thane were found to have a similar action.² It is not surprising that latent viral infections such as herpes simplex, herpes zoster and varicella, infectious mononucleosis, lymphocytic choriomeningitis, Coxsackie infections, and "hospital" or viral hepatitis may become obvious after anaesthesia and surgical stress.⁵ Viral hepatitis is presently causing confusion among physicians because it cannot be diagnosed with serological accuracy. The other viral infections have characteristic appearances and are accepted by anaesthetists and surgeons as unavoidable hazards, like viral hepatitis after blood transfusion.

Anaesthetists cannot be expected to diagnose preoperatively the presence of latent viral infections in their patients. A patient's recent contact with other patients with infectious hepatitis may indicate the possibility of the appearance of jaundice soon after surgery.⁶ Patients with recurrent viral hepatitis present a serious problem because there is no anaesthetic technique which can be regarded as safe in these circumstances. The most that anaesthetists can do as far as postoperative hepatitis is concerned, is to make sure they avoid the sad fate of the physician from New Jersey.¹—I am, etc.,

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- ¹ Dougherty, W. J., and Altman, R., *American Journal of Medicine*, 1962, 32, 704.
- ² Humphrey, L. J., Wingard, D. W., and Lang, R., *Surgery*, 1969, 65, 939, and 946.
- ³ Rubin, G., *Journal of Infectious Diseases*, 1904, 1, 425.
- ⁴ Graham, E. A., *Journal of the American Medical Association*, 1910, 54, 1043.
- ⁵ Park, S. K., Brody, J. I., Wallace, H. A., and Blakemore, W. S., *Lancet*, 1971, 1, 53.
- ⁶ Hege, M. J. D., *Anesthesiology*, 1970, 32, 170.

Treatment of Anaphylactic Shock

SIR,—In the Therapeutic Conference on Drug Allergy¹ (3 April, p. 37) there was a discussion concerning the specificity of antihistamines and corticosteroids in acute anaphylactic shock. The Aberdeen speakers, contrary to the interpretation of Drs. M. W. Greaves and G. Holti in their letter (15 May, p. 398) did not suggest that an antihistamine antagonized all of the effects of the mediators, nor that an antihistamine "ensured recovery," or that corticosteroids were "useless." Indeed, as Dr. L. Stankler clearly stated, they feel that steroids are indicated because of beneficial non-specific actions and are widely used, as in our patient. —I am, etc.,

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Management of Aortic Aneurysms

SIR,—While many surgeons will welcome your timely leading article on the subject of aortic aneurysms (20 March, p. 623) and agree with the majority of your recommendations some, in addition to ourselves, will almost certainly disagree with your proposals for the management of ruptured aneurysms. We simply cannot accept your statement that "... if he is hypotensive the aneurysm is likely to be ruptured, and it is better to operate on the spot even though his general condition improves with blood replacement."

No data are provided for the support of this statement, but our objection to it is based on our experience of 102 aorto-iliac resections for acute aneurysmal disease, with an overall mortality rate of 39%. In 91 instances frank rupture of the aneurysm had occurred with the formation of a large retroperitoneal haematoma and often there was free blood present in the peritoneal cavity also. The series contains three cases of ruptured aneurysm of the suprarenal aorta and three cases of ruptured iliac aneurysm. The mortality rate for these 91 patients was 40.6% which includes all late deaths from technical problems and those from post-operative cardiac, respiratory, and renal failure, even when these occurred weeks or months later.

The majority of these patients were transferred to our hospital from other centres. In several instances the diagnosis had been established by exploratory laparotomy in another hospital prior to transfer here, and all these patients survived the subsequent aortic resection although a few died later from diverse complications. Many of the patients survived transfer from hospitals 50 miles (80 km) or more away, and in a few instances the distance involved was 100 miles (160 km) or more. One patient was transferred by air from Malta, following an exploratory laparotomy there; he survived the subsequent aortic resection but unfortunately died some weeks later from combined renal and cardiorespiratory failure. In the entire series only six patients died in the operating theatre and most of the fatal cases survived for periods of days, weeks, or even months before eventually succumbing.

During the first three months of this year seven ruptured aortic aneurysms were admitted to the vascular unit of this hospital and in five of these the diagnosis was made in another hospital, the remaining two patients being admitted direct from general practitioners. The distance travelled varied from 8 to 38 miles (12-56 km) and the time between the onset of leakage and operation varied from 8 hours to 144 hours. No patient died in transit despite the presence of severe hypotension in five, and all were operated on successfully. Two patients died in the postoperative period, one from bronchopneumonia and one several weeks later from septicaemia and renal failure.

While we accept, of course, that there will always be the exception to the rule, we are nevertheless convinced that the majority of patients with a ruptured aortic aneurysm, even when hypotensive, will survive transfer to a unit with special expertise in this field. Our results, which compare favourably with any series of comparable size yet published in the world literature, indicate that 60% of these otherwise doomed patients can be saved. To achieve this, however, requires considerable experience, devoted team work at all levels, and the facilities of a wide range of ancillary services. Our results clearly demonstrate that the majority of the patients who succumb in the postoperative period do so not from technical complications, but from the metabolic consequences of cardiac, respiratory, and renal failure. Some of these, but not all, can be averted, for the majority of these patients require skilled nursing and postoperative care in an intensive care unit where facilities for respiratory, cardiac, and renal support are also available. Should this not be the case patients will continue to die despite a technically successful operation.

We sincerely believe that the best results cannot be achieved if your recommendations are followed and we fear the consequences may be disastrous if they are.—We are, etc.,

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F. ASHTON
A. D. BARNES
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Disposable Vein Strippers

SIR,—Disposable plastic vein strippers are now available pre-packed and sterile (Ethicon Ltd.). The pack contains two stripper lengths, three olive ends of varying sizes, and a handle. The four end pieces are interchangeable. These strippers have proved most useful as they are immediately available for use, infection risk is negligible, and no time or labour is spent on cleaning the stripper.

Overall they compare well with the metal stripper in function. The rigidity of the plastic stripper usually allows it to pass more easily and smoothly up a vein than a metal one, although with the latter the natural resilience can be advantageous over the plastic stripper as by manipulation it can often be made to pass some tortuous point.

The largest olive end in the pack is bigger than required and it would be better if this were replaced by a second medium-sized one. The pack is sufficient for the requirements of stripping the varicose veins of one leg and unless the veins are particularly bad the set will be sufficient for both sides. —I am, etc.,

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Technique of Vasectomy

SIR,—In their paper on male sterilization (31 October, p. 295) Dr. Pauline Jackson and her colleagues report upon their experience with 300 vasectomies. In my view the surgical technique which they employ is unnecessarily mutilating. They state that vasectomy "had to be regarded as irreversible". However, if vasectomy is done properly it can be significantly reversible (80%). To be reversible, the vas deferens should not be resected. Resection of the vas as described by Dr. Jackson and colleagues is done in an attempt to ensure surgical success, but in my view this procedure is unnecessary to secure male sterilization.

I have found that the optimum method of securing closure of the cut ends of the vas is to fulgurize these ends. The mucosa and submucosa are destroyed for 2-3 mm by inserting a needle electrode into the lumen of

the vas. Ligatures should *not* be used because they often cut into the lumen of the vas, inviting leakage of spermatozoa, spermatic granuloma, and possible recanalization. As a further means of ensuring surgical success, one cut end of the vas should be covered over with the fascial sheath of the vas. This technique has succeeded without fail in over 700 cases in my private practice. It does not unnecessarily discard segments of vas which might be needed later for vasovasostomy.

Clearance of spermatozoa correlates with the number of ejaculations after vasectomy rather than with any specific length of time. Instead of analyzing the semen at 12 and 16 weeks postoperatively as done by Dr. Jackson and others, a better practice would be to begin testing after the tenth ejaculation.—I am, etc.,

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- ¹ Phadke, G. M., and Phadke, A. G., *Journal of Urology*, 1967, **97**, 888.
² Schmidt, S. S., *Fertility and Sterility*, 1966, **17**, 467.
³ Schmidt, S. S. in ed. M. S. Calderone, *Manual of Family Planning and Contraceptive Practice*, 2nd edn., Baltimore, Williams and Wilkins, 1970.
⁴ Freund, M., and Davis, J. E., *Fertility and Sterility*, 1969, **20**, 163.

Decline of the Necropsy

SIR,—I welcome the purpose of your leading article "Decline of the Necropsy" (24 April, p. 181). I was relieved to find that the article urged the usefulness of the necropsy, for the title suggested that the decline was irreversible or perhaps even desirable.

I think that the pendulum has, as usual, swung too far. During the first half of this century, as your article implies, the post-mortem was by far the most clear and precise demonstration of disease available. Nowadays there is an immense range of other methods, many of which are not only exceedingly precise but also capable of demonstrating abnormalities that cannot be observed at postmortem. Yet it is still true that, as your article puts it, the expected findings are sometimes not observed at necropsy and the observed findings are not what was expected; so even at this level the necropsy can still be useful. I made a report about this in 1966.¹

My work has led me to conclude that the practice of medicine is exceedingly difficult, and that much remains to be learned about it, for which purpose every available method must be brought into use. In fact, I think medicine is so difficult that your article has been rather harsh in using the expression "turning the spotlight of open inquiry on to the clinicians' failures." I would not like my clinical colleagues to think I was interested in exposing their failures. You put it better in a later part of your article, where you describe a well-attended necropsy as "really the best form of clinico-pathological conference." With this I warmly agree, and count myself lucky to have taken part in more than a few. I have been doing post-mortems for over 30 years now, but in my early years I did not realize how valuable such clinico-pathological occasions could be. More and more I have come to be absorbed by the interesting problems that turn up in nearly every case; more and more I regret that postmortems often have to be done in less than an hour when two or three hours could well be spent on them.

More and more I incline to think that medicine changes, society changes, disease changes; that things have been seen at necropsy but not yet been observed, that things remain to be observed at necropsy that have not yet been seen. The necessary thing, the difficult thing, is to look at the organs in four dimensions instead of three, to think as a morbid physiologist rather than as a morbid anatomist.

My colleagues and I are fortunate in having a small group of undergraduates attending our necropsies almost every day. I hope that, when the pendulum begins to swing back, they and others like them will increasingly look to the laboratories, including the morbid anatomy departments, for absorbing and useful careers, in which surgical pathology plays at least a large part as the necropsy.—I am, etc.,

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- ¹ Wilson, R. R., *Journal of the American Medical Association*, 1966, **196**, 1011.

SIR,—Your leading article on the "Decline of the Necropsy" (24 April, p. 181) is timely and valuable in drawing attention to the wealth of teaching material available but, with some exceptions, not fully used for daily or weekly clinicopathological conferences or discussions.

It is true that many consultant morbid anatomists are overloaded with hospital cases and the hack work of coroners' cases most of which, you say, are perfectly natural deaths, but your statement about the "unskilled porter acting as mortuary attendant" is inaccurate. Nevertheless, the statement serves to focus attention on the subject of the mortuary attendants or post-mortem room technicians, who are diminishing in number and impossible to recruit.

In the recent decade fully three-quarters of the mortuary attendants or post-mortem room technicians in post in England, Scotland, and Wales, have, by their experience in the post-mortem room and by attendance at revision educational courses at university and regional centres, passed the examinations for the Certificate and/or the Diploma in Mortuary Hygiene and Technology awarded by the Royal Institute of Public Health and Hygiene. These qualifications were instituted in 1962, and the syllabus includes anatomy and dissection technique; elementary microbiology; the use of antiseptics, disinfectants, and fixatives; post-mortem room hazards from chemicals, infections, and irradiations; and the certificates and the law relating to the dead, including the Human Tissue Act. Sir Roy Cameron presented the first diplomas in 1963, his first official duty as first President of the College of Pathologists, and in his address at the ceremony he paid tribute to the debt owed by morbid anatomists in training and in working life to these qualified assistants.

It is unfortunate that despite these qualifications and a scheme for the training of new entrants, formulated by the Board for the Education and Examination of Post-mortem Room Technicians, no suitable candidates are coming forward, and this at a time when by deaths and retirements the number of senior men in post is being reduced continuously.

In practice hospital porters can earn more than mortuary attendants and mortuary porters who have special responsibilities for the correct release of bodies and often have unpleasant work. Hospital porters can also earn more than the 'new class' of post-mortem room technicians introduced by the Department in 1969 with two grades and salary scales, post-mortem room technician (Certificate) and senior post-mortem room technician (Diploma). Further there are anomalies; a senior post-mortem room technician holding the Diploma and being in-charge of a mortuary and post-mortem room, can in fact be paid less salary (on the Whitley Council P.T.B. Scale) than the junior under him in the same hospital mortuary holding only the Certificate, and in receipt of a 30p rate for each post-mortem examination and a 55p allowance per week for the Certificate, paid a weekly wage on the Ancillary Staff Council Scale as a mortuary attendant.

In March, 1970, the Department introduced a Higher Senior Post-mortem Room Technician scale (practically the same as that of the medical laboratory technician scale), but this grade is kept very much in reserve and awarded only in a very special case.

In 1970 the specialist professional bodies including the Royal College of Pathologists advised the Department of the urgent need of a career grade salary structure for post-mortem room technicians similar to that for medical laboratory technicians. The grades required are four—a trainee grade, a technician (Certificate) grade, and a senior technician (Diploma) grade, and a chief technician grade: all defined by qualification held and duties performed. The salary scales must be appropriate to the responsibilities and duties, and attractive to the right kind of entrant with a minimum of 2 "O" levels. Suitable scales have been suggested to the Department.

There should be available in the post-mortem room technicians with a knowledge of anatomy and of dissection, ability to look after and mount museum specimens, and a skill to provide frozen sections for clinicians and junior staff to study in the post-mortem room while their cases are examined and discussed with the morbid anatomist and his laboratory colleagues (in appropriate cases) and other clinical firms in attendance for their own cases. Thus would be provided "the best form of clinicopathological conference—spontaneous discussion by clinicians and pathologists in the context of the story of the case as it unfolds in the post-mortem room", which, as your leader rightly states, would bring "back to the post-mortem room its vital role in undergraduate, postgraduate, and continuing medical education."

Until four grades of post-mortem room technician are established the necessary skill and assistance will be lacking from the post-mortem room; there will be a rapid turnover in unsuitable post-mortem room help provided by disabled butchers and lorry drivers, out-of-work and retired plumbers and electricians' mates, labourers, and discharged prisoners. Within the next ten to fifteen years it could well be that no help will be available.—I am, etc.,

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