

policlinic is also disadvantaged, having to make do with an antediluvian x ray machine. The electroencephalograph there has to be kept in use for 11 hours a day though at some hospitals it would be employed for only three or four investigations.

Furthermore, on account of the norms for consultation time (established in 1964 for adult units), the staff are under immense pressure, in stark contrast with the position at a functionally similar but high status establishment, the USSR Academy of Medical Sciences' Institute of Paediatrics. There 50 children are seen each day in 11 rooms, while the policlinic, also with 11 rooms, sees 500 patients. "It is hard to get in there," said the chief doctor, "so they all come to us and have the bother of waiting in our queues, and with that caseload our doctors are working only for love of their fellow men." In explanation she added that she had neither the authority nor the funds to make incentive payments.

Throughout the network, financial control by the administrative agencies seems to extend to even the smallest detail. "Minor works, replacement of plumbing, prescription pads, ball point pens, refills—everything is a problem." The fact that heads of pay policlinics are completely hamstrung in this respect was seen as paradoxical by Dr Khutornenko. "We give enormous profits to the government," he said, "but we cannot spend a single rouble independently."

Poor relations

In fact, as the article notes, Moscow's 20 pay policlinics make an annual net profit of one million roubles and, in theory, all of it should be channelled back into developing and equipping them. What actually happens, however, is that Moscow's chief health service administration limits its spending to 200 000 roubles a year. The consequences of that ceiling can only be compounded by the administrators' reported favouritism towards their budget units. This discrimination operates generally in respect of the supply of

equipment, which is frequently difficult to obtain. But even the accommodation that the children's policlinic had managed to have built was requisitioned for the use of the budget service—without reimbursement of its cost.

In the administration, *Izvestiya's* journalist contends, although there are personnel responsible for the pay policlinics no one is effectively promoting their interests. The negative comment on the relevant directorate's chief (G Menshakov) is that "acquaintance with his work produces an impression of complete helplessness."

One inference to be drawn from the content of the investigation is that a management shake up in the directorate is imminent, together with a degree of freedom for chief doctors to deploy profits as they see fit in order to improve the service. Incidentally, the latter arrangement would not be a revolutionary break with custom since it already obtains in several ordinary budget units.

Quite apart from its factual content, though, the article seems to demonstrate a significant doctrinal shift in official thinking about pay policlinics. That view would make sense of the article's proposition that "pay medicine is a great assistance to free medicine" and of its implicit suggestions that the contemporary role for these units is to be demand oriented centres of excellence where standards are set for other policlinics. There is a critical minimum prerequisite, however, for the realisation of that role. As the article puts it, "for them actually to become establishments of high quality medical service, all the laws of the service sector must be extended to them."

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Reference

- 1 Ivchenko L. "Bednie" millioneri: kak pomoch khozraschyotnoi poliklinike. *Izvestiya* 1986 January 21:3.

Lesson of the Week

Unsuspected giardiasis as a cause of malnutrition and diarrhoea in the elderly

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Although infestation with *Giardia lamblia* is a recognised cause of failure to thrive in children, it may be underestimated as a cause of gastrointestinal symptoms in adults.¹ We describe three elderly patients in whom unsuspected infestation with *G lamblia* was detected on biopsy of the small bowel.

Infestation with *Giardia lamblia* should be recognised as a potential cause of malabsorption and diarrhoea in malnourished elderly patients

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Case reports

Case 1—A 79 year old man was admitted with a one year history of anorexia and weight loss associated with back and leg pain. Physical examination showed peripheral oedema, proximal muscle weakness, and clinical features of emphysema. He had biochemical evidence of osteomalacia (ionised calcium concentration 1.07 mmol/l (4.3 mg/100 ml) (normal 1.17-1.34 mmol/l (4.7-5.4 mg/100 ml)) and alkaline phosphatase activity 244 IU/l (normal 30-130 IU/l)). A barium follow through examination

showed classical features of malabsorption, and a small bowel biopsy was performed to exclude coeliac disease. Although the villous pattern was normal, the intervillous spaces contained numerous parasites, which were identified as *G lamblia*. Treatment with metronidazole and enteral nutritional support were followed by rapid clinical improvement and weight gain of 5 kg in three weeks.

Case 2—A 69 year old woman was admitted with a two week history of diarrhoea and vomiting associated with a four week history of increasing lethargy, breathlessness, and weight loss of 7 kg. She had suffered from rheumatoid arthritis for 10 years, which had been unsuccessfully treated with gold and penicillamine. On admission she was severely anaemic (haemoglobin concentration 51 g/l) with hypocalcaemia (1.92 mmol/l (7.7 mg/100 ml); normal 2.25-2.75 mmol/l (9.0-11.0 mg/100 ml)), hypalbuminaemia (29 g/l (normal 34-50 g/l)), and low serum folate concentration (0.5 µg/l (normal 2.0-14.0 µg/l)). Results of three stool examinations were negative for ova, cysts, and parasites; cultures yielded negative results. A barium meal examination suggested the presence of gastric ulcer and showed duodenal diverticula. At endoscopy no ulcer was found, but biopsy of the small bowel showed infestation with *G lamblia*; no appreciable bacterial contamination was found in the small bowel. She regained weight and her nutritional deficiencies improved after treatment with metronidazole, blood transfusion, and concomitant enteral nutrition.

Case 3—A 69 year old man presented with haematemesis and melaena, which had been preceded by dyspepsia for one year. He was clinically anaemic (haemoglobin concentration 102 g/l) with low red cell folate (15 µg/l (normal 150-600 µg/l)) and serum calcium concentrations (2.12 mmol/l (8.5 mg/100 ml); normal 2.25-2.75 mmol/l (9.0-11.0 mg/100 ml)). Endoscopy showed a duodenal ulcer with evidence of recent bleeding. Further endoscopy after six weeks of treatment with an H₂ receptor antagonist showed only moderate duodenitis. Biopsy of this area showed florid infestation with *G lamblia*. Treatment with metronidazole was followed by weight gain of 4.5 kg; serum calcium and folate concentrations returned to normal.

Discussion

Giardiasis is rarely considered to be the cause of diarrhoea or malnutrition in elderly patients. Indeed, it is not mentioned in a major textbook on gastrointestinal diseases in the elderly.² These cases show that it may present in a wide variety of ways, ranging from diarrhoea and vomiting (case 2) to the "off legs" syndrome

(case 1); although the third patient did not have any obviously related symptoms at the time of diagnosis, he did have low serum and red cell folate and low serum calcium concentrations, suggesting chronic infestation. None of the patients gave a history of foreign travel, and serum immunoglobulin concentrations were normal in each case. Low serum calcium and folate concentrations were consistent features and aroused suspicion of underlying malabsorption.

Gastric surgery and hypogammaglobulinaemia are acknowledged predisposing conditions to giardiasis in younger patients, partly due to reduced secretion of gastric acid,³ but none of our patients had evidence of a recognised predisposing factor. Hypochlorhydria related to age is a possible explanation for bacterial colonisation of the small bowel in elderly patients with or without diverticula⁴ and could dispose to infestation with giardia in this age group. Examination of fresh stool failed to show the presence of cysts in any of these patients and is less reliable than duodenal intubation or biopsy in diagnosing giardiasis.⁵ All three patients responded satisfactorily to a course of metronidazole, with objective improvements in weight, clinical state, and biochemical measurements.

Infestation with giardia should be regarded as a further potential cause of diarrhoea and malnutrition in the elderly and requires exclusion by biopsy of the small bowel in patients with clinical and laboratory features suggestive of malabsorption.

We thank Dr W Carson-Dick for permission to report on one of his patients.

References

- 1 Eastham EJ, Douglas AP, Watson AJ. Diagnosis of *Giardia lamblia* infestation as a cause of diarrhoea. *Lancet* 1976;ii:950-1.
- 2 James OFW, ed. Gastrointestinal disorders in the elderly. *Clin Gastroenterol* 1985;14:635-886.
- 3 Anonymous. Battles against giardia in gut mucosa [Editorial]. *Lancet* 1982;ii:527-8.
- 4 Roberts SH, James O, Jarvis EH. Bacterial overgrowth syndrome without "blind loop." A cause for malnutrition in the elderly. *Lancet* 1977;ii:1193-5.
- 5 Gillon J. Giardiasis: review of epidemiology, pathogenetic mechanisms and host responses. *Q J Med* 1984;209:29-39.

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The consensus of opinion regarding medicinal ¹³¹-iodine for thyrotoxicosis is that there is no increase in thyroid malignancies attributable to this treatment. Is there good evidence to support the widespread belief that nuclear accident derived ¹³¹-iodine causes thyroid cancers and if so is there not a discrepancy here?

The difficulty here is consideration of either individual risk or population risk. The International Commission on Radiological Protection system for dose limitation has three primary elements: justification, optimisation, and dose limits.¹ The justification for using any process involving radiation is that it is going to do some good. In the case of administering radioiodine in the treatment of thyrotoxicosis the individual undeniably benefits, and the risk of subsequent development of malignant disease has been shown over several thousands of patients treated to be acceptably small.^{2,3} By contrast, exposure to radioactive iodine from a nuclear accident exposes the entire population, or a major part of it. The justification which is given for the use of nuclear power is that it provides a cheap source of the energy which our complex society requires. The exposure of the population to radiation after a nuclear accident is by definition unplanned. Although the risk to the individual of the subsequent development of thyroid cancer may be small, over the whole population the number of thyroid cancers produced may well be greater than the "spontaneous" incidence. Data on such risks for small radiation exposures are far less precise and the numbers of "extra" cancers widely quoted probably represent a "worst case" estimate—and are compatible with the excess risk actually being zero. Only the body politic can judge whether the perceived risks of rare accidents in the nuclear industry exceed the potential benefits from that industry.—R J BERRY, professor of oncology, London.

- 2 Maxon HR, Thomas SR, Saenger EL, Boucher CR, Kereiakes JG. Ionizing irradiation and the induction of clinically significant disease in the human thyroid gland. *Am J Med* 1977;63:967-78.
- 3 Shore RE. Radiation induced thyroid cancer. In: Schottenfeld D, Fraumeni JF, jr, eds. *Cancer epidemiology and prevention*. Philadelphia: W B Saunders, 1982:837-54.

The ingestion of pathogenic bacteria, viruses, amoebic cysts, and helminth eggs in drinking water may cause disease in man. Do water filtering elements—for instance Royal Doulton, British Berkefeld—used in water filters clear the water of all these disease causing agents? If these pathogenic agents are retained alive in the filtering candle could a person acquire them in the process of cleaning the "candle?"

This question refers to ceramic water filtering elements in common use in drinking water systems in developing countries. These filters are the size and shape of a large candle and are placed at the bottom of the water collection vessel. They work by providing a physical barrier to any particle, including micro-organisms, larger than about 1 micron in diameter. Eventually the filtration rate decreases because particulate matter clogs the pores of the candle. It must then be removed and scrubbed clean. Newer types of filter contain silver and activated carbon that prevent the retention of viable micro-organisms but older types must be sterilised by boiling before they are put back. So long as the person cleaning the filter avoids oral contact with the filter the risk of infection is considered to be negligible. The manufacturers are unaware of any cases of infection occurring in these circumstances. If, for some reason, the hazard is thought to be especially high the candle could be boiled before as well as after it is scrubbed. The greatest danger of the cleaning process is that people are tempted to drink unfiltered water during the time that the filter is disconnected.—C N MARTYN, environmental epidemiologist, Southampton.

1 Recommendations of the International Commission on Radiological Protection. *Annals of the ICRP* 1977;1:3. (ICRP publication 26.)