genicity. It is therefore likely that dietary manipulation less radical than the use of an elemental diet could provide similar benefit in patients with Crohn's disease.

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¹ Logan RFA, Gillon J, Ferrington C, Ferguson A.

Gut (abstract) 1979;20:A905.

² Segal AW, Levi AJ, Loewi G. *Lancet* 1977;ii:382-4.

* * * We sent these letters to the authors, who reply below.—ED, *BMJ*.

SIR,—We are grateful for the opportunity you have given us to reply to the vigorous criticisms of our recent paper (1 November, p 1173) made by Dr Woolfson, Drs Smith and Stoddard, and Dr Logan and his colleagues. At the time we started the study over four years ago, there were only anecdotal and short reports on the value of an elemental diet in acute Crohn's disease. It was a pilot study and therefore no control group was included, though a prospective controlled trial is under way. Summers *et al* report that only 30% of patients with acute Crohn's disease remitted compared to 29 out of 32 exacerbations in our series.¹

We accept that we might have emphasised the pilot aspect of our study more strongly. The patients reported in our series were consecutive patients admitted to Northwick Park Hospital since 1976 who were acutely ill with a major exacerbation of Crohn's disease. The true extent of the disease is difficult to estimate as radiology often underestimates the extent of Crohn's disease. Of the six patients with growth retardation, three were below the third height percentile for their age and in the other three there was a decrease in the height percentile before treatment with an elemental diet. The clinical diagnosis of subacute obstruction was confirmed by radiology.

The introduction of an elemental diet was the only therapeutic manoeuvre used in 19 of the patients initially. Eight were given the diet alone and nine were given levamisole from the third week onwards, in an effort to prolong the remission induced by an elemental diet.² Two of our patients were unable to tolerate the diet orally and were given steroids. The three patients who received concomitant steroid therapy were under the age of 16 and the diet was given to minimise the dose of steroids and to avoid stunting of growth. There is a general consensus that nutritional deficiency is a significant manifestation of Crohn's disease and that bowel rest "therapy" plays an important role in its management.³ It is likely that the repeated exposure of an ulcerated mucosa to an exogenous protein is likely to cause an immunologically mediated local and systemic pathology. The primary reason for the use of an elemental diet was to exclude whole protein while maintaining oral nutrition and giving a sufficient amount of nitrogen in the form of amino acids.² We think that an adequate amount of nitrogen was absorbed as stable isotope studies showed that up to 98% of the nitrogen given was absorbed. We feel that the parameters of disease activity we measured—a fall in sedimentation rate and an increase in serum albumin, haemoglobin, and weight—reflect a definite nutritional and clinical improvement.

The composition of the diet is hyperosmolar but diarrhoea was not a complication observed and was indeed one of the presenting complaints that rapidly resolved on the elemental diet. Dr Woolfson vehemently criticises us for using Vivonex but the evidence he produces against it apparently was published in the abstracts of a private meeting

only in 1980, while our study started two years ago. Glucose does increase the osmolality of a solution compared to glucose polymers on account of its molecular weight, but polymers must be digested before absorption.

The demonstration of net water secretion in the upper normal small bowel does not imply an overall decrease in the absorptive capacity of the gut. We agree that undernourished patients improve clinically when put into positive nitrogen balance. However, elemental diet treatment, as well as providing nutritional support, reduces protein and lymphocyte loss from diseased intestine.⁴ It can be effective in inducing remission when other treatments fail, including steroid therapy.⁵ So far as we are aware there is no evidence yet whether the more palatable whole-protein feeds recommended by Dr Logan and his colleagues have a beneficial effect in acute Crohn's disease. Until we know more of the mechanisms underlying the improvement we cannot predict this. We feel that an elemental diet is a simple non-toxic (though expensive) treatment which reduces the length of hospitalisation and results in a quicker return to a normal life for the patient, which may outweigh the cost of the treatment.

While attacking us for lack of controls in our study, the letter by Dr Logan and others is full of their belief in their own clinical impressions. The fact remains that ours is the largest (though still uncontrolled) study of the effect of enteral nutrition in acute Crohn's disease. Controlled studies are now clearly needed and we look forward to the completion of ours as much as your correspondents who so forcibly criticise our efforts in this difficult area.

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¹ Summers RW, Switz DM, Sessions JT, *et al*.

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³ Rosenberg IH. *Gastroenterology* 1979;77:393-5.

⁴ Logan RA, Gillon J, Ferrington C, Ferguson A.

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⁵ Axelson CK, Jarnum S. *Scand J Gastroenterol* 1977;

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Colonoscopic polypectomy in children

SIR,—We were interested to read the paper by Dr J R Douglas and others (22 November, p 1386) on colonoscopic polypectomy in children. The authors recommend fiberoptic colonoscopy under sedation performed by a skilled endoscopist as the initial means of investigation in children with undiagnosed rectal bleeding. Although the fiberoptic colonoscopy has proved to be a significant diagnostic tool in the management of colonic diseases, the diagnosis of colonic disorders should still depend on stool study, proctoscopic and sigmoidoscopic examination, and double-contrast barium enema. Colonoscopy is a valuable complement to these modalities; nevertheless, it is not without its small but inherent morbidity.^{1 2} Double-contrast barium enema in a well-prepared patient can detect the majority of the lesions above the limit of a sigmoidoscope. The accuracy of the barium enema examination, however, depends not only on the quality of the bowel preparation but also on the quality of the radiographs and the skill and the patience of the radiologist. Williams³ in his review of 800 cases found a 98% correlation between the results of colonoscopy and double-contrast barium enema in polyps over 1 cm.

We also question the safety of the use of

four drugs (droperidol, pethidine, diazepam, and naloxon) to carry out the examination. The use of intravenous diazepam and pethidine if not supervised by a competent anaesthetist, especially if the doses have to be repeated during the examination, is not without danger in children. Although this combination is adequate in producing a satisfactory, though not necessarily complete, level of analgesia, the assessment of subsequent amnesia is not always easy, especially in a preschool child. We believe that the degree of amnesia produced by intravenous diazepam is neither universal nor complete. In a study carried out in our surgical unit a standard questionnaire was circulated to 51 patients six months after their colonoscopic examination. All had had barium enema studies prior to their colonoscopy. We found that the majority of the patients (69.5%) who had received sedation prior to colonoscopy still found the procedure unpleasant. This number fell to 27% following the introduction of general anaesthesia. Although general anaesthesia is not commonly used for colonoscopy we, like Hansen,⁴ found that its introduction into our practice allowed a more complete examination with greater satisfaction on the part of the patients.

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¹ Livstone EM, Cohen GM, Troncale FJ, Touloukian RJ. *Gastroenterology* 1974;67:1245-7.

² Williams CB, Lane RH, Sakai Y, Hanwell AE.

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³ Williams C. *Dis Colon Rectum* 1975;18:366.

⁴ Hansen LK. *Scand J Gastroenterol* 1971;6:687-91.

Endoscopic assessment of oesophageal disease

SIR,—May a radiologist intervene in what seems to have been up to now a private fight over endoscopy and oesophageal disease?

Surely all the discussions about radiology versus endoscopy are tedious and irrelevant. In given cases both are needed, and the order in which they are performed is, in most cases, not important—but not in all cases (see Mr J S Davidson's letter, 6 December, p 1563); and in general it is preferable to start with the non-invasive technique (that is, radiology) before proceeding to the invasive technique. It is unfortunately the case that we are not always talking about experienced radiologists and experienced endoscopists, and clearly junior staff have to learn the techniques and pitfalls of the invasive technique, in the matter both of morbidity (and mortality) and of errors and omissions of diagnosis. A preliminary barium examination is of great value and gives great reassurance in such situations. My departmental policy is that all barium swallow requests for investigation of dysphagia are treated as urgent, and are performed within 24 hours of receiving the request. There is one point here which should be emphasised to our clinical colleagues, however; there is no such thing as a barium swallow examination in a well-conducted x-ray department. The examination must include adequate visualisation of the entire stomach and the duodenal cap and loop; without such a policy, significant lesions lower in the upper gastrointestinal tract will not infrequently be missed.

A final technical point for Mr M P Holden (6 December, p 1562). He really has no need