minutes. There were no deaths, but major complication occurred in one patient. He developed a 2 hour postoperative drainage due to ruptured emphysematous bullae during the process of lung inflation at the end of the procedure, managed by a chest tube with a low pressure continuous suction. The mean postoperative hospital stay was 2.4 days. Follow-up upper endoscopy 2 months post operative showed ulcer healing and ulcer acid study done 3 months post operative indicated complete vagal activity in all patients. Post operative assessment of gastric stasis included clinical fullness, or vomiting, barium meal and upper endoscopic studies. One patient developed signs of gastric stasis 48 hours post operative, managed by gosseto-jenstom by minilaparotomy. Another patient developed stasis 3 week later and was managed with gosseto-jenstom by laparotomy.

Thoracoscopic vagotomy without drainage is an effective and elegant method in treating chronic duodenal ulcer.

188 Laparoscopic Vertical Banded Gastroplasty

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With the development of staple instruments for laparoscopic use a new opting on minimally invasive instrumentation is taking place.

In the period October-December 1993 eleven patients underwent vertical banded gastroplasty through laparoscopic approach. Patient selection was the same as for open bariatric surgery.

The operation was performed mainly according to Mason with a gastric window made by a 25 mm circular stapler, and the vertical staple line with a 60 mm four-row linear stapler. The stoma was reinforced by a Gore-tex band. Calibration of the stoma was made with a flexible 9 mm tube or a 10 mm gastrostomy.

In no patient had to be converted to open surgery during the initial performance, but 2 patients were reoperated: One laparoscopically for reinforce-ment of a vertical staple line defect caused by a gastric tube. The other patient was reoperated openly on the first postoperative day because of a rupture in the vertical staple line. Compared to a reference group of 35 obese patients operated with open bariatric surgery, the laparoscopic patients showed less postoperative pain and were more rapidly mobilized. Several patients were capable of returning to full activity within two weeks after the operation.

It is concluded that a vertical banded gastroplasty can be performed with a laparoscopic approach using staple instruments now available. Postoperative results indicate that the patients will have a shorter postoperative recovery