

structures is often found at necropsy in patients dying after cardiac infarction.⁸ Other less common possible causes are calcification of the mitral valve ring,⁹ mucoid degeneration of the mitral valve cusps,¹⁰ and nodular thickening of the mitral cusps, which may prevent proper apposition during systole.¹¹

Tricuspid incompetence in old age almost always results from dilatation of the valve ring accompanying right heart failure, since structural damage of rheumatic origin is associated with severe damage to other valves, when survival into old age is unlikely.⁵ It may complicate heart failure resulting from ischaemic, hypertensive, or pulmonary heart disease, and it follows that the diagnosis of tricuspid incompetence is of no value in identifying the aetiology of heart failure in an elderly patient.

In the past the great majority of systolic murmurs in the elderly have been thought to arise from the aortic valve, in which thickening of the bases of the cusps is a very common change with age.¹ A. Pomerance has recently challenged this view.¹¹ She points out that the aortic valve is often normal in elderly people with systolic murmurs and the mitral is abnormal. The conclusion that many murmurs thought to be aortic in origin are in fact due to mitral incompetence needs confirmation from further detailed clinical and phonocardiographic studies, since previous investigations have clearly shown that systolic murmurs in the elderly are usually of ejection type.^{1 2}

Since surgical treatment for valvular disease is not at present feasible in elderly patients, and any treatment must therefore be medical, it follows that the proper diagnosis of heart failure is of much greater importance in the elderly than the mere identification of the cause of a cardiac bruit. The presence or absence of murmurs should never deflect attention from a detailed search for evidence of heart failure.¹² This should, of course, be actively treated if found.

New Look at Paternity Tests

In general, blood tests in paternity cases can exclude rather over 70% of men from being the possible father. But this is an average figure. The chance in any particular case depends mainly on what happens to be the groups of the child and its mother. Thus, the 47% of men who are group O are at once excluded from paternity of a child with group AB, but only the 3% of men who are group AB are excluded from possible paternity of a child with group O. This is by testing with the ABO groups only.

Exclusion of paternity may be shown in two different ways. The child may have a blood factor it could not have inherited from either the mother or the alleged father, or the child may be homozygous for one of the alternative genes at a particular blood group locus and the man homozygous for the other. Thus, a group MM child cannot have a group NN father whatever the mother's group. These two classes of exclusion are referred to as of first and second order.

This is a useful distinction, because chance of error through loss of a gene or failure to detect an unknown rare alternative gene at the locus, remote though this may be, is greater than the chance of an entirely new gene, possessed by neither parent, appearing through mutation. A child with group M

could conceivably be M- and have a father with group N owing to his being genetically - N, the child having received M from its mother and the father having given nothing recognizable. One case of an apparently group M mother with an apparently group N child has been reported and the anomaly could have occurred in this way.¹ So erroneous exclusion of a possible father through loss of a gene must be taken as more likely than through occurrence of a totally new factor in the child, for instance C^w, where neither the mother nor the husband has C^w to give.²

Proof that risk of error through gene deletion is remote has to be provided for each new system by grouping very large numbers of mother-child pairs. The phosphoglucomutase enzyme groups of the red cells are at this stage of reliability proof. Meanwhile it is to be noted that the newer paternity tests are based on factors other than what is understood by blood groups in the classical sense. New red cell groups continue to be discovered but are mostly family groups or factors that seldom form antibodies enabling them to be detected. The most useful of the newer tests employed are the haptoglobin and Gc groups of the blood serum revealed by electrophoresis and by the precipitates formed when the serum, after electrophoretic separation of its constituent protein fractions, is allowed to diffuse through agar-gel to meet the antibodies in a grouping serum diffusing towards it. Such methods show the factors inherited from each parent, which is true for only a proportion of the ordinary blood group systems.

Tests of the child and alleged father alone would now exclude some 50% of non-fathers, a point that seems to have been overlooked in the recommendations of the Law Commission now being considered by Parliament.³ Though the child's interest will not always coincide with those of the mother, there are likely to be few cases in which an order to group the child of a woman unwilling to be tested would be acceptable. The Commission recommends that where the mother refuses blood tests she should be allowed a period for reflection and if she still refuses the court will decide what inference, if any, should be drawn from her refusal. Rules for the guidance of magistrates will require very careful thought. A medico-legal article on the Commission's recommendations appears at p. 589.

Legislation recommended by the Law Commission differs from the provisions of Lord Merthyr's pre-war Bastard (Blood Tests) Bill chiefly in including the child born in wedlock. Through intervening changes both in law and in social attitude the position of the bastardized child is now very different. By the Legitimacy Act of 1959 the subsequent marriage of the natural parents legitimates a child even though one or both of its parents were married to another at the time of its birth. Very often the wife, after divorce, marries the co-respondent, and it is clearly better that the child should become a legitimate child of the new marriage.

A further difference is the recommendation that the court should be at liberty to consider the significance of blood test results that instead of excluding a possible father point to his identification. This would not have been appropriate in 1939, when the only groups that could have been employed were ABO and MN, and failure to exclude could not possibly have been construed as evidence pointing to paternity. Except

¹ Henningsen, K., and Jacobsen, T., *Acta path. microbiol. scand.*, 1954, 35, 240.

² See *F. v. F.* (1968). 2 W.L.R. 190 per Rees J. at 193.

³ Blood Tests and the Proof of Paternity in Civil Proceedings. Law Com. No. 16. 1968. H.M.S.O.

⁴ See *Aspinall v. Aspinall*, *The Times*, 23 February 1967.

in cases involving non-Europeans, where the group frequencies are not sufficiently well established, the percentage of possible fathers in the population is easily calculated. It is the Law Commission's view that a figure for possible fathers as low as 1 or 2% might be taken as evidence pointing to actual paternity. This figure agrees closely with Lord Willmer's acceptance of 2.27% alternative possible fathers as indicating the slight possibility of any father other than the husband.⁴ A cautious approach is needed here, for serologists frequently find the groups fitting very well with paternity until a final test rules out the possibility.

Police Surgeons

Police surgeons' work is often done at night, and much of it is unpleasant as well as difficult—it is not easy, for instance, to examine an aggressive drunk to exclude the presence of a head injury. So it is not surprising that in some areas the local police sergeant may need to contact 20 doctors before finding one willing to turn out in the middle of the night.

Negotiations have been going on for more than a year between local authorities and the B.M.A. in an attempt to reform the system, but these negotiations have reached deadlock. At its meeting on 20 November (*Supplement*, p. 41) the B.M.A. Council agreed to recommend that the British Medical Guild should advise police surgeons to resign their contracts and to negotiate new ones only if satisfactory terms are offered, and this has been done. There is no question, however, of doctors refusing to see or treat anyone who might be ill. They will refuse to perform examinations intended only to provide medical evidence for the police.

As medicine moves into an era when measurement is increasingly used to support clinical opinion it becomes more important that police surgeons should have a comprehensive knowledge of the procedures that have been developed in forensic science. Shortly before the Road Safety Bill¹ became law the Home Office sent a circular to all chief constables and police authorities drawing their attention to the likelihood of "a considerable increase in the number of cases" of drivers suspected of drinking-driving offences, and recommending that each area should appoint designated police surgeons and deputies who would be familiar with the techniques and procedures required by the new law.² The B.M.A. and the Police Surgeons' Association were agreed that the old haphazard system of multiple occasional police surgeons should be replaced by an arrangement whereby all parts of the country should have a designated surgeon or a deputy available at all times. In 1967 the Police Surgeons' Association prepared a memorandum³ setting out proposals to modernize the system and to give the police an efficient service, and the memorandum was approved by the Annual Representative Meeting later that year.⁴ Since that time negotiations have been in progress between the B.M.A. and the Local Authorities Association. Agreement was virtually reached on a scale of fees for services, but the negotiations have broken down on the question of the retaining fee.

¹ Road Safety Bill (179), 1967. H.M.S.O.

² *Brit. med. J.*, 1967, 2, 67.

³ *Brit. med. J. Suppl.*, 1967, 2, 104.

⁴ *Brit. med. J. Suppl.*, 1967, 3, 95.

The B.M.A. and the Police Surgeons' Association suggested that one police surgeon could cover a population of about 100,000 (with exceptions in areas of unusual population density). Such an area could have one surgeon available, for, say, 9 days in 14 and a deputy available for the other 5. The suggested retaining fee, to be shared by the two doctors, was £500 a year; but any doctor who earned more than £500 a year in fees from the police would have his retaining fee reduced on a sliding scale. The figure corresponds with the fee set by the Review Body for out-of-hours cover by a general practitioner. Should any local authority insist on more police surgeons being retained the B.M.A. was willing for the retaining fee to be further divided on a time basis. But the Local Authorities Association has refused to agree to this scheme. Apparently it prefers to keep the system by which several doctors are appointed as police surgeons but no one doctor guarantees to be available at any particular time.

This is an occasion on which the public should give doctors full support. Public interest requires that a person in police custody on whom a medical opinion is required should be seen as quickly as possible by a doctor with experience in forensic science. Delay or inexperience can be dangerous for the arrested person and can lead to injustice. Police surgeons are being asked by the Guild not to make resignations effective until after the New Year. By then the Local Authorities Association should have seen the merits of their case.

Voluntary Restriction of Amphetamines

Amphetamine and amphetamine-like drugs can produce acute toxic states, with symptoms of overstimulation of the sympathetic and central nervous systems.¹ They can also produce various degrees of dependence ranging from mild habituation to a strong compulsion to take the drugs indefinitely.² More severe cases of dependence show all the characteristics of other types of addiction. The development of tolerance can lead to a need for increasing doses, with the consequence of undesirable effects such as insomnia, anorexia, and abnormal behaviour.³ Amphetamines may produce transitory psychotic reactions, clinically indistinguishable from paranoid schizophrenia.⁴ Those addicted may harm society through neglect of

¹ Kalant, O. J., *The Amphetamines: Toxicity and Addiction*. 1966. Toronto.

² Connell, P. H., *Proc. roy. Soc. Med.*, 1968, 61, 178.

³ Kramer, J. C., Fischman, V. S., and Littlefield, D. C., *J. Amer. med. Ass.*, 1967, 201, 305.

⁴ Connell, P. H., *Amphetamine Psychosis*. Maudsley Monograph No. 5. 1958. London.

⁵ Nagahama, M., *Bull. Narcot.*, 1968, 20, No. 3, 19.

⁶ Goldberg, L., *Bull. Narcot.*, 1968, 20, No. 1, 1.

⁷ Goldberg, L., *Bull. Narcot.*, 1968, 20, No. 2, 9.

⁸ *Annual Report of the Chief Medical Officer of the Ministry of Health for the Year 1954*, Part 2, p. 109. 1955. H.M.S.O.

⁹ *Drug Addiction: Report of the Interdepartmental Committee*. 1961. H.M.S.O.

¹⁰ *Annual Report of the Chief Medical Officer of the Ministry of Health for the Year 1967*. 1968. H.M.S.O.

¹¹ *J. Amer. med. Ass.*, 1966, 197, 1023.

¹² *Report of the Working Party on Amphetamine Preparations*, 1968. British Medical Association, London.

¹³ *Drug Addiction: Second Report of the Interdepartmental Committee*. 1965. H.M.S.O.

¹⁴ Hood, H., and Wade, O. L., *Lancet*, 1968, 2, 96.