Surgery in the older person: Training needs for the provision of multidisciplinary care

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ABSTRACT

INTRODUCTION Many older surgical patients are exposed to high risks of morbidity and mortality when undergoing both elective and emergency surgery.

METHODS We provide an overview of perioperative care teams and the educational opportunities available to surgeons who undertake surgery in the older person.

FINDINGS The number of older people undergoing surgery is increasing at a rate faster than the proportion of older people in the overall population. Management of the older surgical patient throughout the surgical pathway forms part of the Specialty Training Curriculum for Geriatric Medicine. While ‘surgery in childhood’ continues to form part of the general surgical higher training syllabus, surgery in the later years of life does not. There are limited postgraduate courses and training opportunities currently available to surgeons in this field. There is clear societal need to address perioperative care for older surgical patients, which has proved successful in some centers. Moreover, surgical trainees support the inclusion of geriatric medicine issues into their training.

CONCLUSIONS The ageing population requires a multidisciplinary perioperative approach, with dedicated and appropriately trained clinicians and allied health care professionals to improve outcomes.

KEYWORDS

Geriatrics – Surgery – Perioperative care – Curriculum

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Approximately 8% of the population is aged over 75 years and operations in this patient group account for 23% of all surgical procedures.¹ The number of older people undergoing surgery is increasing at a rate faster than the proportion of older people in the overall population.² It is anticipated that, by 2025, 10% of the population will be aged over 75 years, and this potentially vulnerable group will require surgical care. This, coupled with a gradual increase in the publication of outcome data, has resulted in the emergence of a heightened awareness and increased surgical interest in the management of the older surgical patient. As such, education and training in general surgery for the older person has developed and become more formalised.

Many older surgical patients are exposed to high risks of morbidity and mortality when undergoing both elective and emergency surgery. This can be due to procedural or patient factors, or both. In the elective setting, identification of these factors through multimodal structured assessment preoperatively, alongside multidisciplinary input, allows optimisation of pre-existing medical conditions and appropriate multidisciplinary pre/perioperative care. Emergency presentations are

somewhat more challenging, however. Patients over 80 years are more likely to present as emergencies than electively,³ and those undergoing major GI surgery face the highest mortality rates, often up to 50%.⁴

Prompt identification of those patients most at risk helps establish an appropriate care pathway, direct hospital resources and reduce morbidity and mortality.⁵ The 2010 National Confidential Enquiry into Patient Outcome and Death report “An Age Old Problem” identified a range of areas for improved care of the older surgical patient, including greater geriatric input, fewer delays in surgery and more input from senior and experienced surgical decision makers. The report also made a specific recommendations for improved postgraduate education of geriatricians, anaesthetists and surgeons.⁶

Current guidelines

Age-based discrimination raises unique dilemmas for policymaking and health service delivery. Whilst discrimination based upon age alone is widely accepted as inappropriate, it

is necessary to preserve and develop some age-biased provisions and healthcare practices, which bring much needed benefits to older people.

Guidelines for the Perioperative Care of the Elderly have been published by The Association of Anaesthetists of Great Britain and Ireland, British Geriatric Society and American Society of Anaesthesiologists/American Geriatrics Society.⁷ It is widely accepted that, for the most part, surgeons do not have an extensive knowledge of the current, and often advanced, management of the complex pre-existing and acute medical conditions that their patients may develop during the postoperative period.

While many UK NHS trusts now offer specialist multidisciplinary ortho-geriatric services, we have not seen the widespread design and implementation of such services nationally in other subspecialties. A recent UK survey found that only one-third of geriatricians provide any geriatric medicine input for older surgical patients, which was largely on a reactive ad-hoc basis.⁸ Older surgical patients are well recognised as potentially at high risk in publications by The Royal College of Surgeons of England.^{9,10} Furthermore, some centres are beginning to offer geriatrician input, such as comprehensive geriatric assessment, preoperative optimisation, medication review, postoperative care and discharge planning, to selected high-risk surgical patients (eg those with vascular disease). However, detailed UK guidelines for the management of these patients are yet to be published.

Education and training

Knowledge of “how to risk assess, optimise and manage the older elective and emergency surgical patient throughout the surgical pathway” forms part of the Specialty Training

Curriculum for Geriatric Medicine.¹¹ This has led to an increasing number of geriatric trainees undertaking either a clinical placement or training course dedicated to satisfy their training competencies in this area. The Royal College of Anaesthetists have also recommended that ‘geriatric anaesthesia’ be taught as a training module, and that perioperative care of the elderly surgical patient is included within the undergraduate and higher surgical training curricula.

Whilst ‘surgery in childhood’ continues to form part of the general surgical higher training syllabus, surgery in the later years of life does not. Trainees undergo a conventional training programme within general surgery, gaining clinical experience in the management of elective and emergency older surgical patients. This training is variable, unstructured and often focused upon technical aspects rather than the pre- and perioperative aspects of diagnosis and management in this vulnerable patient group. Almost 90% of trainees recently surveyed supported the inclusion of geriatric medicine issues in the surgical curricula.¹² However, they believe they receive inadequate training and are inadequately supported in the perioperative management of complex older surgical patients.¹² (Relevant courses and resources are shown in Tables 1 and 2).

Preoperative care

Standard clinical review, in combination with nursing and anaesthetic preoperative assessment, often identifies medical conditions and social situations influencing patient selection. These include selection for surgery, appropriateness of operative procedure (eg stoma formation), operative approach (laparoscopic/open) and suitability of the

Table 1 Postgraduate courses and qualifications

Course	Description & Entry Requirement	Contact
Surgery in the Older Person	Interactive online course Available to any healthcare professional who may work in a surgical practice area	http://www.cardiff.ac.uk/learn/training/courses/school-of-medicine/surgery-in-the-older-person/
Surgery in the Elderly: Essential Concepts and Challenges	One-day course Aimed at core trainees and specialty registrars	http://doctorsacademy.org/Course/SurgeryElderly/Home.htm
Geriatric Medicine	MSc/PGDip/PGCert Delivered part-time on an off-site basis Specialty Registrar in Geriatric or Elderly Medicine	http://www.salford.ac.uk/pgt-courses/geriatric-medicine
Diploma in Geriatric Medicine	Awarded by the Royal College of Physicians (counts as one-third of credits required for MSc in Gerontology at King's College London) Written and clinical examination Available to all registered doctors	https://www.rcplondon.ac.uk/medical-careers-training/postgraduate-exams/diploma-geriatric-medicine
Perioperative Medicine	MSc/PGDip/PGCert Full or part time 8 modules (including Elderly Medicine)	http://www.ucl.ac.uk/surgery/courses/msc-perioperative-medicine
MSc = Master of Science; PGCert = postgraduate certificate; PGDip = postgraduate diploma; SinE = Surgery in the Elderly		

Table 2 Reading list for surgeons

Document	Description
RCS. Access all Ages; Assessing the impact of age on access to surgical treatment	Report produced by RCSEng and Age UK in 2012
DoH. National Service Framework for Older People	Published in 2001. Sets standards for Health and Social Care for Older people.
The Centre for Policy. Ageism and Age discrimination in Secondary Health Care in the UK.	Published in 2009. A review of evidence of ageism and age discrimination in the UK.
NHS Confederation. Delivering Dignity. Securing Dignity in Care for Older People in Hospitals and Care Homes	Recommendation of how to tackle the underlying causes of poor care. Includes responses to initial consultation document. Published in 2012
Joint Committee on Human Rights. The human rights of older people in Healthcare	Inquiry into older people and their receipt of healthcare services in hospitals and care homes. Published in 2007.
The Kings Fund. Continuity of Care for Older Hospital Patients. A Call for Action.	Exploratory paper into the quality of care experienced in hospital by patients with multiple health problems aged 70 years and over. Published in 2012.
AAGBI Safety Guideline. Peri-operative Care of the Elderly 2014	Consensus document developed to update the 2001 guideline in light of the NCEPOD's 2010 report Elective and Emergency Surgery in the Elderly; An Age Old Problem
AAGBI = Association of Anaesthetists of Great Britain and Ireland; DoH = Department of Health; NCEPOD = National Confidential Enquiry into Patient Outcome and Death; NHS = National Health Service; RCS = The Royal College of Surgeons of England	

(and age-undefined) enhanced recovery programmes widely used in most surgical specialties. Potential problems arising from these consultations are often referred back to general practitioners or single-organ specialists for preoperative optimisation.

Comprehensive geriatric assessment is an established clinical approach. However, surgeons have little knowledge of the assessment and management of preoperatively identifiable age-related factors that affect outcomes. Frailty, poor functional status, cognitive impairment and postoperative delirium in older people have all been shown to be associated with prolonged postoperative stay, adverse postoperative outcomes,^{15–17} and postoperative discharge to a higher level of care.¹⁸ The prevalence and severity of postoperative complications in an older surgical patient has also been shown to have a negative effect on the time take to return to baseline functional status.¹⁹ Preoperative comprehensive geriatric assessment is a means of quantifying these factors in the elective setting, and is thought to have a positive impact upon postoperative outcomes.²⁰ However, the need for further clinical research in this area, particularly the reversibility of frailty in the preoperative setting (currently being undertaken in cardiac surgery),²¹ is recognised,^{22,23} and being driven by geriatricians and anaesthetists, with surgeons in the minority.

As surgeons operating on an ageing population, we acknowledge the lack of appropriate training in managing this vulnerable patient group. Similarly, geriatricians lack knowledge and training in surgical procedures. There is mutual recognition for the need for perioperative care teams to manage older surgical patients in the postoperative period.

Proactive perioperative care teams

Marcantonio *et al* reported in 2001 that daily geriatric consultation and targeted recommendations reduced delirium after

hip fracture repair by up to 50% when compared with 'usual care' (relative risk 0.40, 95% Confidence Interval = 0.18–0.19).²⁴ In England, the National Hip Fracture Database has supported the Department of Health's Best Practice Tariff, which rewards achievement of specified standard, of which shared care by the surgeon and geriatrician is one. There has subsequently been an evolutionary change in models of care, from the geriatric review of those patients referred for rehabilitation to the integrated joint care of patients by orthopaedic and geriatric consultants (ortho-geriatricians). While orthopaedic models of care for older patients are unique in terms of recovery and rehabilitation requirements, other surgical specialties (eg vascular) are, in some centres, adopting similar proactive perioperative models of care.

Proactive perioperative care teams provide a multifaceted approach to developing a individualised patient pathway of coordinated care for older patients undergoing surgery, and thus reduce the number of cancelled procedures and improve outcomes. Perioperative care teams include consultant geriatricians, nurse specialists, occupational therapists, physiotherapists and social workers. Perioperative assessments include cognitive and functional assessments, the identification of medical comorbidities amenable to optimisation and the prediction and planning of postoperative discharge needs, with relevant input from social services. As in standard enhanced recovery programmes, patient education (and supporting families) is also of paramount importance.

Postoperatively, patients and ward staff receive regular geriatric and specialist nurse input and education regarding the early detection and management of medical complications. Such models of care have resulted in statistically significant reduction in rates of pneumonia ($p=0.008$), wound infection ($p=0.004$) and pressure sores ($p=0.028$) in postoperative elective orthopaedic patients.²⁵ Perioperative care teams also provide a single point of contact for primary care

physicians around the time of surgery (updating on new medical conditions) and the provision of longer-term health and social care needs. Patients can also be referred from the service to other pre-existing services, when required.

There is no universally acceptable model of care and several variations have been described across the UK. Clinicians from a variety of specialties can lead this team, including anaesthesia, medicine and surgery. It is logical that the most benefit is seen in patients undergoing major surgery, but such services also have a role in older surgical patients undergoing minor or ambulatory surgery.

Future challenges and improvements

The Centre for Workforce Intelligence in-depth review of the anaesthetics and intensive care medicine workforce, which was jointly commissioned by Health Education England and the Department of Health, identified a 25% under-supply of anaesthetist and intensivists up to 2035.²⁶ While it is theoretically possible that improving perioperative care may reduce the need for anaesthetists and intensivists, it is unlikely that all perioperative medicine posts will be filled by this group of clinicians.

There should therefore be a preoperative and perioperative surgical curriculum for the management of older surgical patients, including formal assessments and the modular sign-off of knowledge, skills, behaviours and learning methods, reviewed as part of the Annual Review of Competence Progressions process for Higher Surgical Trainees. This curriculum should be developed across specialties to develop a knowledge and skill set that combines with other specialties to provide mutually beneficial improvements in patient care in a perioperative team setting.

Conclusions

Innovations in surgical and anaesthetic techniques, postoperative critical care and increased patient expectations have led to a rise in surgical procedures performed in older patients with complex medical needs. To improve outcomes, the ageing population requires a multidisciplinary perioperative approach based a team of dedicated and appropriately trained clinicians and allied health care professionals.

Conflicts of interest

Dr J Hewitt and Mr J Bunni are course organisers for the Surgery in the Older Person course referred to in Table 1.

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