

since ischaemia or procaine block of peripheral nerves usually abolishes it.<sup>3,4</sup> Toxic reactions to penicillamine, especially haematological, renal, and gastrointestinal disturbances, occur in patients with rheumatoid arthritis. Neurological complications are relatively uncommon. Polymyositis and myasthenia gravis have been reported, but both were excluded in our patient. The decremental EMG response found only at higher stimulation rates, in the absence of single fibre EMG abnormalities, is unlike that found in myasthenia gravis or Eaton-Lambert syndrome.<sup>5</sup> To recognise neuromyotonia requires careful clinical and EMG examination since it is easily mistaken for myasthenia gravis.

We thank Dr C G Barnes for referring this patient.

<sup>1</sup> Multicentre Trial Group, *Lancet*, 1973, 1, 275.

<sup>2</sup> Halverson, P B, et al, *Journal of the American Medical Association*, 1970, 240, 1810.

<sup>3</sup> Willis, W E, et al, *Archives of Neurology (Chicago)*, 1970, 22, 430.

<sup>4</sup> Denny-Brown, D E, and Foley, J M, *Transactions of the Association of American Physicians*, 1948, 61, 88.

<sup>5</sup> Schwartz, M S, and Stalberg, E, *Neurology (Minneapolis)*, 1975, 12, 964.

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## Age and prognosis in breast cancer

Contrary to previously stated opinion,<sup>1</sup> it has recently been suggested that breast cancer is more rapidly lethal with increasing age at presentation<sup>2</sup> and that this might be explained by an age-related difference in tumour biology or host response.<sup>3</sup> We did an actuarial analysis of the relationship between age at presentation with breast cancer and survival.

### Patients, methods, and results

Up to 31 December 1977, 807 patients with primary breast cancer had presented to our unit. Of these, 214 (26.5%) were aged 21-49, 382 (47.3%) were aged 50-59, and 211 (26.2%) were aged 70-93. All were screened on presentation for metastatic disease, by methods we have previously described,<sup>4</sup> and staged according to the TNM classification. Survival data for the three age groups were determined by actuarial analysis. Thirty (3.7%) patients were excluded from the study because they died of causes other than breast cancer. A  $\chi^2$  test was used to establish whether there was any linear trend for the

Correlation of age at presentation with breast cancer and incidence of advanced local disease, incidence of metastatic disease, and estimated 10-year survival

| Age at presentation (years) | Advanced local disease (%) | Metastatic disease (%) | Estimated 10-year survival (%) |
|-----------------------------|----------------------------|------------------------|--------------------------------|
| 21-49                       | 34.1                       | 7.5                    | 53.0                           |
| 50-69                       | 48.7                       | 13.6                   | 42.5                           |
| 70-93                       | 59.7                       | 16.6                   | 33.9                           |

incidence of advanced local disease or metastatic disease at presentation and to establish statistical significance between the estimated 10-year survival in the three age groups.

Patients had more advanced local disease with increasing age at presentation. The incidence of T3 and T4 tumours in the three age groups is shown in the table ( $P < 0.001$ ). The incidence of metastatic disease at presentation also significantly increased with age ( $0.001 < P < 0.01$ ). Actuarial analysis confirmed that the estimated 10-year survival was significantly reduced with increasing age at presentation (table). But when the analysis was repeated excluding patients with evidence of metastatic disease at presentation there was no statistical difference between the actuarial curves of the three age groups ( $P = 0.59$ ).

### Comment

With increasing age at presentation of breast cancer the patients had more advanced local disease, a higher incidence of metastatic disease, and a lower estimated 10-year survival. But when patients with metastatic disease at presentation were excluded there was no statistical difference in estimated survival between the three age groups. This evidence suggests that the deteriorating prognosis with increasing age was due to a more advanced stage of disease at presentation and not to age-related tumour or host factors.

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<sup>1</sup> Papadrianos, E, Cooley, E, and Haagensen, C D, *Annals of Surgery*, 1965, 161, 189.

<sup>2</sup> Mueller, C B, Ames, F, and Anderson, G D, *Surgery*, 1978, 83, 123.

<sup>3</sup> *British Medical Journal*, 1979, 1, 211.

<sup>4</sup> Thomas, J M, et al, *British Medical Journal*, 1978, 2, 157.

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## Diverticular disease of the colon in Africans

Diverticular disease of the colon has been thought to be almost unknown in Africans.<sup>1</sup> Personal knowledge of six cases,<sup>2</sup> however, suggested that the condition might not be so uncommon, and so a search for further cases was instituted.

### Materials, methods, and results

The findings of 226 barium-enema examinations performed on adults at this hospital between January 1976 and February 1978 were reviewed. The table gives the results.

A total of 15 of the 226 patients had diverticular disease. This was the commonest single diagnosis made on barium-enema examination, as the "non-specific colitis" group almost certainly contained several different disease entities. The age range of patients with diverticular disease was 29-80 (mean 41) years and that of all patients in the series 18-80 (mean 40) years. Five patients with diverticular disease were aged 40 or under. This age incidence is lower than would be expected in a developed country.<sup>3</sup>

Results of 226 barium-enema examinations performed on adult Africans over two years

|                                   | No of patients |                             | No of patients |
|-----------------------------------|----------------|-----------------------------|----------------|
| Normal                            | 155            | Granuloma                   | 6              |
| Diverticular disease              | 15             | Ulcerative colitis          | 4              |
| Non-specific inflammatory disease | 21             | Other                       | 5              |
| Carcinoma                         | 7              | Unsatisfactory examinations | 13             |

### Comment

Diverticular disease of the colon was the commonest barium-enema diagnosis made at this hospital during the two years. Since the condition is considered to be rare in Africans<sup>1</sup> the finding suggests either an increasing incidence or lack of recognition in the past. The rarity of diverticular disease in Africans has been attributed to their high-fibre diet.<sup>1,4</sup> Dietary histories could not be obtained in this retrospective survey, but general observations and discussions with African colleagues suggest that the diet of even urban Kenyan Africans is still high in fibre by Western standards, although there has been an increasing use of sifted maize flour and refined sugar in recent years. If as Burkitt<sup>4</sup> suggests the greater part of a lifetime or about 40 years in a responsible environment is required to produce

diverticular disease then the dietary theory would not explain the occurrence of the disease in five young patients in this series.

Possibly the most important factor in diagnosing diverticular disease is the availability of radiological facilities. As the population coverage of health services in Kenya is not expected to reach even 50% by 1984<sup>5</sup> very few people are likely to undergo barium-enema examination. This is especially true of elderly people (those most at risk), who live largely in rural areas.

It is expected that as more barium-enema examinations are carried out more cases will come to light.

I thank Professor Alexander Margulis, of the University of California, San Francisco, for reviewing the films.

<sup>1</sup> Painter, N S, and Burkitt, D P, *British Medical Journal*, 1971, 2, 450.

<sup>2</sup> Calder, J F, and Wasunna, A E O, *East African Medical Journal*, 1978, 55, 579.

<sup>3</sup> Manousos, O N, Truelove, S C, and Lumsden, K, *British Medical Journal*, 1967, 3, 762.

<sup>4</sup> Burkitt, D P, *Lancet*, 1969, 2, 1229.

<sup>5</sup> Were, M K, *East African Medical Journal*, 1977, 54, 524.

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## Intact removal of phytobezoar using fiberoptic endoscope in patient with gastric atony

Phytobezoars are concretions of vegetable material in the gastrointestinal tract. They carry a high risk of complications,<sup>1</sup> so that removal is advisable. Formerly gastrotomy was required but recently medical methods of treatment proving effective have included enzymatic digestion and endoscopic fragmentation.<sup>2</sup>

### Case report

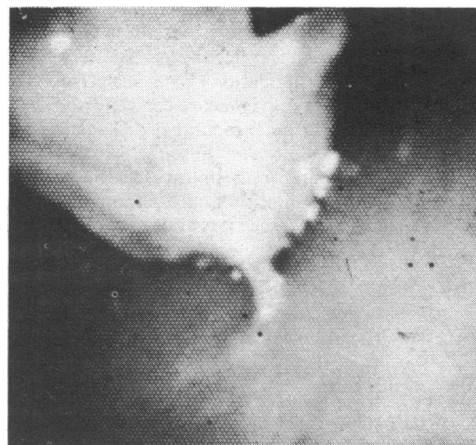
A 58-year-old man with longstanding ischaemic heart disease was admitted with chest pain. His treatment included metoprolol, glyceryl trinitrate, and perhexiline. For nine months he had been impotent and had episodic diarrhoea and peripheral paraesthesia without objective sensory loss. He also gave a seven-month history of anorexia and twice-weekly episodes of crampy epigastric pain relieved by vomiting. On questioning he admitted consuming large quantities of alcohol over several decades. He would also eat an orange each day, the peel of which he would swallow in quarters without mastication.

Barium-meal examination showed a mobile mass in the antrum. Gastroscopy was performed using an Olympus GIF-D3 panendoscope, which disclosed an orange-coloured bezoar wedged in the pylorus (figure). A polypectomy snare was passed around the bezoar, which was then withdrawn with the endoscope. Oesophagogastroduodenoscopy was performed immediately, the only abnormality noted being mild inflammation around the pylorus. The bezoar measured 7 × 3 cm and histologically was shown to consist of vegetable fibre. After removal of the phytobezoar the patient reported a dramatic return in appetite.

Investigations showed raised activities of serum transaminases, alkaline phosphatase, and  $\gamma$ -glutamyl transferase. The hospital records had shown intermittently raised activities of the serum transaminases dating back some 18 months, which had become more pronounced after perhexiline treatment was begun 14 months before the bezoar was removed. Bromsulphthalein excretion was also impaired, with 6% remaining at 45 minutes (normal < 3%). Glucose tolerance was normal. Gastric emptying (after removal) of an isotopically labelled mixed liquid (milk) and solid (egg) meal was extremely slow. The percentages remaining in the stomach 70 minutes after eating were 52.7% for milk and 97.2% for egg, both considerably higher than normal values.<sup>3</sup>

### Comment

With the exception of the persimmon variety, phytobezoars consist of fibrous cellulose glued together by a proteinaceous cement.<sup>4</sup> Our patient regularly swallowed large segments of orange pith without mastication, thereby supplying the components. Impaired gastric emptying is also relevant to the formation of phytobezoars, which occur most frequently after gastric surgery, especially when vagotomy is



Endoscopic photograph of phytobezoar wedged in pylorus.

performed.<sup>1</sup> This patient did not undergo gastric surgery and had no organic obstruction of the gastric outlet, yet clear gastric retention was shown after a mixed meal.

The reason for this gastric atony is not clear. Perhexiline may cause peripheral neuropathy and impotence.<sup>4</sup> This patient complained of paraesthesia, impotence, and diarrhoea, possibly reflecting an autonomic neuropathy induced by perhexiline. His intake of large quantities of alcohol, however, may also be relevant, since alcoholics show disturbances of gastrointestinal motility similar to those found in diabetics.<sup>5</sup> Some abnormality in hepatic function predated the perhexiline treatment yet may have been aggravated by the drug.<sup>4</sup>

Endoscopy has been used to diagnose and fragment bezoars,<sup>2</sup> but we have been unable to find any reports in English of the successful removal of an intact gastric bezoar using our method. The shape, size, and fairly soft consistency made this phytobezoar a likely candidate for snaring. There would be considerable risk, however, in removing larger or more rigid bezoars using this method. In any case, bezoarectomy is a further possible endoscopic procedure.

<sup>1</sup> Raffin, S, in *Gastrointestinal Disease*, ed M H Sleisenger and J S Fordtran, ch 49, p 616. Philadelphia, W B Saunders, 1973.

<sup>2</sup> Wortzel, E, Ferrer, J P, and De Luca, R F, *American Journal of Gastroenterology*, 1977, 67, 565.

<sup>3</sup> Ostick, D G, Howe, K, and Cowley, D J, *British Journal of Surgery*, 1976, 63, 159.

<sup>4</sup> *Martindale: The Extra Pharmacopoeia*, ed A Wade, 27th edn, p 1655. London, Pharmaceutical Press, 1977.

<sup>5</sup> McNally, E F, Reinhard, A E, and Schwartz, P E, *American Journal of Digestive Diseases*, 1969, 14, 163.

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ONE HUNDRED YEARS AGO In a memoir presented to the Academy of Sciences and Literature of Lyons, Dr Henry H Dor, a well-known oculist, contests the view held by Mr Gladstone, and by Geiger and Magnus of Boston, that our ancestors were colour-blind: a view deduced from their writings and from the different names which they have given to colours. Dr Dor endeavours to demonstrate that now, as in the time of Homer, poets insist too little upon the indications of the colours, but much more upon their luminous intensity. Moreover, M Dor says that persons who do not possess any knowledge of physics find much difficulty in distinguishing the colours of the rainbow, and only see in it three or four colours, in place of the seven classical colours of its composition. Further, it results even from the very study of the Assyrian and Egyptian monuments, that those nations had not only perceived, but imitated, the greater part of the colours of which we are at present cognisant. (*British Medical Journal*, 1879.)