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Surgical education in trauma and emergencies – a personal perspective

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As a medical student, serving as a volunteer paramedic with the Red Cross and riding with the ambulance whetted my interest in acute care. It had been clear to me from childhood that I would follow in my father's footsteps and become a surgeon, and from the outset I was drawn to the wide scope of general or visceral surgery. It was my great good fortune to train under the guidance of outstanding mentors and preceptors at the level one medical center with which I am still affiliated and where I divide my time quite evenly between clinic, teaching and research, with acute care strongly represented in those three aspects of my professional work. I look back on many years of hands-on involvement in the most demanding cases that emergency and shock rooms have to offer, of training residents to the best of my ability to deal with those cases, and of unceasing efforts to determine how to do it better by identifying and following new trends and developments.

When I think back to my residency 25 years ago and compare the resources we had then – technologies, instruments, imaging modalities, lab – with what we have now, I almost feel that I trained during the surgical Stone Age. It was indeed exciting during the following years to see one amazing new development follow another, to stand in awe before a complicated new machine or device, to familiarize myself with it and become comfortable using it, only to soon repeat the process with the next new surgical wonder.

Modern infrastructure of every relevant denomination is well and good but cannot do the job by itself. The flesh-and-blood surgeon is at the top the chain of command and in acute care surgery especially must every second be on top of a situation that is always precarious, otherwise it would not be acute, and likely to escalate.

How, then, do we best provide people with the competence to assume this enormous responsibility? Obviously, they must be trained, starting during the surgical residency and continuing nonstop with postgraduate and continuing professional education throughout the surgeon's career. It cannot be emphasized strongly enough that a surgeon working in acute care must keep his/her skills as sharp as his/her scalpel. As the rate at which new methodologies and technologies emerge continues to accelerate, a surgeon owes it to his/her patients to stay on top of the field. The international surgical community and societies are providing exemplary service here, offering certified workshops that meet defined international standards all over the world. There are exciting prospects afoot for those who cannot make it to a workshop, or cannot attend as often as they would like, or who wish to supplement their workshop experience. One such prospect is a multimodal internet educational and training platform with which the European Association for Endoscopic Surgery will soon go online. This will be a comprehensive online manual of laparoscopic sur-

gery, acute and otherwise, that, unlike a conventional textbook, can be updated and augmented as the need arises. It will comprise conventional textbook-type material but an outstanding feature will be the inclusion of extensive audiovisual content rather than only the usual still images. This combination of written text and videos, whether as animations or video clips of surgical procedures, or both, will give the trainee a new, multidimensional learning experience.

Training and educational opportunities proliferate but the question arises: training in *what* exactly. Here we must face a – or *the* – major issue in surgical education in trauma and emergency surgery: what, exactly, are we talking about here? With good reason, I have so far spoken only of acute care or acute care surgery (ACS), not because the term has become fashionable, which it indeed has, but because it covers all of the many disciplines that can be involved. To throw some light on the situation, in Europe at least, of what sort of acute case – traumatic or nontraumatic – is handled by which surgical specialist(s), we have in the past 12 years conducted two surveys, first of twelve, then of eighteen European countries representing a socioeconomic and geopolitical cross-section of the continent (1, 2). In the second survey, published in 2008 (2), we were looking for a European model of acute care surgery. In a nutshell, we concluded that "there is no unified system of acute care surgery in Europe at the present time" (2). This has historical roots, as medical education and health care developed in different countries over the centuries when international meetings, email and the internet were not available as today to allow for rapid and efficient exchange of information and experience. Institutions and traditions that have developed over a long period of time are not usually amenable to sudden change. Regardless of the great variety of approaches to ACS *sensu lato*, the standard of care across Europe is high, and the newer EU member countries tend to be especially eager to embrace innovations and move forward (2).

Internationally, the debate on ACS *sensu stricto* as a recognized specialty continues unresolved. The idea originated in the United States to alleviate profound problems affecting the emergency workforce and to avert an impending crisis as emergency room visits increased and interest in emergency room call among surgical specialists decreased. The acute care paradigm was anticipated to relieve some of the strain on the surgical workforce, maintain or improve patient care, and increase the attractiveness of trauma surgery to surgical trainees (2). This concept has attracted attention in Europe and elsewhere. Surely there is much that speaks for a system that would provide dedicated personnel and infrastructure around the clock, preventing the common scheduling problems where patients prepped for elective surgery may literally be lifted at the last moment from the operating table and wheeled out of the theater to make room for an acute case, whether traumatic or nontraumatic, that has just come in.

We cannot realistically expect that ACS as a surgical specialty, i.e. *sensu stricto*, will be implemented painlessly, or at all, in the near future. To test the water, we are planning, in cooperation with ISS/IATSIC, yet another survey, this time not limited to Europe but covering all IATSIC member countries, i.e most of the world. This will be a major undertaking that will require careful construction of the survey instrument to assure high quality data that can be processed efficiently. When we have those results, we will be in a position to assess the situation of ACS *sensu stricto et lato* at the national, regional and international levels and identify trends and prospects.

In the meanwhile, as in surgery, we have tools available here and now to guide decisions on the further course. We work in a global surgical village that offers us vast resources. Evidence based medicine (EBM) allows us to see what works and what doesn't. Registries and prospective outcome analyses provide data for EBM. The larger the registry and prospective studies, the more data will be generated and the more reliable they will be. Medical registries for almost everything have been with us long enough to have reached a high level of sophistication and reliability. It will be important for medical centers that handle ACS

sensu lato to join relevant networks, provide systematic data, and concern themselves with the output. In many fields of medicine, including surgery, one form of output will be practice guidelines. EBM and practice guidelines in turn contribute to the development and implementation of quality control, often feared on the basis of misunderstanding ("They're out to get you") but absolutely essential if high quality patient care is to be achieved and maintained.

There will be a tremendous impact on the future course of ACS *sensu lato et stricto* of the ongoing efforts of the EU to bring medical education in member countries into complete conformity, so that a Swedish student who wants to spend a sunny year in southern Italy, or a Spanish resident who would like to train for a time in Poland, will get full credit for work done in the other country. Thirty or so years ago, the Austrian Ministry of Health initiated reforms in medical education based mainly on the American medical curriculum (*not* the American health-care system) to bring Austrian medical education up to the highest international standard. Whether we Europeans or other members of the international community like it or not, the American system of medical education, at least as far as the curriculum is concerned, is the prevailing international gold standard.

Does this mean that in ACS *sensu lato et stricto* and elsewhere, we can look forward to a European and then global dictatorship, as slaves to mandatory regulations and guidelines? I rather doubt that we will ever have to surrender our individuality, as there can be no uniform, global approach to ACS that will be applicable anytime, anywhere, under whatever circumstances throughout the world. The important thing to me is a constant and unimpeded flow of information and constant reflection on what might be done still better, and how. There must be a finely tuned steady-state system that comprises the individual surgeon, his/her institution, the health care system, the local, regional and national governments, and the international health-care community. Medicine and surgery are, and always have been, emerging sciences, with phases of slower and, as I perceive the present day, rapid or very rapid development, and nowhere is this more true than in ACS. We ourselves, from the lowest to the highest echelons of ACS, will carefully and systematically determine how training in ACS will proceed, and whether it will develop into a new surgical specialty or subspecialty. It will be exciting for all of us to be part of this process.

In the here and now, not knowing what the future will bring, when we stand at the side of a seriously ill patient in the emergency room, shock room or theater, we stand alone, with all our knowledge and skill, confidence and doubts, and our conscience. We do the best we can, every second of a dramatic event, in real time.

LITERATURE

1. S. Uranüs, S. Lennquist. Trauma management and education in Europe: A survey of twelve geographically and socioeconomically diverse European countries. Eur J Surg 2002;168(12):730-735 ISSN1102-4151
2. S. Uranues, E. Lamont. Acute care surgery: the European model. WJS 2008;32(8):1605-1612

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