

Chapter 7

Entry into the Abdomen - aka “The Whole Enchilada”

“Gee Wilikers, it must be obvious day on camp stupid.”

- Master Shake, Aqua Teen Hunger Force

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I will begin with the assumption that every high-volume, minimally-invasive-preferring surgeon has very strong feelings about his or her entry into the abdominal cavity. By the time you've completed your 1000th laparoscopy, I am quite certain that you will be set in your ways and it will be difficult to convince you that my way is correct and that your way is wrong. Let me attempt this, anyway.

Hasson umbilical entry, or so called "open laparoscopy" is a nonsensical technique that is barely worth mentioning in this text. It neither improves the safety of entry into the abdominal cavity, the cosmesis of that entry, nor is it more minimally invasive than any other technique. It is fundamentally flawed from a minimally-invasive surgery perspective and yields no advantages.^{22,23} The concept that cutting down through the layers of the abdominal wall (none of which provide any difficulty for laparoscopic entry), will help you with the final layer is ridiculous. All of the danger of the final step of entry is present, regardless of how you got to the final layer. The "open laparoscopy" entry simply leaves the surgeon with a larger final incision and the same necessary entry beyond the peritoneum into the abdominal cavity, with a greater chance of enterotomy or other injury than the below mentioned techniques.

Optical trocar systems that allow you to visualize your entry are not necessarily bad, but provide no actual advantage.^{24,25} Unlike the flawed Hasson technique that results in a larger incision on the skin and in the final entry to the abdominal cavity, optic systems merely fool the surgeon into believing that visualizing the entry gives them any power to control the final entry into the abdomen. This is not the case. The final layer is the final layer, whether you can see it or not.

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Direct entry into the abdominal cavity with a blunt trocar is an excellent technique, however counter traction on the abdominal wall can be difficult to maintain, especially in patients with either too much or too little body fat. Direct entry with a sharp trocar is not advised as the non-insufflated abdomen will yield many obstacles and a large bladed trocar will very likely create complications. You're also left with the problem of how to hold countertraction with the abdominal wall. This leads to the unfortunate and quite brutal action I have seen many surgeons take of grasping the abdominal wall with towel clamps. The clearly correct entry is to first use a Veress needle to insufflate.²⁶

This gives the surgeon the unique advantage of being able to first inject and then withdraw saline into the abdominal cavity, which gives extremely valuable information about the location of the tip of the needle. The Veress needle is generally less than 2 mm in diameter, so in the unfortunate circumstance that you have put your needle into an object you did not intend to, it is extremely likely that this will not be a catastrophic error. An incidental enterotomy that is created with a Veress needle can be easily recognized before you unintentionally place a large trocar into the same loop of bowel. Assuming that you can then choose a different entry site and obtain a pneumoperitoneum, this small 2 millimeter injury can easily be oversewn from the laparoscopic approach with minimal difficulty. Injuries to the vasculature with a 2 mm needle are also clearly going to be less dangerous. I hope that I never see any item in my operating room penetrate the aorta, but I would certainly prefer a small needle hole than the entry of any size trocar should that day come that the good Lord calls my number.²⁷

So, where to place your umbilical incision? No matter how skilled of a surgeon you are, there is always a

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benefit to using the advantages you are given. Feel the bottom of anyone's umbilicus, yes, even yours if you want to, feel it right now and you will see that it interfaces directly with the patient's fascia.

No matter how much fat there is, if you've truly found the bottom of a natural umbilicus, you are at the fascia. This anatomical rule always holds true - as long as you can find the bottom of someone's belly button! This law will work for any degree of morbid obesity. Therefore, if you can get to the bottom of the patient's belly button, you can get right up against a patient's fascia. If you can get your Veress needle right up against the bottom of the patient's belly button, then you have your Veress Needle right up against the fascia. All you need to do then is make a small skin incision and pop the needle through.

As discussed above, using this technique does not free you from any possibility of complications. If that very tiny 2 mm area of the fascia that you are entering into has densely adhered intestines on the other side, then your number is up. Fortunately, since it's just a 2mm hole you'll more than likely be able to detect your error and correct it, whereas entry by some other means cannot escape serious complications easily.

As an interesting and ironic mention, an ideal instrument for visualizing the bottom of a patient's umbilicus and for making your incision with an 11 blade scalpel at the bottom of an obese patient's umbilicus is a towel clamp. In this case, we are not talking about using the towel clamp in the barbaric way many surgeons do, grasping the tissue and pulling up. Rather, we leave the towel clamp closed and use an 11 blade scalpel through the end of the clamp. In this way, the towel clamp is actually acting as a 320 degree retractor for the walls of the patient's umbilicus. Surgeons that choose to master this technique

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become masters of entry for laparoscopy in even the most obese of patients.

If you want to use this technique in a patient with a neo-umbilicus, you may be justified in doing so. The umbilicus that the plastic surgeon created may very well interface very close to the fascia but, unlike those created by God, there is no guarantee that the fascia will be there. Still, in my opinion, it is an excellent way to enter the patient from a cosmesis perspective in an area that will be extremely unlikely to have a wound infection in the postoperative period.^{28,29}

Following insufflation with the Veress needle, you can then proceed to place an 11 millimeter blunt trocar through the umbilicus and examine the abdominal cavity with a laparoscope. This brings us to the "Moment of Truth" that will be the subject of Chapter 8 as we make important decisions regarding the approach.

So, let's say you've done everything right, made a small incision at the very bottom of the umbilicus, you inserted your Veress needle right through the fascia, you've injected saline, received no fluid back and a positive drop test into the abdominal cavity all confirms good placement. All this was done correctly, and yet you still can't insufflate. The insufflator keeps flashing between "15" and "obstruction." What is wrong and what do you do next?

Ideal entry into the abdominal cavity with the Veress needle would have been tilting the Veress needle approximately 30 degrees toward the patient's feet, generally directly in the midline. I would withdraw the needle at this point and attempt another Veress needle entry except this time also slanting the needle 30 degrees to the left or the right.

I would be prejudiced about which direction by any prior scars on the patient's abdomen and, in the case that no scars exist, I would probably go toward the patient's right

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because I'm standing on the left side of the table and it seems a more fluid motion. In the obese patient, your Veress needle angle is generally straight down into the abdominal cavity to maximize the chance of entering the abdominal cavity, and I generally never use an extended- or bariatric-size Veress needle.

In the case of an obese patient, I would change my angle for the second entry to be more toward the patient's feet, perhaps at an inflection of 15 degrees caudad. I would again try to insufflate the abdominal cavity and, if unsuccessful a second time, switch to a direct entry through the incision that we have created in the umbilicus with a 5mm blunt trocar. Of course, I would never proceed with insufflation if any of the various needle injection and withdrawal tests showed concerning results. Obviously, concerning results would be the inability to inject saline into the abdominal cavity, which would indicate the tip of the needle being in a solid object, the withdrawal of frank blood or feculent material, or a negative drop test.

Clearly, each of these scenarios needs to be dealt with and some of these scenarios require immediate laparotomy. To continue with my protocol, if I am unable to enter the abdominal cavity through the umbilicus, I would change to a left upper quadrant point and attempt to insufflate the abdomen in that area without making an incision, after asking anesthesia to deflate the stomach via nasogastric tube.

If I am able to insufflate from the left upper quadrant, I would then return to the umbilicus and again attempt blunt entry into the umbilicus with a slightly more caudad angle using a five millimeter trocar. My rationale would be that the peritoneum is now pushed firmly against the fascia and upward secondary to the insufflation, so entry is much more likely to be successful at this time.

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If I'm not able to insufflate using only the Veress needle from the left upper quadrant, I would then abandon the possibility of performing the intended single-port technique and instead enter the left upper quadrant directly using a small incision and a 5 mm blunt trocar. If I'm still unable to insufflate and visualize the abdominal cavity, I would give consideration to possible insufflation from the vaginal approach, using the posterior cul-de-sac, before abandoning laparoscopy altogether.

The high success rate of the left upper quadrant entry justifies its usage when umbilical entry fails,^{30,31} although the obvious downside is that if your left upper quadrant entry fails you will then need to inspect for injuries in the left upper quadrant with a laparotomy which would normally be quite low in the pelvis. This inspection from a Pfannenstiel can be very challenging, and you may need to be satisfied with the absence of obvious bleeding from this area in difficult patients.

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