

cigarettes with unventilated filters may be a little higher than those of plain cigarettes. But even if some filter-tipped brands do have slightly higher CO yields than plain cigarettes, it is surely not beyond the intelligence of smokers to choose the ones with the lower CO yields. They could be instructed to pay more attention to tar yields but within each tar yield group to go for the brands with the lower CO yields. Besides, there are a number of brands which have low tar, low nicotine, and low CO yields and smokers would have little difficulty in identifying these as the least harmful brands to smoke.

We have found that the CO yields of different brands of cigarette range from 5 mg to more than 20 mg per cigarette.⁵ Any assessment of the degree of hazard of a particular brand cannot, therefore, be complete without knowledge of its CO yield. The manufacturers know the CO yields of their cigarettes, the Government laboratories have already measured them, but the public remain uninformed. It requires only a word from the Secretary of State for Health and Social Security for this important information to be released.

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¹ Russell, M A H, *et al*, *Lancet*, 1973, 2, 687.

² Wald, N J, and Smith, P G, *Lancet*, 1973, 2, 907.

³ Wald, N J, *Lancet*, 1976, 1, 136.

⁴ Russell, M A H, *Lancet*, 1976, 1, 301.

⁵ Russell, M A H, *et al*, *British Medical Journal*, 1975, 3, 71.

Laparoscopy explosion hazards with nitrous oxide

SIR,—Drs G B Drummond and D B Scott (6 March, p 586) have suggested that explosion is not a significant hazard in laparoscopy when nitrous oxide is used unless intestinal gas is released into the peritoneal cavity by puncture of the bowel wall. They carried out analyses of gas samples in 12 laparoscopies only. It is unlikely that the bowel was punctured at all in this small series of cases, but nevertheless there is evidence that there is a significant known incidence of bowel puncture probably of at least 2%. In addition there are a few cases which escape detection at the time of induction of the pneumoperitoneum but which are found by careful routine laparoscopic inspection of the bowel at the conclusion of sterilisation.

The risk of bowel puncture is increased if the Verres needle, which has a locking pin, is employed to enter the abdomen. This needle was originally designed as an all-purpose needle for use in several procedures, including venepuncture, in which the inner cannula needed to be locked outwards. This locking device is not needed by the gynaecological laparoscopist, and if it accidentally becomes locked the risk of bowel puncture is increased. The manufacturers should omit the locking pin, and the inner cannula should also have two side exits for the passage of gas, so reducing the risk of obstruction if the thread of the collar becomes defective.

It is my opinion that nitrous oxide for the pneumoperitoneum should be reserved for those cases in which high-frequency electrical diathermy is not to be used. It has been shown that the minor disturbances caused by carbon dioxide are readily controlled by good general

anaesthesia, but that nitrous oxide has some advantages if local anaesthesia alone is employed. For those who prefer to use nitrous oxide always it would be advisable to employ thermal coagulation and division, elastic rings, or clips for sterilisation procedures. Even then the occasional bleeding hazard may necessitate rapid use of electrocoagulation.

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Use of pressurised aerosols by asthmatic patients

SIR,—It was interesting to read the short reports by Dr J Orehek and others and Drs I C Paterson and G K Crompton (10 January, p 76) concerning the problems associated with the correct use of pressurised aerosols by asthmatic patients. The former study showed that 15 out of 20 patients (75%) failed either to inspire deeply or hold their breath afterwards, or both, or poorly co-ordinated the puff and the inspiration. In these 15 patients the degree of bronchodilatation achieved after self-administration was significantly smaller than that achieved after administration by the physician. The latter workers identified 45 out of 321 patients (14%) as having doubtfully efficient or inefficient techniques as classified by the trained respiratory technician.

In order to obtain objective evidence we monitored the relationship between inspiration and release of the dose in 103 patients attending routine outpatient clinics. A standard pressurised aerosol was modified by the attachment of transducers to provide an electrical analogue of the release of the metered dose and of inspiration. The separate signals were fed to a two-channel recorder. The patient's technique was regarded as satisfactory if the tracing showed that the metered dose was released during inspiration. Thirty-three patients (32%) failed to synchronise and the majority of these had been receiving bronchodilator and/or steroid aerosol therapy as part of their treatment.

We are concerned that many patients may not be receiving maximum benefit from these drugs despite initial instruction, and it is now our policy to repeat the tuition at intervals. We have developed a device that detects and indicates, by means of a light, correct synchronisation. The patient practises until he can light the lamp on every attempt.

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Hypertriglyceridaemia and abdominal pain

SIR,—We read with interest the description by Dr R S Elkeles and Mr D Horwell (21 February, p 435) of a case of abdominal pain associated with transient hypertriglyceridaemia and a normal serum amylase level. There have been several recent reports of patients with an elevated serum triglyceride level, abdominal pain, and normal serum amylase activity who

were shown at laparotomy to have acute pancreatitis.¹ Cameron *et al*² were of the opinion that abdominal pain associated with hypertriglyceridaemia was as indicative of acute pancreatitis as an elevated serum amylase.

Warshaw *et al*³ reported six patients with the clinical features of acute pancreatitis, minimally elevated serum amylase levels, and hyperlipidaemia. The hyperlipidaemic serum was serially diluted and they demonstrated a mean rise in amylase activity of 232% at 16 dilutions. This is not seen in sera with a high amylase level and normal serum triglyceride levels and suggests that inhibition of the amylase activity in the serum can occur in the presence of an elevated serum triglyceride level.

We have recently seen a patient admitted with abdominal pain whose serum triglyceride level was 112 mmol/l (9911 mg/100 ml) (normal <2 mmol/l (<170 mg/100 ml)). The amylase level in undiluted serum (1165 IU/l) was below that acceptable for a diagnosis of acute pancreatitis but rose 338% to 3936 IU/l, a level diagnostic of acute pancreatitis, when serial dilutions of the serum up to 32 times were performed. Further dilution of the serum resulted in no significant increase in amylase activity, indicating that a plateau had been reached.

It thus appears that in the presence of hyperlipidaemia serial dilutions of serum are necessary to obtain a true serum amylase level. This has obvious importance in the diagnosis of abdominal pain associated with an elevated serum triglyceride level.

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¹ Cameron, J L, *et al*, *Surgery*, 1971, 70, 53.

² Cameron, J L, *et al*, *Annals of Surgery*, 1973, 177, 483.

³ Warshaw, A L, Bellini, C A, and Lesser, P B, *Annals of Surgery*, 1975, 182, 72.

Reticuloendothelial phagocytosis in nephritis

SIR,—Dr I I Onyewotu (13 March, p 646), together with Dr E J Holborow, has written a classic on the uptake of complexes by macrophages. Nevertheless he is unwise to criticise the in-vivo test without having the appropriate experience. In the long term an in-vivo patient test will be likely to have greater clinical relevance.

The points that he raises may be answered as follows: (1) Only in shock is uptake by the Kupffer cells dependent on hepatic blood flow. In other situations clearance is remarkably independent of liver blood flow.¹ (2) The free iodide levels in our tests, as we originally stated,² are less than 1% and can be ignored. Correction is in any case simple. (3) Polyvinylpyrrolidone is certainly not an advantage. Its stated molecular weight is 40 000, which means not only that large amounts will be lost in the urine, but that it is not a macromolecule, only a foreign molecule. The molecular weight of our aggregated albumin is about 760 000. (4) Our patients with mesangio-capillary nephritis show impaired reticuloendothelial system (RES) clearances, as mentioned briefly in our paper (7 February, p 321). This is shown quite clearly by an "RES stress test" that we have used latterly. (5) Dr Onyewotu may be correct in thinking