Laparoscopic surgery offers unique advantages over abdominal surgery but there are some disadvantages. What can be done to improve your surgical skills?

Laparoscopic surgery offers unique advantages over abdominal surgery. It allows the physician to illuminate and magnify the surgery site, while viewing the procedure on a large monitor. This gives a degree of detail that is simply not possible with a laparotomy. Close proximity and detail are important for safe manipulation of the laparoscopic instruments; however this close view also has disadvantages. The brain thinks it knows what it sees, but that is when surgery can take a serious turn.

Dr. William Parker explains that if we understand the limitations of the human brain we can learn to navigate through difficult surgical situations and possibly avoid serious complications in the operating room.

Surgical errors can occur due to:

- **Visual perception and processing errors**: Once the brain has imprinted an image, it is difficult to see beyond that image. What the brain has perceived is not necessarily what is actually there. If the information was incorrect based on a quick impression, contrary information may be ignored and you may not see a potential problem.

- **Loss of haptic perception**: Identification and differentiation are difficult in the surgical world. The brain relies on many senses to process information. Limiting sensory input in any regard, i.e. the sense of touch, can have a negative impact on one’s interpretation the information available. This narrowed input can result in surgical misjudgments.

- **Poor performance under stress**: In stressful situations, our instinct is to allow the fight or flight response to take over but during surgery the physician must remain focused, calm and deliberate in his responses. This takes extensive practice and experience; role playing stressful situations in the OR can aide in developing controlled responses.

- **Lack of situational awareness**: The need to be aware of the entire surgical field at all times is crucial in laparoscopic surgery because the laparoscope can limit peripheral vision, making spatial orientation more difficult. Situational awareness is achieved by pulling back the scope, locating anatomical structures and realigning one’s sense of location. Situational awareness requires active involvement and planning.

“Research demonstrates that focusing on one’s mistakes is the best way to improve performance. Errors in surgery will happen; we are human. The emphasis should not be on punishment but on training, communication, and teamwork” states Dr. Parker. Simulations of unexpected complications are an excellent and safe way to redirect the brain not to simply react in an emergency but to stop and think first.

Dr Parker states, “Research has also shown that fail safe procedures in the OR such as checklists also minimize errors.” Check lists or time-out’s allow the surgical team to make sure everyone is on the same page by verifying important information that would normally be assumed. What surgery is being performed, what is the site, what is the medical history, patient’s name, etc. are discussed. While these things are assumed in surgery it is easy to forget to go over these important steps. Fail safe procedures also enhance a teamwork approach in the OR by:

- Opening the lines of communication between the surgical staff. A team approach offers several sets of eyes focused on the same patient and monitors. Each view has a unique vantage point and what one may not see, another may and can indicate a potential problem.

- Allowing everyone to understand the meaning of and level of each person’s concern by using the same terminology, which allows for the team to communicate using the same language with the same meaning.

- Encourages mutual respect and a team approach in the OR where each person’s concerns are
addressed.
According to Dr. Parker, learning and experience must continue well beyond the residency years with an accumulation of training, simulated practice, and actual surgery. Attention should be specifically directed towards the pelvic anatomy, managing surgical emergencies, surgical techniques, an understanding of the limitations of the human brain, as well as teamwork in the OR.

Reference:

About Dr. Parker:
Dr Parker is a Gynecologist in Santa Monica, California, in private practice. He is also the former chair at Saint John's Hospital and Health Center, Department of Obstetrics and Gynecology and past president of the American Association of Gynecologic Laparoscopists. Dr. Parker is a frequent lecturer and teacher of advanced surgical techniques both in the United States and abroad. He is extensively published, and has expertise in advanced laparoscopic surgery and advanced hysteroscopic surgery.

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