General practitioners and necropsies

Contacts with pathologists and coroners could change the picture

The clinical picture during life and necropsy findings are two sides of the same coin. To look at one without the other is to see only half the picture. Proof of that assertion comes from the known discrepancy between the clinical and necropsy findings—for example, Cameron *et al* found that 15% of the main diagnoses and 42% of causes of death were not confirmed at necropsy and Hartveit reported that one in five diagnoses thought to be certain were found to be erroneous.^{1,2}

In this issue Berlin *et al* report that only 20% of deaths in the community are followed by necropsies and that three quarters of those are requested by coroners for legal and not for medical reasons (p 1080).³ Why, then, do general practitioners so rarely request necropsies when they sign about one quarter of all death certificates? Berlin *et al* found that in the main they favour the performance of necropsies and want to be sent the reports. They were not asked about their reluctance to request necropsies.

During discussion with small groups of general practitioners we have found two main deterrents: a belief that "I only need a postmortem if I don't know the cause of death" and anxiety about the reaction of relatives. Doctors believed that unless the relatives recognised that there are important reasons for a necropsy permission might be difficult to obtain. Indeed, Cameron *et al* failed to obtain permission in 35% of deaths because of the resistance by relatives or the inadequate approach by medical staff.¹ They found that female relatives were more likely to give permission than male relatives.

Berlin *et al* argue that more communication between general practitioners and pathologists might help.³ Initial fruitful discussions could review the number of necropsies requested by general practitioners in each hospital area, the availability of the service (which should be universal), and the resource implications. A necropsy costs roughly £200, which would presumably come from fundholding general practitioners and health commissions. If the number of necropsies rose, more staff and facilities might be needed. The next stage would be agreement on firm objectives to satisfy the needs of continuing medical education, audit, and quality control in

general practice; again this should come from discussions between general practitioners and pathologists, opening up a climate of investigation and inquiry.

One issue raised by Berlin *et al* could be resolved quickly and easily. At present pathologists and coroners do not always send necropsy reports to general practitioners. In Southampton the coroner permits the routine distribution of these reports to general practitioners, but this is not always the case—indeed, coroners have the power to prevent the dissemination of reports. The questionnaire showed a strong demand from practitioners for these reports, and a distribution scheme organised by the family health services authority could be an important first step toward achieving collaboration between pathologists and general practitioners.

For most of us the necropsy represents finality and failure. For the patient it represents the end of life and for the doctor it represents failure of his or her efforts to improve and maintain life. Perhaps this gloom is one of the reasons why necropsies are so rarely requested. We are dealing here with matters that are fundamental and primitive. As most people, including general practitioners, have traditional and conservative attitudes, it may well be that there will be little change until more doctors make the effort to achieve closer links with their pathologist colleagues.

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1 Cameron HM, McGoogan E, Watson H. Necropsy: a yardstick for clinical diagnosis. *BMJ* 1980;281:985-8.

2 Hartveit F. Clinical and post-mortem assessment of the cause of death. *J Pathol* 1977;123:193-210.

3 Berlin A, Wagstaff R, Bhopal R, Spencer J. Postmortem examinations: general practitioners' knowledge, behaviour and attitudes. *BMJ* 1994;308:1080-1.

Applications of virtual reality to surgery

Still in the prototype stage

Virtual reality can be defined as human interaction in an environment that is simulated by a computer. To simulate a surgical procedure interaction must be lifelike: not only must the manipulation occur in real time but the virtual anatomy must look real. Currently, the potential applications of this new technology are being explored in minimally invasive surgery, neurosurgery, and "telepresence surgery."

Technologies such as graphics workstation computers and specialised tracking devices have made it possible to build an advanced prototype of a simulator for minimally invasive surgery called the virtual clinic.¹ This system uses tracking devices attached to actual surgical instruments which are inserted through trocars into a fibreglass mould of the body.

Graphic representations of the body change as the instruments are moved, and interaction is visible on a high resolution computer monitor located at the head of the virtual patient. Data produced by computed tomography and magnetic resonance imaging are used to recreate the anatomy of an actual patient. Computer manipulation allows the virtual surgical instruments to interact with the virtual tissues in a way that resembles what happens in real life. New images are created as tissues are dissected.

The benefits of a computerised training system in minimally invasive surgery include being able to reproduce surgical anomalies and emergencies to work out the best operative procedures and being able to repeat individual