

# Graduate education in surgery in the Kingdom of Saudi Arabia

## The challenge of growing pains

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### ABSTRACT

With the establishment of undergraduate medical education and the progress of health care in the country heralded by the return of well trained and dedicated physicians and surgeons, it was only natural that the attention will be focused on establishing graduate training for the different medical specialties in the Kingdom of Saudi Arabia. This paper addresses the current status of general surgery training in the country and compares our model with the experience of others from the perspective of a program director. It is not the exception, but it is the rule to have challenges at this stage of development. The problems are multifactorial and need to be addressed by all those concerned with an open mind. I pretend no special farsightedness and my authority rests only on genuine concern about the issues and experience from being both a surgeon and a program director. The aim is of course to produce a future generation of well trained surgeons able to meet the challenge and take the lead in the medical care of this country. Once sound general surgery training is in place, training in specialty surgery such as thoracic and cardiac to name a few will follow suit.

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Graduate training in the different medical specialties is the way to ensure a steady flow of properly trained medical consultants who can fill the need of the community and the country at large. In pursuit of structured apprenticeship lies the future of health care in any nation, this country is no exception. Growing pains is defined as problems that arise in the initiation or enlargement of an enterprise. What would be more appropriate than this when we are seeking to establish a training program for all the medical and surgical specialties in due course and to improve the existing training programs? It is useful therefore, to stand back once in a while in order to take stock of where we are and where we are headed.

**Milestones.** The inception of the Joint Board for Post Graduate Education that combined the resources of major hospitals in Riyadh, Kingdom of Saudi Arabia (KSA) in 1982 probably marks the birth of graduate education in the KSA. Even though the prime object of the Joint Board was continuing medical education, it did however, take part in the arrangement for the examination of both Membership of the Royal College of Physicians (MRCP) and also the Fellowship of some the Royal Colleges of Surgeons in the United Kingdom (FRCS). Graduate education in surgery was formally launched in this country in the early 1980's as a part of the Arab Board of Surgery Program that is based in Syria. The program has graduated quite a

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number of excellent surgeons who are contributing to the health care in the country and to surgical education. In the year 1995, The Saudi Council for Health Specialities (SCHS) was created. With it, the Saudi Board of Surgery was born followed very closely by urology, orthopedic surgery and about the same time ophthalmology. In the year 1998, the Board of Neurosurgery was created and much later plastic and pediatric surgery were also established. The SCHS took on the North American model in name and programs structures, in reality, however, and looking at the different teaching institutions it is actually a hybrid system that took on some of the British aspects in graduate training. In comparison to the American Boards of the different surgical specialties, the SCHS has more sweeping power over the training institutions and the residency programs in general. This is probably healthy for this stage in order to ensure the needed uniformity and that all the Council's rules and regulations are implemented and strictly followed by all those concerned.

**The trainees.** These are the residents who are usually a very dedicated group of individuals striving to learn. They are willing to put up with what it takes to achieve their noble goals. Unfortunately, however, there are a few of them who may not be up to the job they set to undertake. Obviously, these young men and women have to change in order to meet the challenge. The change in these individuals has to come from within for it to have any lasting effect. It is my experience that the program directors take the unusual steps to encourage these individuals to join the main stream and go the extra mile for that. Nonetheless, it is sometimes difficult to rectify the situation in all of those instances in spite of the great efforts that are sincerely put. Their sense of irresponsibility runs the gamut of unexplained absence from work to excuses not to do a specific task or even not to show up for a pre-assigned commitment for their own education. It should be stressed here that these are a few isolated cases, nonetheless, they can be very troubling indeed. Their attitude is of great concern to program directors whose mission is to help the trainees acquire the skills and indeed excel in their career. It seems, however, that it is difficult to find the right motivation for these individuals. I believe that part of the blame should rest on the selection process that we employ. This could be the time to reexamine this process again and try to improve it. It is obvious that we should be looking for leadership quality in the individuals we choose for surgical training in addition to their academic excellence. Interestingly enough, surgical training continues to be very popular among medical school graduates of this country.

**The faculty.** The situation in this country is rather unique because we have skilled individuals with different philosophies depending on their medical education and graduate training. We have capable surgeons with German, British and North American backgrounds. This is of course, in addition to some of our own graduates from the Arab Board and the Saudi Board systems who have proved to be very valuable indeed. This shows how diverse and rich the Saudi experience is. It has definitely affected the training process in various degrees. When it comes to training issues every one believes that the training that he/she went through is ideal and therefore, should be the one implemented. There is no doubt that the intentions are all good and everyone tries to influence this training process in order to make it the very best possible. The teaching experience is also variable. There are those who are willing to take the resident step by step through the most complicated procedures and derive joy and satisfaction out of that. On the other extreme, there are those who are uncomfortable with the resident doing anything and of course, there are degrees between these 2 extremes. Some institutions have senior registrars and these are individuals who already have the fellowship of one of the Royal Colleges or some equivalent degree and could function as independent consultants. Those consultants who do not favor the residents are usually very generous when it comes to senior registrars. They allow them to do what the residents ought to be doing under their supervision. There may be some explanation to their attitude but it is most probably not a very convincing argument. Training residents is an investment in this country's health care system and therefore is a national priority. The only way forward in most educators' mind is severe restrictions of the practice of favoring the senior registrars or better still its altogether elimination. If for some reason the consultant feels that the senior registrar has to be involved then his/her role is merely to assist the resident to perform that procedure and intervene sparingly and only if needed. This is what is needed if we want the system to succeed in "graduating a competent and knowledgeable surgeon" and this is a direct quote from the objectives of general surgery training set out by the SCHS. Unless we realize this fact the graduates of these programs will not meet the stated aim of creating the training process in the first place.

**The training process.** The residency training method needs to be reassessed. Constant review is the key to improvement and is a healthy sign. Some centers used to assign a resident to each teaching consultant. On the surface of it this looks attractive in using the one to one approach of teaching;

however, on the other side of the equation is the fact that even though this consultant may be outstanding but his workload or referral pattern may not be enough to occupy the resident's time. The odds are that this consultant does not operate on a daily basis or his commitments take him to another institution that would leave the resident with a lot of free time. There are those who still advocate this system in our institution but experience has taught us otherwise. The resident is best assigned to a group or a firm that has more than one consultant. This way the time becomes well spent and can be divided between the different activities of the entire group. Educational activities can be easily arranged among the group and discussions are livelier.

**The duration of training.** There is a growing debate about the 5 years of training divided into 36 months of general surgery, 15 months of specialty surgery with 3 months on electives that could be spent in specialty surgery or applied pathology making the specialty surgery 18 months if the candidate chooses. Three months are spent in accident and emergency and another 3 months spent in intensive care unit. This amount of time may appear to be adequate to produce a broadly qualified general surgeon with enough expertise. The American experience, which the SCHS chose to follow, has some concerns on how appropriate the duration of training is. The increasing push by many residents for additional fellowships supports the impression that the time may be inadequate. That concern was voiced in the early 1990's, in a dramatic change due to the dwindling number of candidates interested in surgery. The Board have sought to reduce the time by one year provided a subspecialty is sought after general surgery. The change would allow residents to enter specialty training after 4 years of general surgery, spend the fifth year in the specialty and then one or 2 additional years to complete specialty training. The fifth year would count as the fifth year of general surgery as well as the first year of specialty training. This was made applicable for thoracic and vascular surgery trainees. The 5 years residency would still be expected for those who chose to stay in general surgery. Since the program as described by the SCHS guidelines for training in general surgery is no longer congruent with the development of surgery, the SCHS will be looking into this matter closely in the near future. The duration of training is becoming an issue, especially as there may be plans for creating more specialty training programs. It is unlikely that the SCHS would shorten the period of training the likely change would be in the specialty rotations and their duration. It is worthwhile to mention here that surgery continues to be very popular among our graduates and no program

director complained of short supply of applicants. In fact, the demand far exceeds the supply.

**Evolution in technology and surgical training.** Procedures that once required a laparotomy and laparoscopy are now carried out by fiber optic endoscopy and some by interventional radiology. The latest comer is the robot that is slowly but surely establishing its overwhelming presence. There are also expectations for dramatic therapeutic advances from molecular biology and molecular genetics. Many anticipate that this will result in increased control of neoplastic disease that could decrease the need for major resection surgery. Perhaps the place to introduce these topics is in the undergraduate level. It is wise to remember that the purpose of undergraduate education is to prepare the students for the practice of the profession. Medical schools should consider the expectations of their students' future residency plans when developing new curricula. Assuring students' competencies through focused curricular change should save both time and resources during residency training. The operating room that once was the place to learn operative skills is not what it used to be due to different constraints. It still has its unique place but there is an increasing need to develop methods of technical skills instructions that takes place outside the operating room. Living animals have been used with a varying degree of success for acquiring surgical skills and continue to be a major source of teaching material. The fact, however, remains that human anatomy is not always well represented in animals. Simulators have started to become popular for teaching specific surgical skills. Their advantages include lower cost portability and their ability to be used in unsupervised setup allowing residents unlimited practice. It is time that we implement this in our residency training programs as it has been shown that training on simulators transfers well to the human model and therefore, could help in acquiring surgical skills and improve existing ones.

Robotic technology promises to have an important future in surgery, but few residency programs incorporate robotics into surgical training. Junior residents can be instructed easily and quickly in both robotic and conventional advanced laparoscopic skills. This could be in a laboratory setting with animal models until the basic training is adequately covered. The same setting could concomitantly be used with the regular operating room experience by all those who seek to improve the robotic skills. As surgery becomes increasingly minimally invasive, the lines between interventional radiology and surgery, endoscopy and surgery, robotics and surgery pharmaceuticals and surgery will blur. Since the range of skills required to

manage surgical disease will expand if the surgeon is to be more than a technician, surgical training should not be confined to learning operative care. It needs to involve learning the broader base of skills required for managing the different diseases surgeons treat. The SCHS guidelines for general surgery training mentioned that residents are to be expected to participate in research activities. It would not be out of place to make it a mandatory requirement with special time allocated for it. This would also encourage the faculty members to initiate projects that the residents could make an active contribution to and learn the basics of research methodology and indeed add to it.

**The private health care institutions.** Before we can address this issue, let us consider some staggering statistics. The chances of getting into a training program in general surgery in this country averages between 10-13% and most of the time, can be a lot less than that. This means that we are effectively rejecting approximately 90% if not more of potentially good candidates. It is not advocated here to accept all of those applicants for training, but if one however, looks at the vastness of this country and the nature of some of its areas and its medical needs, one would certainly see the importance of graduating more capable surgeons who can serve the population in the remotest of places. The current system of training allows only for the graduation of a handful of surgeons, certainly, not enough to meet the current need of the country let alone its future requirements. One solution would be to increase the residency slots in the existing programs, and that is a very reasonable proposition, but even that would not solve the problem. First of all, it would take time and resources to meet the needed increase and even then it would not be enough. One area that could be utilized is the private hospitals of this country. This ought to be carried out after extensive and thorough review of the private institution. In the beginning, it would advisable to start in 1-3 hospitals and monitor them carefully. Much more rigid criteria should be in place. We know for a fact that the presence of a training program in any hospital will have a great beneficial effect on standard of care. The medical staff of that institution would feel the challenge of these young doctors who are asking intelligent questions and eager to learn. They will take notice of that and try to meet these young trainees' expectations by improving their own standards. This has been tested, tried and proved successful in other parts of the world. The American experience is one of the richest in this respect. One has only to name a few centers of great medical care and training to make the point. The Mayo Clinic and Harvard University are private enterprises. We all know the high caliber of their training programs. A well known community and private institution is the

Henry Ford Hospital in Detroit, Michigan, United States of America (USA). It is also known for its high caliber training programs worldwide. There are many more examples. The utilization of the private hospitals for training here will have to be made carefully and after thorough consideration. It is not suggested here to start surgical residency training program in private hospitals right away. The process could begin slowly by establishing less demanding training programs in the initial stages. Disciplines other than surgery could be introduced more gradually and only after it becomes evident that the response to the earlier program has been a success. Surgical training should be the last one to be approved. The process will obviously need time to achieve results. The point to stress is that we need to start utilizing the private sector health care system and to do that soon. Incentives could be implemented along the way to make it more appealing for the private hospitals to adopt the more stringent criteria set by the Saudi Council regulators. Those hospitals that exceed the guidelines set by the Council for training could be rewarded by a university hospital affiliation or affiliation to one of the other major hospitals in the area. This method has been tried, tested and proven of great value in the USA. Hospitals with training programs will definitely fare much better in the market place as it is considered as a sign of having better staff capable of training and educating. The other reason would be that the quality of care is superior to those without training programs. The private health care system will in no time realize the value of having residency training programs in their institutions and will always try to maintain it. This will obviously open doors for a better health care system in the country. The mere presence of these training programs would lead to some sort of research on the part of the trainees as mandated by the SCHS. This would in return, stimulate medical writing by the staff as has been shown extensively elsewhere. Obviously, this change will need a lot of time to take place and there may be some set backs along the way but we should not be deterred but be determined to succeed. We need to be very patient until it bears fruit. The message here is to get the process to start and the rest would be history, in time.

In conclusion, the wind of change is blowing and we must start planning for the future from today. We must look for ways to improve the quality of surgical training. In addition, considering the needs of the country we are graduating far fewer surgeons than we actually need. The private health care system should be considered in order to share the burden of training, this of course needs long and hard evaluation but in the end needs to be utilized. It is worth repeating that I do not claim an exceptional

farsightedness, I just have genuine concerns about the well being of the health care in this country, the caliber of graduates from the various training programs and the direction it is going to. I am not offering the solution rather, more appropriately, points to consider for the solution. There are those who decry the loss of a previous way of life, but they have little effect in reversing the trend. The practice of surgery is changing as we speak and we must take note of that and be prepared.

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