Anaesthesia in the elderly
Do we need a subspecialty?

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The increasing age of our patients and the developments in surgery and social care that have increased the aspiration of the older members of society have brought new challenges to the profession of anaesthesia. The increasing technical challenges of surgery, combined with a rationalization of surgical training and reduction in numbers of trainee surgeons on the wards, have resulted in a situation in which the anaesthetist may have to become responsible for far more than the immediate operative period. The question that has to be asked is whether existing training and expertise has equipped us as a profession for this role. The extent of this role is of course the rationale for this meeting, my purpose is to sell you the idea of a subspecialty of geriatric anaesthesia.

I wish to address this topic from a number of perspectives:

The effects of aging on the cardiovascular system

The phenomenon of postoperative cognitive dysfunction, which we see as a phenomenon of the aged brain

The current evidence, or at least the hypothesis, that certain vulnerable old people may be at risk of developing degenerative brain disease as a consequence of anaesthesia

Well, that is a starter to justify the existence of a ‘subspecialty’, but there may be others.

The point is that none of these subjects fit into the current anaesthesia curriculum, and interest in them has been muted. In their review of postoperative cognitive dysfunction Dodds and Allison (1) commented that if a disabling postoperative phenomenon had occurred in children there would have been a very different approach adopted by the profession compared with the complacency that existed around a common complication in the elderly.

The issue of the elderly circulation is more than a consideration of the increased risk of atheromatous disease with age. Atheroma and its complications are understood, by and large, by all anaesthetists. Ischemic heart disease and its complications form a substantial part of the curriculum of UK training. There has been a political imperative to understand, prevent and treat the disease and its complications. It is thus surprising and refreshing, as well as challenging, to read an article such as that by Prys-Roberts (2) on the impact of age-related arterial stiffening, an altogether
different phenomenon and one which we may have neglected in our enthusiasm for considering atheroma and its complications. The model of the elderly circulatory system described by Prys-Roberts is one which is also recognised by geriatric cardiologists. Arterial stiffening, a process associated with aging, leads to an increase in pulse pressure and a reduction in the capacity of elastic vessels to store the energy of cardiac contraction. This reduction of stored energy may result in failure of (diastolic) coronary perfusion at critical times, for example during tachycardia. Our preoccupation with diastolic blood pressure – a surrogate for afterload and as such something we have had to respect for its effects on cardiac output and oxygen flux – is also open to challenge as we realise that with aging, the predominant form of hypertension is in fact systolic.

Our colleagues in geriatric medicine have woken up to the realities of systolic hypertension and the phenomenon of ‘heart failure with normal ejection fraction’, what is termed ‘diastolic dysfunction’. The subspecialty of ‘geriatric anaesthesia’ needs to take it on also. It has received little attention thus far but is clearly an important phenomenon in elderly patients. Some 70% of the over 70 age group with chronic heart failure have diastolic heart failure and it may complicate the perioperative period (3).

The phenomenon of postoperative cognitive dysfunction is a matter for particular concern in the management of elderly patients undergoing elective and urgent surgery. The failure of large prospective trials using comprehensive neuropsychological batteries to identify any feature other than advanced age as a risk factor for prolonged cognitive dysfunction is a matter for concern. Involvement with patients of advanced age requires an understanding of the risks of this phenomenon, a willingness to interpret this data into a risk/benefit balance that the patient and surgeon can understand, and an open mind to further developments in this field. The presence of pre-existing cognitive deficits adds to the risk of postoperative delirium and possibly to a long term worsening of cognitive dysfunction.

The specialist in ‘geriatric anaesthesia’ also needs to be aware of the latest scientific thought on the pathology of degenerative brain diseases and the tentative conclusions being made by scientists studying the effects of anaesthetic drugs on animal models of degenerative brain disease. Claims that Alzheimer’s disease is related to anaesthetic exposure make headlines, irrespective of scientific validity, and anaesthetists need to be aware of scientific methodology in order to advise patients properly (4).

Then there is the human dimension, that aspect of medical practice outside of the operating room. Decisions need to be made about the risk-benefit ratio of elective procedures and decisions not to operate have consequences for the patient and family for which the anaesthetist has a responsibility. Patients who are refused urgent surgery for ‘sound’ reasons may die painful deaths in hospital: the anaesthetist with an interest in the elderly has to be prepared to risk anaesthesia for a palliative procedure.

In summary, there is enough here to interest the anaesthetist with a special interest in the elderly. Thirty years ago there was scepticism about the right of ‘obstetric anaesthesia’ or ‘paediatric anaesthesia’ to exist as subspecialties. Few would today doubt the value of recognising such entities nowadays. The time for ‘geriatric anaesthesia’ has arrived.
References.

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