Leading article

Organization of emergency surgery

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Emergency surgery deals with acutely life-threatening conditions caused by external trauma, acute disease processes or surgical complications. Irrespective of aetiology, these patients need urgent decision-making often followed by surgical, radiological or endoscopic interventions. The degree of physiological derangement determines the type and urgency of intervention, and delays of hours or even minutes are critical determinants of outcome.

Once considered an unplanned but inevitable burden interrupting elective surgery, emergency surgery has become a major part of the day-to-day activities in most public hospitals[1,2]. Organization and delivery of adequate emergency surgical services is challenged by financial constraints even in developed countries, and fragmentation of surgical expertise to organ-, disease- or procedure-specific subspecialties. In many countries, exposure to emergencies is limited by restrictions on working hours for surgical trainees. Whatever the challenges, emergency surgery is an essential part of surgical services and cannot be neglected by health policy decision makers or sidelined by the demands of elective surgery.

At a national level, the organization of emergency or acute-care surgery shows considerable variation worldwide, and there is no unified model for emergency surgery in Europe[3]. In the USA, regionalization of acute-care surgery has improved outcomes with decreasing mortality and shortened lengths of stay[4]. Similar results have been reported from Australia and New Zealand[5,6].

In Europe, emergency surgery is increasingly being managed within specialties such as gastrointestinal, vascular or cardiothoracic surgery. To have an appropriate specialist surgeon always available would require radical centralization of emergency surgery into large centres, with an acceptance of long distances and possible long delays in receiving necessary care.

On the other hand, the ability of the 'general' acute-care surgeon to manage visceral emergencies remains a subject of considerable debate. In a study from the USA, acute-care surgeons managed colorectal emergencies with outcomes equivalent to those of colleagues who performed a higher volume of elective resections[7]. In biliary disease, there was a trend towards improvement of timeliness of care for complex inpatient biliary disease with implementation of an acute-care surgery service[8]. In the UK, however, subspecialist reorganization of a regional emergency surgical service seemed to improve the management of acute gallstone and peptic ulcer diseases[9,10].

In Europe there is currently no formalized training in emergency surgery as a specialty in its own right. An interim solution might be the recognition of specific competence in emergency surgery. This could be based on structured training in the diagnosis and management of common abdominal emergencies, including an ability to perform acute endoscopies of the gastrointestinal tract along with their common interventions. Depending on geographical and educational circumstances, desirable rather than essential abilities might include the assessment of acute vascular, cardiothoracic and urological problems. Training in simple procedures such as embolectomy, for which sufficient specialists are not yet available, could be part of the curriculum in some countries. This type of training would also serve for visceral and vascular trauma. There are currently several practical courses, such as DSTC (Definitive Surgical Trauma Care course run by the International Association for Trauma Surgery and Intensive Care) and ESC (Emergency Surgery Course by the European Society for Trauma and Emergency Surgery), which could be used for training and form part of the requirements for specific competence in emergency surgery.

In the longer term, the need for a formal Europe-wide specialty in emergency general surgery must be addressed. There is no reason why a properly trained emergency surgeon could not manage common and life-threatening abdominal, thoracic and vascular emergencies, utilizing the help of other specialties when needed. This model has been used in one large US centre with good results[11]. Inevitably, some areas such as paediatric surgical emergencies and neurosurgical trauma will need specific arrangements that will vary between different countries, but which are increasingly likely to result in referral to specialist centres.

If emergency surgery is to be recognized as a formal specialty, it should be popular enough to guarantee an adequate workforce and be sustainable economically. It would need to be independent from existing elective specialties, and able to offer

meaningful career advancement and recognition. The possibility to decrease night-time work, at least later in a career, and the opportunity to pursue elective surgery by having a link to a specialist team, could make the specialty more attractive.

Delay to surgery is one of the critical factors affecting outcome in patients with surgical emergencies. Limited operating room capacity and competition with elective surgery can cause unacceptable delays[12]. A uniform classification system that prioritizes emergency operations has been adopted in many surgical centres[13,14]. In order for the classification system to work properly, however, sufficient daytime dedicated emergency surgery room capacity must be available.

Current emergency surgery models range from dedicated full-time emergency surgeons to elective subspecialists who participate in rotas involving emergency surgical patients. A model with full-time attending emergency (abdominal) surgeons, dedicated daytime emergency operation rooms with urgency-based coding, a separate emergency surgery ward, and formal and structured handover of new patients each morning has been instituted successfully at Meilahti hospital, University of Helsinki. Similar systems are being adopted in other centres in Finland and the UK.

Whatever the system, emergency surgery must be recognized as an essential part of surgical services requiring motivated leadership, appropriate resources, flexible adaptation to local needs, and a surgical education system that secures an adequate, competent workforce.

Disclosure

The author declares no conflict of interest.

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