

There are good reasons to question whether in breast carcinoma it is good advice to advocate adherence to "the well-tryed and trustworthy methods." To advise the continued application of a method which in at least half the cases cannot cure, in many must disseminate malignant cells over the chest wall, and at the best palliates at the cost of mutilation, we should require more than a respect for the practice of our forerunners.

In spite of the considerable weaknesses of the radical operation, it may be that this operation by expeditiously removing a mass of metastasizing tumour does more good than harm, but so far no convincing series free of the taint of selection has yet appeared. No series has yet shown beyond reasonable doubt that pre- or post-operative radiation convincingly improves the survival rate. Our personal views expressed above convince us that there is an urgent need for an investigation on the broadest possible basis to determine the optimum management of breast carcinoma. We envisage a scheme very much wider than local mastectomy with irradiation versus radical mastectomy. It should include a study of the factors which may influence the activity or otherwise of breast tumours and their metastases as well as prospective study of the treatment of "operable" and "inoperable" cases. It is to be hoped that the Medical Research Council as the most appropriate body will pursue the matter.—We are, etc.,

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#### REFERENCES

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- United Birmingham Hospitals Annual Cancer Report, 1957, 111.
- Handley, R. S., *Proc. roy. Soc. Med.*, 1952, 45, 565.
- Wangensteen, O. H., *Proceedings of the Second Int. Cancer Conf., Cincinnati*, 1952, 1, 230.

#### Skin Necrosis from L-Noradrenaline

SIR,—In their article on the use of pressor agents in shock in myocardial infarction Drs. O. Garai and K. Shirley Smith (*Journal*, February 1, p. 247) again emphasize the potential dangers of leakage of L-noradrenaline into the tissues adjacent to the site of injection; local pallor may be succeeded by skin necrosis.

Recently Dr. L. Pelmer<sup>1</sup> has described the use of piperoxane hydrochloride as a measure to counteract these effects. The method consists of multiple subcutaneous injections about the vein with a solution of piperoxane hydrochloride in a dilution of 5 mg. in 20 ml. of normal saline. The amount required varies from 20–30 ml. and is followed by a quick return of the skin colour to the ischaemic area. The method is free from danger. Piperoxane elevates the blood pressure only in the presence of a phaeochromocytoma. The author also refers to the use of hyaluronidase with phentolamine, but from his experience considers that the hyaluronidase may produce a widespread diffusion of both the L-noradrenaline and the vasodilator and so lead to a further increase in the ischaemic area.—We are, etc.,

P. DUTTON.  
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#### REFERENCE

- Pelmer, L., *J. Amer. med. Ass.*, 1957, 165, 444.

#### Intrinsic Factor

SIR,—As Drs. J. B. Stokes and W. R. Pitney (*Journal*, February 8, p. 322) point out, there are two points of practical importance relating to the use of heterologous intrinsic factor. The first and most important is that as a general rule oral preparations of vitamin B<sub>12</sub> and heterologous intrinsic factor have no real place in the treatment of pernicious anaemia because of the variability and unreliability of results. This has been shown in a trial of one such preparation in a large series of patients.<sup>1</sup> Where serial microbiological assays show that serum vitamin B<sub>12</sub> levels are kept within normal limits by this form of treatment it may be used, but this is seldom a practical proposition.

The second point is that heterologous intrinsic factor may give "false negative" results in absorption studies with

labelled vitamin B<sub>12</sub>. I have encountered this phenomenon in a patient with a post-gastrectomy megaloblastic anaemia who had not previously received heterologous intrinsic factor. There is also presumptive evidence of refractoriness in the report by Blackburn *et al.*<sup>2</sup>—a previously untreated case of pernicious anaemia which failed to respond to oral vitamin B<sub>12</sub> and heterologous intrinsic factor but responded to parenteral vitamin B<sub>12</sub>. These cases suggest that the phenomenon is not invariably a result of previous treatment with heterologous intrinsic factor as Drs. Stokes and Pitney assume. Investigations carried out at the Western Infirmary, Glasgow, along with Dr. John Wallace and Dr. John Anderson, have shown that the phenomenon is not related to blood group or secretor status, and, like Drs. Stokes and Pitney, we have not found evidence of a circulating antibody.—I am, etc.,

Glasgow, W.I.

J. F. ADAMS.

#### REFERENCES

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- Blackburn, E. K., Cohen, H., and Wilson, G. M., *Brit. med. J.*, 1955, 2, 461.

#### Halothane Concentration

SIR,—Anaesthetists who use halothane will know that its effects depend markedly on the concentration used. Precise control is only possible with a temperature-compensated vaporizer, and this is expensive. Trichlorethylene bottles may be calibrated by the makers of halothane, but only for a predetermined temperature (20° C.). It is thus advisable to insert a thermometer through the cork of the bottle, which I have done. If fresh gas-flows of 8 litres per minute or more are used, the temperature soon falls to 15° C., but not with flows of 4 litres. My technique with these calibrated bottles is therefore to use an 8-litre flow until the temperature falls to 20° C.; the flow is then reduced to 4 litres per minute and a modified Waters canister,<sup>1</sup> which fits into the standard semi-closed circuit (Magill attachment) of a Boyle's machine, is used. Alternatively, circle absorption may be used. In this way a known percentage of halothane is delivered, which has some advantages.

It is, however, quite a simple matter to calculate the percentage of halothane delivered from any type of vaporizer if a fixed fresh gas-flow is used and the rate of halothane vaporization is observed; the latter is easy with graduated bottles; otherwise measured volumes of halothane should be poured into the vaporizing bottle. The makers of halothane inform me that 1 c.c. of halothane liquid forms 227.5 c.c. of vapour under working conditions (20° C. and 760 mm. Hg). Thus some simple tables can be worked out (see Table).

Fresh Gas-flow litres/min.	No. of Minutes for 1 c.c. of Halothane to be Vaporized	Percentage of Halothane Delivered
2	2	5.68
2	4	2.84
2	8	1.42
2	10	1.13
2	20	0.56
4	2	2.84
4	4	1.42
4	8	0.71
8	1	2.84
8	2	1.42
8	4	0.71
8	5	0.56
10	1	2.27
10	2	1.13
10	3	0.75

Alternatively the following methods may be used:

**Rough Method for High Fresh Gas-flows.**—Using a 10-litre fresh gas-flow, observe how many c.c. of halothane liquid are used during exactly 10 minutes. Multiply this by 0.227. The result is the average percentage of halothane delivered during the period. Alternatively, use a fresh gas-flow of 8 litres for exactly 12½ minutes—the result is the same. As the temperature of the halothane will have fallen, the concentration at the end of the period will clearly be lower than at the start.

**Accurate Method for Low Gas-flows.**—The temperature of the halothane is set at 20° C. before starting (e.g., by using a high gas-flow). A 4-litre flow is now used, and the quantity of halothane in the bottle noted. After 25 minutes the quantity of the halothane used (in c.c.) is noted. This figure multiplied by 0.2275 gives the percentage of halothane. (The volume of halothane vapour in the gas-mixture is so small that it does not materially affect the calculation.)

It will be found that on Boyle's machines the same types of trichlorethylene bottles deliver very different concentrations at a given setting of the lever and plunger. For example, on one machine at a certain setting and gas-flow 1.13% was delivered, while from another apparently identical bottle 2.5% was delivered. The method is also valuable for checking calibrated bottles, as the concentration delivered will be greatly altered if the U-tube is accidentally displaced by quite a small amount. The same method may also be used for calculating percentages of trichlorethylene vapour. 1 c.c. of trichlorethylene forms 248 ml. of vapour; the remaining calculations are the same (i.e., multiply by 0.248 in the two methods above).

Lastly, I have heard that some anaesthetists plug Rowbotham's bottles into circle absorption units. Apart from any other consideration, this is inadvisable, as there is high resistance to gases passing through these bottles, owing to the small ports. Patients should not be made to breathe through these bottles spontaneously, as they were not designed for the purpose.—I am, etc.,

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JOHN BULLOUGH.

#### REFERENCE

- 1 Bullough, J., *Anaesthesia*, 1957, 12, 354.

### Stiff-man Syndrome

SIR,—Having read with interest the article by Dr. Richard Asher on "A Woman with the Stiff-man Syndrome," in the *Journal* of February 1 (p. 265), I am prompted to mention the following case history, which, in view of its rarity and its similarity to the one described by Dr. Asher, may be of interest to your readers.

A 45-year-old physician was admitted to the hospital in New York where I was receiving postgraduate training, with symptoms of severe spasm of the back muscles and both lower extremities. He and his wife and children had come to the U.S.A. in 1943, having succeeded in escaping from racial persecution by the Germans. During his first few years in the States he had gradually become incapacitated and unable to practise medicine, and had finally been rendered bedridden because of spasmodic contractions of the lower limbs and back. Before arriving in America he had apparently been in good health, with no complaints. The course of events after his admission to hospital in 1951 was as follows.

The muscle spasms were fully investigated from every angle, as were the systems throughout the body. Complete and frequent blood pictures and urine studies were made, as were also cerebrospinal fluid analyses. X-rays of all the skeletal structure were taken. Muscle biopsies and electromyograms, including faradic and galvanic testing, were carried out; also neuroradiological investigations including complete myelography in view of the possibility of gross disturbances of the central and peripheral nervous system, but these proved negative. The possibility of parathyroid tumour was considered, as were also hypercalcaemia and hypocalcaemia, but blood calcium and phosphate studies were found to be normal.

The fact that the patient was a member of our own profession increased interest in the case, and his hospital records became voluminous. Many specialists and consultants from the divisions in various departments of medicine and surgery, including anaesthesia, neurology, psychiatry, rehabilitation, and physical medicine, reviewed the case, and in the minds of all of them the same diagnosis kept recurring—namely, gross hysteria—which was a fairly reasonable one in view of the negative results of all the extensive investigations. What baffled everybody, however, was to explain the physiology and pathology of the explosive "titanic" and "tetanic" nature of the spasms (as similarly mentioned by Dr. Asher). Neurologically no abnormality was discovered at any time. The spasms, which appeared to be initiated by even slight emotional upset, and

at times to be without any obvious cause, gradually increased in frequency and severity during a period of several months. Finally, the extremities and the back muscles became so rigid that a position of opisthotonos was reached in each successive spasm. Before and during the attacks the patient was always extremely agitated, greatly distressed, pale, shocked, perspiring freely, and apparently in great pain.

During one such spasm the neck of the right femur snapped, x-rays revealing a subcapital fracture. He was taken to the operating theatre, and during the operation the surgeon drew the attention of the anaesthetist to the fact that he was having trouble with local spasm of the muscles and asked for deeper anaesthesia. The anaesthetist admitted that he too was having difficulty in getting sufficiently deep anaesthesia. Eventually, a Smith-Petersen pin was satisfactorily inserted and checked by x-ray. On the way back to the ward, however, the patient had another spasm on the stretcher, and subsequent x-ray revealed that this had bent the pin. He was returned to the operating theatre and another pin was inserted. A week later, during a further severe spasm, he fractured the neck of the left femur. This was also pinned and remained intact. From then on he was given more frequent doses of pethidine hydrochloride, together with other sedatives and muscle relaxants, to help in reducing the spasms and easing the accompanying pain. No further fractures occurred, but his condition remained a difficult problem of medical and nursing management, and, so far as I was concerned, until I read Dr. Asher's article, this very rare syndrome was one without a title to the entity.—I am, etc.,

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DESMOND C. J. O'CONNOR.

### Anoxia in Pulmonary Emphysema

SIR,—Although one cannot expect the author of your annotation "Neurological Aspects of Pulmonary Emphysema" (*Journal*, February 1, p. 272) to be fully conversant with the literature, I think it is unfortunate that the most interesting effects of severe anoxia on the central nervous system<sup>1</sup> are not mentioned and those that are attributed to CO<sub>2</sub> retention. Furthermore, to say of the neurological complications that "recent studies . . . have clearly demonstrated that they arise from raised intracranial pressure consequent upon CO<sub>2</sub> retention" is not true.<sup>2</sup>

But to advise the use of 5% CO<sub>2</sub> in oxygen for relief of the anoxia in emphysematous patients suffering from a chest infection is to make CO<sub>2</sub> narcosis certain and a trip to the Old Bailey likely.—I am, etc.,

Enfield, Middlesex.

THOMAS SIMPSON.

#### REFERENCES

- 1 Simpson, T., *Lancet*, 1957, 2, 105.
- 2 Westlake, E. K., Simpson, T., and Kaye, M., *Quart. J. Med.*, 1955, 24, 155.

### Coincidental Sinusitis

SIR,—During these winter months much of my time has been occupied in treating upper respiratory diseases. It is essential to treat most of these cases even if treatment may be only prophylactic, as most general practitioners would agree. In an endeavour to restrict the quantity of antibiotics that I prescribe, I have been using the sulphonamides. In children particularly, one tends to overlook the fact that they may have a coincident sinusitis which apparently does not respond to the sulphonamides given for the respiratory infection. Ebbs<sup>1</sup> has stated that in 30.6% of a series of necropsies in children pus was observed in one or more of the sinuses. In no case had this condition been observed before death. Brown<sup>2</sup> reported that of 100 rheumatic children all suffered from sinus infection. Bronchiectasis undoubtedly follows sinus infection early in childhood. As a result, I have been convinced from my own experience that intranasal treatment with a locally acting sulphonamide should be given at the same time as treatment by mouth. I have been prescribing sulphaethylthiadiazole per os, as it is, in my opinion, a drug free from side effects; and intranasally I have had patients instil micro-crystalline sulpha-