Practice and experience are fundamental to surgery. But isn't talent important, too?

The artisans of surgery

Among the professions, it is only practitioners of medicine who regard their work as an art – the art of healing. The German philosopher Hans-Georg Gadamer (1900–2002) points out, however, that doctors are not creative artists, only Nature is (1). On the other hand, it is the task of doctors to restore and repair where accident or wear and tear has disturbed the natural processes, when there is a need to reposition, resection, regenerate or rehabilitate. It is therefore more fitting to view doctors as artisans (2).

The art of healing has two roots – an academic/medical one and a practical/surgical one. Through the course of history these two roots have been partly fused, partly separate (3). In terms of prestige, there is a hierarchy in modern medicine which puts surgery at the top, medicine in the middle and psychiatry at the bottom (4). Although prestige is not the same as trust, it is not unlikely that surgeons score highly in that category, too. We simply cannot refrain from trusting them; most of us will sooner or later end up on the operating table, where we voluntarily submit to being anaesthetised and commit our frail bodies into their hands. It provides some reassurance to know that surgeons themselves lie down on the operating table at least as often as the rest of us (5).

But it is equally reassuring to know that the surgeon who is about to operate on you is not a complete novice, something that we virtually take for granted. There is little help to be gained from many years of theoretical study if what needs to be done is first and foremost a matter of manual dexterity, talent and experience. In that regard, an operation might well be compared to a concert – with the surgical team as the ensemble and the surgeon as the soloist. To be a good soloist requires musical talent, perfect mastery of the instrument, and an ability to deliver when needed. Surgery is artistic craftsmanship of the highest order, with human material as one's clay, where the stakes are high and the margins for error are small. The object is to restore Nature itself to its rightful place.

Before trainee surgeons can be let loose on real live patients, we therefore need to know that they have mastered their instrument, in this case the basic surgical skills required to do the job. This has always been at the core of the solid craftsman and master-apprentice tradition that surgery represents. But although the master-apprentice principle is still being practised, we now live in an age when it is not enough that the master has personal responsibility for the apprentice to be fully trained and qualified. Over the years, medical training and approval («the journeyman's examination») have come to be based on specific requirements for each individual specialty, with a rapidly growing need to document everything that is done and everything that happens.

There was probably a time when patients could run a certain amount of risk in connection with the training of inexperienced doctors. But new attitudes and new legislation have, it is to be hoped, made such situations much less common here in Norway. The decentralised basic structure of the Norwegian health trust system in relation to population density has, however, meant that rare and demanding operations are still being performed at too low a level of experience-based competence (6). Quality and patient safety have gone from being positive concepts of a somewhat abstract nature to being operationalisable and measurable quantities, particularly as a result of a rapidly growing system of quality indicators (7). Fortunately, we are also seeing an ever-growing number of opportunities for trainees to gain practice in the form of new simulation technology and advanced simulation centres. And of course it is not only surgical operations that doctors need to train on, but in point of fact all types of doctor-patient situations.

In this issue of the Journal of the Norwegian Medical Association, six surgeons at Oslo University Hospital and the Diakonhjemmet Hospital describe how they evaluated the learning outcomes of the British course in Basic Surgical Skills (BSS), which in 2009 was established at Oslo University Hospital, Ullevål (8). The philosophy behind the course is to enable surgical trainees to learn safe methods of performing basic surgical procedures, by means of theoretical tuition and practical training. The course consists of 14 exercises, covering everything from surgical hand scrubbing, gloving and gowning, to technical skills such as tying surgical knots, suture techniques, intestinal anastomosis, wound debridement and laparoscopic exercises.

For those of us who by and large only frequent operating theatres as patients, it is of course reassuring to know that the surgeons have practised properly beforehand. And Mansoor and colleagues show with their simple before-and-after measurements of practical surgical skills that the BSS course produced improved learning outcomes. But they also discovered to their surprise that previous surgical experience had no significant bearing on the learning outcomes for the three practical exercises involved: excision of naevus and skin closure (using porcine skin or synthetic skin model), mesenteric vessel ligation (using a porcine intestinal specimen), and a laparoscopic simulator exercise. The hypothesis was that those with least experience would profit most from the training. I think the reason for this lies in the evaluation method. Learning outcome was defined as the difference between the pre-and post-course scores, which is to say that each participant was their own control subject and the outcome did not depend on the level of skills. An alternative method could have been based on benchmark assessment, where as a starting point account was also taken of where on the skills scale the individual stood. This would have allowed each participant to measure themselves against a gold standard. Good surgery is founded on both experience and talent – and, as we know, talent is not based on experience.

It is to be hoped that this and similar courses will have spared some patients extra inconvenience and made trainee surgeons safer and more competent. I would imagine that, on the basis of their data, the course facilitators would also be able to say something about which of the 57 course participants showed surgical talent and which should perhaps consider another specialty that does not demand manual dexterity.

Olaf Gjerløw Aasland
olaf.aasland@legeforeningen.no

Olaf Gjerløw Aasland (born 1944) is Director of the Institute for Studies of the Medical Profession and Professor at the Institute of Health and Society at the University of Oslo. Since 1992 he has been involved in research into doctors' health, behaviour and career choices.
The author has completed the ICMJE form and declares no conflicts of interest.

>>>

References
1. Gadamer H-G. The enigma of health: the art of healing in a scientific age. Chap. 2. Apologia for the art of healing. Stanford, CA: Stanford University Press, 1996.
2. Aasland OG. Legekunsten – en elefant i rommet. I: Botten GS, Frich J, Hagen TP et al, red. Helsetjenestens nye logikk. Oslo: Akademika, 2014: 173–84.
3. Haave P. I medisinens sentrum. Den norske legeforening og spesialistregimet gjennom hundre år. Kap. 1. Medisinsk spesialisering på 1800-tallet. Oslo: Unipub, 2011.
4. Album D. Sykdommers og medisinske spesialiteters prestisje. Tidsskr Nor Lægeforen 1991; 111: 2127–33.
5. Storeheier AH, Aasland OG, Finsen V. Påvirker innsikt operasjonshyppighet? Tidsskr Nor Lægeforen 2005; 125: 718–20.
6. Dommerud T. Vil sentralisere kreftomsorg mer. www.dagensmedisin.no/nyheter/vil-sentralisere-kreftomsorg-mer/ (7.4.2014).
7. Kvalitet og planlegging. http://helsedirektoratet.no/kvalitet-planlegging/kvalitetsindikatorer/Sider/default.aspx (7.4.2014).
8. Mansoor SM, Tunold JA, Næss PA et al. Kurs i basale kirurgiske ferdigheter. Tidsskr Nor Legeforen 2014; 134: 935–7.