ing (including fine bore tube feeding) have been well documented,⁵ but nasogastric feeding remains an essential part of nutritional support.

Percutaneous endoscopic gastrostomy is a major technical advance in obtaining access for nutritional support, and though its safety is well established, it is still an invasive procedure and not suitable for all. What has not been well established, and which neither Park and colleagues or Forgacs and colleagues addressed, is the indication for nutritional support in patients with disabling neurological conditions. Research and training in nutritional support are needed to define and outline the risks and benefits of nutritional intervention in such patients. Percutaneous endoscopic gastrostomy feeding is an advance for those who require long term tube feeding, and we would not have considered randomising patients who had already had four weeks of nasogastric tube feeding.

We do not see percutaneous endoscopic gastrostomy feeding as a panacea for all, nor will its use "prevent the degrading spectacle of elderly, undernourished patients with their hands bandaged to the side of the bed."⁷ Let clinicians decide whether nutritional support is appropriate and then institute appropriate treatment using well proved technological advances such as percutaneous endoscopic gastrostomy.

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EDITOR,—We have used percutaneous endoscopic gastrostomy feeding on several occasions with excellent results but wish to add a caveat regarding its use in chronic renal impairment.^{1,2}

A 63 year old woman started continuous ambulatory peritoneal dialysis in 1983 because of chronic renal failure secondary to polycystic kidney disease and atherosclerosis. In April this year the dialysis catheter was removed after persistent culture negative peritonitis and she was transferred to temporary intermittent haemodialysis. She later developed gangrenous toes secondary to peripheral vascular disease and underwent amputation below the right knee.

Because of poor oral intake, weight loss, and a low albumin concentration a percutaneous endoscopic gastrostomy tube was inserted under standard conditions. Six days later the patient developed severe abdominal pain, vomiting, absolute constipation, and peritonitis. At laparotomy the gastrostomy tube was found to lie in the peritoneal cavity, with leakage of enteral feed throughout the abdomen and an intense peritoneal reaction. The patient recovered well after lavage, repair of the gastrostomy wound, and a period of total parenteral nutrition but will be unable to have continuous ambulatory peritoneal dialysis in future.

This case shows that percutaneous endoscopic gastrostomy feeding should be used with caution in chronic renal impairment as displacement of the catheter may have serious consequences for future dialysis and, hence, quality of life. Nasogastric or

intravenous feeding continues to have a role in such circumstances.

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AUTHORS' REPLY.—It is a pity that B J Moran and H T Khawaja did not read our study more carefully. Patients were randomised to percutaneous endoscopic gastrostomy or nasogastric tube feeding at first contact and had not received enteral nutrition before randomisation. During the minimum four weeks of dysphagia to fulfil the criteria for entry to the study most patients could take a little oral nutrition with intravenous fluid supplements if necessary. Enteral nutrition was considered if the patient's dysphagia progressed or no improvement had occurred after at least four weeks. Patients who were unhappy about either method of tube feeding were treated outside the study. Those patients who failed with nasogastric tube feeding (mean 5.2 days) were immediately switched to percutaneous endoscopic gastrostomy feeding.

Our study did not attempt to address the difficult ethical problem of when to provide nutritional support to patients with severe neurological disability. We have found, however, that the quality of life and rehabilitation of patients have been greatly improved by percutaneous endoscopic gastrostomy feeding.

The case described by Peter A Andrews and Michelle Webb illustrates the recognised danger of percutaneous endoscopic gastrostomy feeding in patients receiving continuous ambulatory peritoneal dialysis.¹ This method of dialysis is one of the few contraindications to insertion of a percutaneous endoscopic gastrostomy tube.

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EDITOR,—In their editorial Ian Forgacs and colleagues¹ refer to R H R Park and colleagues' study of percutaneous endoscopic gastrostomy compared with nasogastric tube feeding in patients with persisting neurological dysphagia² and effectively argue the case for percutaneous endoscopic gastrostomy as opposed to long term nasogastric feeding. They state that "although most gastroenterologists should be able to learn the technique, it is far from universally available."

The authors should have mentioned that percutaneous gastrostomy tubes can be easily and quickly inserted as a radiological procedure by one person. The stomach is inflated, usually with a fine bore nasogastric tube, then a needle is inserted percutaneously into the stomach so that a guidewire can be introduced. One or more dilating catheters are advanced over the wire into the stomach and then withdrawn, and a gastrostomy tube is introduced over the wire. The nasogastric tube can then be removed. The success rate and complication rate are similar to those of the endoscopic technique, although the incidence of wound sepsis is believed to be lower as the tube is not contaminated by oral flora before its passage through the abdominal wall.³

The endoscopic technique is indicated when the procedure must be performed at the patient's bedside. The radiological technique is indicated if endoscopic access to the stomach is prevented by an oesophageal tumour, when the radiologist may be able to gain access by using a catheter and shaped guidewire. Except in young children, exposure to radiation is not an issue as the fluoroscopy time can be kept to under five minutes. Tubes placed radiologically can readily be changed, and if reflux proves to be a problem the tube can easily be replaced by one that passes to the jejunum.

In summary, the radiological technique is quick, easily learnt, and, in my view, preferable for most patients to the endoscopic technique. Clinicians should ask their radiological colleagues to provide this service.

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- 1 Forgacs I, Macpherson A, Tibbs C. Percutaneous endoscopic gastrostomy. *BMJ* 1992;304:1395-6. (30 May.)
- 2 Park RHR, Allison MC, Lang J, Spence E, Morris AJ, Danesh BJZ, *et al.* Randomised comparison of percutaneous endoscopic gastrostomy and nasogastric tube feeding in patients with persisting neurological dysphagia. *BMJ* 1992;304:1406-9. (30 May.)
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EDITOR.—Several statements and assertions in the editorial on percutaneous endoscopic gastrostomy demand comment.¹ It is commonly agreed that percutaneous endoscopic gastrostomy is a useful technique that may be appropriate to consider for any patient requiring long term (more than three or four weeks) enteral nutrition, and the study by R H R Parks and colleagues confirms this.² The subtitle and tone of the editorial, however, are misleading as they seem to imply that nasogastric feeding has no place at all in enteral nutrition. This is of course untrue as most patients given enteral nutrition are fed for less than four weeks,^{3,4} when percutaneous endoscopic gastrostomy would be inappropriate. The main indication for enteral nutrition is not difficulty in swallowing due to neurological disease—that is the main indication for long term feeding. Medical and surgical patients and patients in intensive therapy units who cannot or will not eat on a short term basis make up most patients requiring enteral nutrition.^{3,4} Such patients tolerate fine bore naso-enteral tubes well with minimal complications.

In the only randomised controlled trial of operative (surgical) gastrostomy versus percutaneous endoscopic gastrostomy the complication rates were the same, possibly because the operative gastrostomy was done when possible under local anaesthesia.⁵ That study confirmed that most of the morbidity associated with operative gastrostomy previously reported was probably related to general anaesthesia. Percutaneous endoscopic gastrostomy tubes were cheaper to place than operative gastrostomy tubes.

A description of insertion of a percutaneous endoscopic gastrostomy tube is given, but it is not made clear that this represents only one example of several differing techniques. Percutaneous endoscopic gastrostomy has become widely used in the United Kingdom: in 1988 only 6% of centres replying to a national survey on nutrition practices used percutaneous endoscopic gastrostomy, compared with 74% in 1991.⁶ It is important to remember that percutaneous endoscopic gastrostomy is only one of many useful techniques for long term feeding. For example, radiologists are having considerable success in placing gastrostomy tubes under fluoroscopic control.⁷

Although most of us don't like the image of elderly patients with their hands bandaged to the

side of the bed, insertion of a percutaneous endoscopic gastrostomy tube will not necessarily prevent this as these tubes may themselves be pulled out by a determined patient—indeed, some authorities believe that psychosis and dementia are relative contraindications to insertion.⁸

Thus percutaneous endoscopic gastrostomy is not the end of the line for nasogastric feeding but an example of one of several useful techniques that may be considered for long term enteral feeding. Nasoenteral tubes will continue to provide the main route of access for most patients requiring enteral nutrition.

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- 1 Forgacs I, Macpherson A, Tibbs C. Percutaneous endoscopic gastrostomy. *BMJ* 1992;304:1395-6. (30 May.)
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AUTHOR'S REPLY.—Jason Payne-James may have read our editorial rather too closely. It is, of course, important to distinguish the functions of an editorial from those of a detailed review. The purpose of our piece, to which Payne-James takes such exception, was to introduce percutaneous endoscopic gastrostomy and not to review the whole topic of enteral nutrition in hospital practice.

As our article was written to accompany the study by Park and colleagues it seems curious that it could be interpreted as recommending that endoscopic gastrostomy feeding should replace nasogastric feeding for short term nutritional support over just a few days. Even the most ardent gastroenterologist might balk at such a suggestion.

It is correct to suggest that the main hazards of operative gastrostomy are related to the anaesthetic. But it has always seemed a little unfair to blame the anaesthetist for a postoperative death when he or she was called into action only because a surgeon decided to perform an operation. Despite Payne-James's comments we continue to recommend endoscopic rather than operative gastrostomy for most of our patients.

A comprehensive review of enteral nutrition would surely have emphasised the radiologist's potential in siting gastrostomy tubes. Many endoscopists faced with ever increasing workloads would welcome the help of colleagues from the x ray department in lightening their burden.

The image of a patient with hands bandaged to the sides of the bed was intended to be emotive but does illustrate the point about the continuing discomfort that patients can experience with nasogastric tubes. Our clinical experience of nutrition in hospital practice, like that of the patients in Park and colleagues' study, is that a gastrostomy tube is not only more successful but is better tolerated over the long term than a nasogastric tube. As with any treatment, the patient's mental state must be taken into consideration when the route for nutritional support is being planned.

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Psychosocial problems in epilepsy

EDITOR.—J E Chaplin and colleagues' paper provides interesting evidence on the psychosocial problems of people in whom epilepsy is newly diagnosed.¹ Similar evidence of good adjustment is available for another group of people with epilepsy—those in whom it is in remission—from the Medical Research Council's antiepileptic drug withdrawal study.² As part of this study, information was collected from over 600 patients about employment, social relationships, leisure activities, feelings of stigma, and general wellbeing. The study was a randomised clinical trial, and the patients in it were a selected group, but comparison of their clinical and demographic characteristics, as well as their responses to the psychosocial questionnaire, with those of patients who were not randomised indicated that the results can be generalised to less selected populations.

Overall, in this group of patients levels of distress over epilepsy seemed to be low.³ Respondents emerged as being well adjusted to their epilepsy and experiencing few problems because of it. Rates of employment were comparable with those in the general population, and few patients reported any instances of discrimination at work attributable to epilepsy. Although the rate of marriage and cohabitation was lower than in the general population, it was higher than that reported for people with chronic epilepsy, and the proportion of people living alone did not differ from that in the population as a whole. Few patients reported any restrictions in their social life because of their epilepsy, and few reported feeling stigmatised because of it. Like Chaplin and colleagues, however, the Medical Research Council's study found that the extent of reported problems was related to the recency of the last seizure.

Similar findings of good adjustment have been reported by Trostle *et al*, who also found little evidence of psychosocial impairment among the population they studied.⁴ These findings of good adjustment are important and contrast greatly with the view of epilepsy as universally stigmatising. The process of adjusting to epilepsy is one about which we know relatively little, and further research is needed. We await with interest the results of the five year follow up of the patients in the national general practice study.

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- 1 Chaplin JE, Lasso RY, Shorvon SD, Floyd M. National general practice study of epilepsy: the social and psychological effects of a recent diagnosis of epilepsy. *BMJ* 1992;304:1416-8. (30 May.)
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Treating obesity in children

EDITOR.—We are concerned about the treatment of obesity in children. A patient of ours, a 13 year old girl, was referred by her general practitioner for assessment of right sided abdominal pain. In the referral letter the general practitioner stated that she was not taking any medication. She was admitted for observation, and the pain settled spontaneously.

On close questioning for clerking on admission she admitted that she took tablets because her "metabolism was slow," resulting in her being overweight. Her mother told us that she had always been fat as a baby, and had first been treated for obesity at the age of 4. She was currently being treated at a private slimming clinic and had been prescribed a 12 month course of "thyroid tablets," but she did not know the dosage. Her father brought the drugs in: thyroxine sodium 100 µg daily, phentermine 15 mg daily, and "Armour thyroid" two tablets daily. On repeat questioning the patient did not have any thyroid, cardiac, gastrointestinal, or menstrual irregularities. She had not had any blood tests at the private clinic. Her height was on the 10th centile for her age and her weight just below the 50th centile.

Thyroxine sodium is licensed for use in hypothyroidism.¹ Phentermine is structurally and pharmacologically related to the amphetamines. It is "an anorectic agent intended for short term use as an adjunct to the treatment of patients with moderate to severe obesity for whom close support and supervision are also to be provided."² It is not recommended for use in children. We could find no reference to using these drugs to treat obesity in children.

In addition to the obvious dangers of these drugs being prescribed to such a patient it is of concern that the general practitioner was not informed that his patient was being prescribed these drugs and that neither the patient nor her mother knew the exact nature or dosage of the drugs. The matter is being taken further by one of the consultant paediatricians, and we hope that such practices may be stamped out.

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- 1 Walker G, ed. *ABPI data sheet compendium 1991-2*. London: Datapharm, 1991.

Coronary vasospasm and sumatriptan

EDITOR.—F Willett and colleagues describe an episode of coronary vasospasm after subcutaneous administration of sumatriptan.¹ The details of this case are well known to Glaxo.

The patient under discussion had complained of intermittent retrosternal chest pain for 11 months before admission in December 1991, not only in relation to methysergide and sumatriptan but also on waking. In August 1991 atypical chest pain was noted. As a consequence of the challenge with sumatriptan that the authors describe the chest pain was confirmed as Prinzmetal's angina, a point omitted in the published drug point. It is clear in retrospect, however, that the underlying problem predated treatment with sumatriptan by several months.

Although chest symptoms have been noted with sumatriptan, extensive clinical investigations have not shown ischaemic electrocardiographic changes in otherwise healthy patients after subcutaneous or oral administration. Postmarketing experience has likewise failed to show any evidence of myocardial ischaemia in the absence of symptomatic cardiac disease. Furthermore, although Willett and colleagues refer to a second report of coronary vasospasm, that report was of a patient with a history of angina and heavy smoking who was treated on several occasions with sumatriptan without chest pain but experienced a myocardial infarction two weeks after the last dose. A causal relation is therefore considered to be unlikely.

Underlying ischaemic heart disease and Prinz-