Laparoscopic training in South Africa

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The advent of laparoscopy has revolutionized the way surgery is practiced. The lynchpin in all of these was the laparoscopic cholecystectomy described first by the Frenchman Mauret in 1987. What followed this was a sea change of procedures that could be performed laparscopically and the list is growing. Clearly the need for skill acquisition and development has been steadily growing. The need for a different set of skill that is obviously needed requires a significant paradigm shift in South Africa! The surgical world has made significant advances in the arena of minimal access surgery and now the movement is towards the digital platform(which others call robotics!)
We can moan about all challenges that we face in our country and why we can not keep up with this new technology, the fact of the matter is that this train has left the station and is either we get on it fast or risk being left behind.
The realization of this inescapable fact has forced us as surgical trainers in South Africa to rethink our strategy. Laparoscopic surgery is here to stay and robotic surgery is coming up very fast! There is a need to recalibrate our thinking and approach with regards to training in minimal access surgery; otherwise we will find ourselves training surgeons for a world that no longer exists!

The international community has made huge strides in this arena and we find ourselves lacking behind in a big way. In the early 1990s when laparoscopy was beginning to take a foothold in South Africa many people in academic medicine were skeptical and dismissed this new interventions as a temporary irritant that will dissipate in time!
More emphasis was placed on the so-called "horrendous complication rate of laparoscopic cholecystectomy". Effectively many surgeons were discouraged from embracing this new technique because of the fear of complications associated with lap chole. Academic surgery remained in a state of paralysis in the early 1990s because of this!. That was a deadly mistake by the academic establishments. Up to this day we are still paying the price of indecisions of yesteryear. I would submit that it is not yet too late for the academic sector to catch up. What we need is resolve, focus and unshakable belief to take us forward.

The private sector was in a more fortunate position as patients voted with their feet! it was a matter of survival by our colleagues in the private sector! they were faced with stark choices – either you learn this new procedure or you go out of business and they chose the former!
It was fortuitous that the demand by the private patient propelled the development of minimal access surgery in the private sector in South Africa. This explains the huge disparities that we see today between the private sector and the tertiary institutions with regards to skill level in laparoscopic surgery. This is an anomalous situation as the custodians of training should be the academic centers. The opposite is true at this point.

We are confronted with a situation where our graduates leave the surgical training programs without the requisite skills to do laparoscopic surgery skill and suddenly they have to perform laparoscopic procedures in private because the market forces compel them to do so to stay in business. The Medical Protection Society reports that the highest litigation area in surgery is around laparoscopic surgery
This is undoubtedly an area of great concern!

Reclaiming our rightful place

The time has arrived where we as academic centers need to claim back our responsibilities to drive the process of training in minimal access surgery. There are a few challenges that we need to overcome before we can start making inroads into the minimal access surgery-training arena

At the very top of priorities is the correct environment to be created – for minimal access surgery to thrive-this requires a very firm commitment by academic leaders in surgery that laparoscopic surgery is not luxury but a necessary interventional strategy to treating patients and is the standard of care in many procedures and that list continues to grow. The perception that it is time wasting, costly and tedious has got to be measured against its formidable list of advantages- just to mention a few- shorter hospital stay, less postop pain, less surgical site infections, better cosmesis. There is no doubt that economies of the countries that has embraced this technology has improved significantly especially when one considers less complication and early return to normal duties. Whilst we accept that many leaders of surgery have reached the stage in their lives where learning new techniques such as laparoscopic surgery may be out of the question, there is reasonable expectation that an environment should be created that will allow t this technique to thrive.

As human beings we are products of habits, we need to create a habit that say that almost all surgical procedures can and should be done laparscopically and it so fascinating how this becomes the norm with time, of course there is always that resistance in the beginning but with time everybody gets to accepts that this is the way to doing things. This requires determination, consistency and commitment by all.

Caseloads

The second challenge is around the caseloads. Like any other type of surgery, to be good and technically adept, one needs game time (actual operating time.) This cannot be overemphasized, to build dexterity (both manual and mental dexterity) one needs to operate with the correct supervision and operate often. You need to spend time in the trenches!!

The pertinent question then becomes- where does one get the cases and the time?

There are a few cases that are fairly plentiful and of sufficiently low risk to be ideally suited for laparoscopic training

Appendicitis – acute appendicitis is a fairly common procedure- many tertiary hospitals in South Africa still see a fair number of acute appendicitis cases. This is one operations that is well suited for laparoscopic surgery training- We have used this procedure at our institution as a primary training procedure for registrars for a number of years already with very impressive results- What this procedure does is to offer the resident the requisite dexterity skill, hand-eye coordination- we looked at this operation as a dexterity training procedure (published as an abstract) there are at least eleven steps that can be learned in this procedure!

The risk of this procedure is significantly lower compared to the traditional laparoscopic cholecystectomy!

The cases are relatively plentiful- they can be done after hours making more operative time available. One of the things to do is to ensure that the new registrar that joins the program is taught and guided in how to do laparoscopic appendectomy confidently and safely in the first six month of their training program- this before they go on to their rotation. No appendicitis should be done open unless there is a compelling reason to do so. This we have found has a major impact in the drive to embracing minimal access surgery. Soon everybody learns that appendectomy is done only laparscopically. Of course there will always be those complaints from our anesthesiology colleagues that

these laparoscopic procedures take a long time – of course with gentle persuasion and understanding everybody eventually comes on board.
As an endeavor to achieve the objective of making laparoscopic surgery training a reality, it is important not to be derailed by all of these comments. One needs to stay focused, vigilant with an unshakable commitment to ones ultimate goal. Laparoscopic appendectomy is considered a very small laparoscopic procedure, but in our view it forms the basis of of our laparoscopic training program. The mesoappendix must be handled with a Maryland dissector and diathermy, the base must be handled with a home made Roeder knot using chromic suture – not a commercially available endoloop, the bag used should be a self made one – all these steps we have found them to be extremely useful in that they all build to this array of skills that we need. The retrieval bag also should be ''home-made" to maximize the skill building capacity of this procedure

Laparoscopic cholecystectomy (lap chole)
Lap chole is a procedure where we have traditionally trained our registrars. Indeed all-surgical registrar should be proficient in doing a laparoscopic cholecystectomy before they leave the training program. The resident should do this procedure, – not the fellow and this arrangement must be jealously guided to protect the registrar training time. The registrar should be guaranteed the right to do this procedure under supervision of a competent surgeon- the surgeon must be patient to allow the registrar to complete the procedure.(not to take over from the "slow" registrar. The registrar must do this procedure every time. It is key that a departmental monitoring system is in place to check who did the laparoscopic procedure – to ensure that this procedure is done by the resident. If not done by the resident – there must be a cogent reason why this is so!
There is no shortcut in this – we need everybody to buy in.

Laparoscopy in trauma
For many years trauma surgery has become the kindergarten of operative surgery training- this where we all learned how to operate – to mobilize bowel, to suture, to make anastomosis- we all cut our teeth in trauma!. This should not be any different in laparoscopic surgery. The reality is that in South Africa trauma is a very common problem. We dwarf the entire world with the amount of trauma cases that we see. This potential advantage that is unique to South Africa that we have (the rest of the world does not have this) the concern has always been round the safety of laparoscopy in a trauma setting. Aventury et al [1]early on in the 1990s published a disturbing finding of a very high missed injury rate of small bowel of 80%. This was enough to scare people away. Subsequent to that many studies s have demonstrated the safety of laparoscopy in penetrating injury. Kawahara ET al[2] demonstrated the low incidence of missed injuries when employing a systematic examination of the abdomen. Koto et al[3] recently demonstrated the safety and feasibility of laparoscopy in penetrating injury. Clearly the is more data demonstrating the safety of this intervention in penetrating injury. Its role in blunt trauma has also been demonstrated to be safe in our own experience (unpublished data). This is an area of great opportunity for laparoscopic training. Trauma cases are plentiful and can be done after hours – thereby increasing the opportunities for operating. This provides the opportunity for intracorporeal suturing, for bowel inspection and mobilization. Trauma provides an excellent opportunity for laparoscopic training

Conclusion
There is no doubt that many institutions in South Africa have made great strides towards improving laparoscopic training in South Africa and they continue to do that its work in

progress. The South African Society of Endoscopic Surgery has been at the forefront of surgical training in South Africa. SASES has put together a range of interventions to address this issue of laparoscopic training

Just to mention a few – the laparoscopic fellowships – these have been very useful over the years where an individual is sponsored to visit a center of excellence oversees and learn from experts about the skills in laparoscopic surgery. There are several established courses run by SASES to address the skill issues. E.g. laparoscopic cholecystectomy course, laparoscopic suturing courses, etc.,

In conclusion the drivers of laparoscopic surgery training are the academic training centers and we dare not fail!

What is needed is a resolute leadership and relentless effort to drive this process of minimal access surgery training. This is work in progress and there is no magic wand to wield to get solution but hard work and effort. It is something eminently achievable

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