clinical situations by skilled nursing care. Assisted feeding by a nasogastric tube or gastrostomy tube is comparable to the use of urinary catheters in that once in place all these tubes are merely passive conduits that require little more than ordinary care and caution.

Moreover, when nutrition and fluids are denied to a patient that patient dies. When medical treatments are abated patients often continue to live—somewhat to the surprise of their physicians.

Clinical practice permits exceptions to such tubal procedures. They may be summarised in two categories: when providing assisted feeding is clinically impossible and when its mode of provision would itself cause radical and extreme pain to the patient.

PETER DOHERTY

Guild of Catholic Doctors,
London NW8 9NH

1 Dyer C. BMA examines persistent vegetative state. *BMJ* 1992;305:853-4. (10 October.)

Radioiodine for hyperthyroidism

EDITOR,—Jayne Franklyn and Michael Sheppard may have overstated the case for radioiodine for hyperthyroidism.¹ It is not entirely true that in Europe, the United States, and Japan thyrotoxicosis is now rarely considered to be an indication for partial thyroidectomy. Indeed, attention has recently been focused on more frequent use of surgical treatment because of its predictable outcome.² Some surgeons never see hypoparathyroidism or recurrent laryngeal nerve damage after surgery for Graves' disease, and the complication of recurrent hyperthyroidism should be much less than the 10% quoted by Franklyn and Sheppard.^{3,4} I agree that the incidence of hypothyroidism may well be 40% after surgery, but after adequate treatment with radioactive iodine the incidence of hypothyroidism may be 60% at one year and 90% at five years.⁵

In discussions of the role of radioactive iodine in hyperthyroidism the indication must be clearly identified because multinodular goitre is relatively unresponsive to this treatment and the pressure symptoms and cosmetic features of a large goitre are unlikely to be improved.

I agree with the authors that the risk of carcinogenesis is probably small; although it is true that radioactive iodine has been given in the United States for over 50 years, careful follow up studies have been of much shorter duration. The much quoted study by Dobyns *et al* was of patients treated between 1946 and 1968 for a maximum of 22 years; the authors stated that a much longer follow up would be necessary to assess the potential risk of malignancy.⁶

To refer to radioiodine as the best treatment option for hyperthyroidism is probably an oversimplification. It is, however, an effective and easily administered treatment for selected patients with Graves' disease, particularly older patients and the small number who have recurrence after failed surgery.

MALCOLM H WHEELER

Department of Surgery,
Cardiff Royal Infirmary,
Cardiff CF2 1SZ

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AUTHORS' REPLY,—We share Malcolm H Wheeler's view that it is important to collect long term data on patients with a history of radioiodine treatment for thyrotoxicosis. We disagree, however, with his comments regarding the use of radioiodine in those with toxic multinodular goitre. Whether higher doses of radioiodine are required in multinodular goitre remains unclear: recommended dose regimens vary from large doses of 740-1850 MBq^{1,2} to standard doses of less than 555 MBq,^{3,4} and few patients are unresponsive to this treatment. In addition, pressure symptoms and cosmetic features are unusual in those with toxic multinodular goitre, and shrinkage of goitre after radioiodine treatment is well recognised.^{5,6}

We believe that surgical treatment of hyperthyroidism by experienced operators remains a useful option in a small number of patients. Nevertheless, recent surveys of thyroid specialists in Europe (including the United Kingdom), North America, and Japan, have shown that less than 5% of specialists consider that hyperthyroidism is an indication for partial thyroidectomy, even in young patients.⁷

J A FRANKLYN
M C SHEPPARD

Department of Medicine,
University of Birmingham,
Queen Elizabeth Hospital,
Birmingham B15 2TH

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EDITOR,—We hope that Jayne Franklyn and Michael Sheppard's editorial outlining the efficacy and safety of radioiodine for hyperthyroidism will encourage use of this treatment option for thyrotoxicosis.¹ We disagree, however, with their statement regarding the risk of infertility after the larger doses of radioactive iodine used in treating thyroid cancer.

We have reported on a 13 year old boy who developed azoospermia due to irreversible testicular germ cell damage after treatment with 12950 MBq of iodine-131 for papillary thyroid carcinoma four years previously.² Handlesman and Turtle have reported testicular damage in adult men after radioiodine for thyroid cancer.³ They found dose dependent spermatogenic damage, with raised gonadotrophin concentrations up to 42 months after radioiodine treatment, and concluded that clinically important effects seemed to be restricted to men who received total doses exceeding 3700 MBq. Eighteen of 66 premenopausal women developed temporary ovarian failure during the first year after iodine-131 ablation treatment for thyroid carcinoma.⁴

These studies suggest that large doses of radioactive iodine do cause gonadal failure in adults and children and that recovery from this damage may

occur, at least in women. Detailed follow up studies of similarly treated patients are required to define the incidence of, and factors governing recovery from, this complication.

DOMHNALL O'HALLORAN
STEPHEN M SHALET

Department of Medicine and Endocrinology,
Christie Hospital NHS Trust,
Manchester M20 9BX

- 1 Franklyn J, Sheppard M. Radioiodine for hyperthyroidism. *BMJ* 1992;305:727-8. (26 September.)
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Diarrhoea during treatment with clozapine

EDITOR,—R J Harvey and colleagues mention that "Because agranulocytosis occurs in 2-3% of patients (with a mortality of up to 35%), the drug can be dispensed only if regular blood count monitoring is performed by the pharmaceutical company."¹ I believe that this is a misleading statement as I assume the 35% alluded to is the worldwide mortality of patients with agranulocytosis, including cases before routine monitoring was introduced.²

The current state of risk in the United Kingdom is that out of over 3000 patients who have received clozapine only one has died, and this death was not totally related to the agranulocytosis. This represents a risk rate of less than 0.03% in all clozapine patients in Britain, and given that 2-3% will have developed neutropenia then the risk even to them would be less than 0.11%.

The accepted risk of agranulocytosis for conventional neuroleptic agents is 0.1%, and these drugs are unmonitored and often even unrecognised. The suicide rate for chronic schizophrenia is 5%,³ so it is probable that clozapine actually reduces mortality by more successfully dealing with the patient's negative symptoms.

I think that with monitoring clozapine is not only safe but also a valuable adjunct for the 20% of schizophrenic patients who are deemed untreatable, a statement with which the Committee on Safety of Medicines seems content.

MICHAEL LAUNER

Burnley BB11 2RF

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Analgesia after surgery

EDITOR,—Michael L Snaith recommends avoiding non-steroidal anti-inflammatory drugs perioperatively because of concerns regarding impaired wound healing but concedes that there is no strong evidence that this problem is of clinical importance.¹ This advice may be intended in relation to chronic administration of non-steroidal anti-inflammatory drugs in rheumatological and degenerative disorders, but if it is followed universally a much larger group of patients would be denied the benefits of these drugs. Snaith suggests that alternative analgesics, presumably opioids, be used in the perioperative period,