SURGEON PROFILE:

Dr. George Eid

Experiences with the Carter-Thomason CloseSure System®

CooperSurgical

In this article we will share the experience of Dr.George Eid with his challenges and technique for laparoscopic port site closure along with his use of the Carter-Thomason CloseSure System® in the Bariatric surgery setting.

Dr. Eid is a graduate of the American University of Beirut and completed his residency at the University of Iowa and a fellowship in Minimally Invasive Surgery at the University of Pittsburgh Medical School. He is an Associate Professor of Surgery in the division of Minimally Invasive Surgery at the University of Pittsburgh Medical Center and Director of Minimally Invasive General and Bariatric Surgery at the VA Medical Center, Pittsburgh, PA.

How long have you been in practice and specializing in Bariatric surgery?

I joined Magee Womens Hospital soon after I finished my fellowship. I've been performing bariatric surgery for close to nine years now and I've been in practice since then doing both bariatric and laparoscopic surgery.

What are the top procedures you perform most regularly?

Gastric bypass would probably be number one, followed by the different types of bariatric surgery, such as adjustable gastric bands and sleeve gastrectomies. I also perform hernia surgery and colon surgery, all of which are performed laparoscopically.

I know when we first met you indicated that gastric bypass surgery was the bariatric procedure that you performed most often.

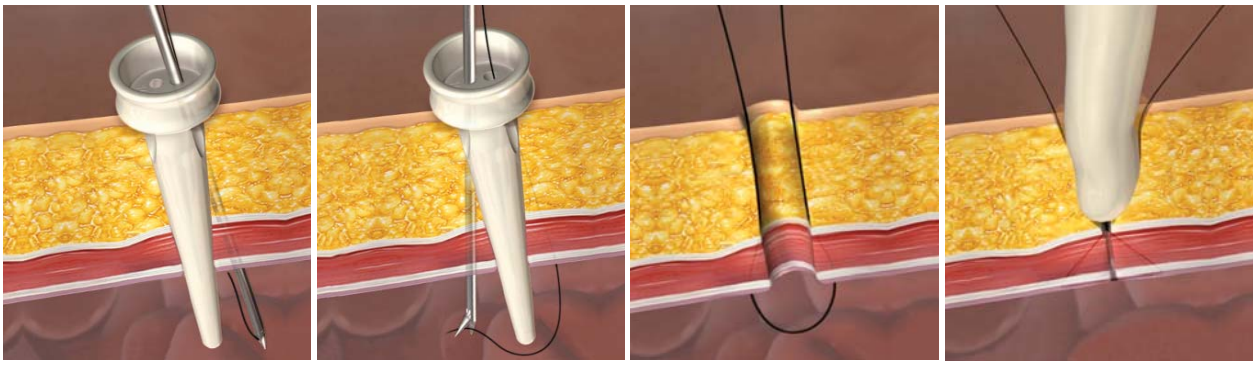
Yes, percentage-wise it is still the highest performed surgery among the different types of bariatric procedures.

From a patient-base perspective, do you see your volumes of patients stabilizing, increasing or decreasing, and can you comment on the demographics of your patients?

We tend to see probably the higher-risk patients more so than a regular practice. A higher percentage of our patients tend to be older and more super-obese, having a higher Body Mass Index (BMI)—the result of which is sicker patients, with more potential for complications.

With regard to the different levels of obesity, from obese to morbidly obese, is there one category you find to be increasing more so than the others? In addition, do you feel that obesity in general is increasing?

Not really. Over the last 20 years, we've seen an increase in the percentage of Americans living with obesity. Recently, however, nationwide reports seem to indicate that obesity overall is stabilizing.



On a yearly basis, the CDC conducts a series of surveys to determine the demographics of obesity in each state. Despite numbers showing it is stabilizing, there are still around twenty million people in the United States who are eligible for bariatric surgery.

Are there a lot of influencing factors that limit potential patients from seeking bariatric surgery, whether it is insurance related or fear of surgery?

Patients' access to bariatric surgery is still an issue, for several reasons. As I mentioned before, around twenty million Americans are living with a BMI of 35 and above, which makes them eligible for bariatric surgery based on the 1991 NIH consensus criteria. In the US, approximately 200,000 procedures a year, are performed. This means that we're only operating on 1 percent of eligible patients. As I mentioned earlier, there are multiple reasons why we're not accessing the other 99 percent of the obese population. Insurance coverage is one of them; patients' fear or lack of education is another one, in addition to some mis-perceptions about bariatric surgery even among some healthcare professionals

What are the key intraoperative challenges of laparoscopic surgery for obese patients?

They are multiple. I usually put them into two main categories; what I call physiological challenges and anatomical challenges.

Physiologically, obese individuals tend to have a lot of comorbidities, making them a higher risk for any surgery, including bariatric operations.

Anatomical challenges include a thick abdominal wall that laparoscopic instruments have to go across, which can lead to limited maneuverability of the instruments. Also, obese patients tend to have excess visceral and intraabdominal fat, which limits access to the abdominal organs and the bowel.

Bariatric patients also tend to have larger livers in general, due to excess fatty deposits. Larger livers, especially the left lobe of the liver, can limit surgeon's access to the stomach. Instrument length is another anatomical challenge in regard to bariatric patients. As we operate on super-obese patients, it is sometimes difficult to reach the "corners," as I call them, with standard-length instruments and, comparatively, makes the operation more difficult.

Performing laparoscopic procedures on bariatric patients can also be challenging because of the space that's required to effectively complete the surgery. In high BMI patients, the abdomen does not expand as much and offers limited space to work.

Also, the presence of ventral hernias can add to the challenges encountered when operating on bariatric patients. The thicker abdominal wall can, sometimes, prevent a medical professional from discovering hernias during a standard physical exam. Therefore, the undiagnosed hernia may need to be addressed during the operation.

Lastly, ensuring proper closure of the port sites may be tricky especially when dealing with a very thick abdominal wall.

What are the challenges with maintaining pneumoperitoneum with obese patients?

A thick abdominal wall can limit the amount of pneumoperitoneum achieved and thus limit the surgeon's working space.

Are there specific challenges in closing the port sites in bariatric patients?

Basically, the fascia, which is the important layer for port-site closure, lies way below the skin in bariatric patients. In order to have a good closure using the traditional open technique, a larger incision is required, which would defeat the purpose of the laparoscopic approach where only small incisions are used. Another challenge is ensuring good visualization if pneumoperitoneum could not be maintained. That would not only lead to poor fascial closure, but could potentially cause bowel injury by driving the needle through a piece of bowel.

When were you first introduced to the Carter-Thomason CloseSure System®, and how did you close port sites prior to using the system.

I was introduced to the CloseSure system many years ago, perhaps six or seven years ago. Prior to that, I used the reusable Carter-Thomason® suture passer.

After I was introduced to the Carter-Thomason CloseSure System, I became a regular user for different reasons. For one, I'm in a teaching institution, so often times I may have to leave the closure portion of the operation to a trainee while I attend to something else. Beforehand, I would have felt uncomfortable letting a trainee close the ports as there are a lot of potential complications that could happen. For example, the bowel could get caught in the closure process and cause an unnecessary injury. With the Carter Thomason System, however, the Pilot® guide maintains the normal pneumoperitoneum, ensuring good visualization. The system ensures that port-sites are being closed properly by automatically guiding the needle in the right direction. As a result, I now feel comfortable leaving this task in the hands of a trainee knowing that the room for error is much less. It is also a secure way of controlling port-site bleeding.

Have you always used the Carter-Thomason in the extended length system?

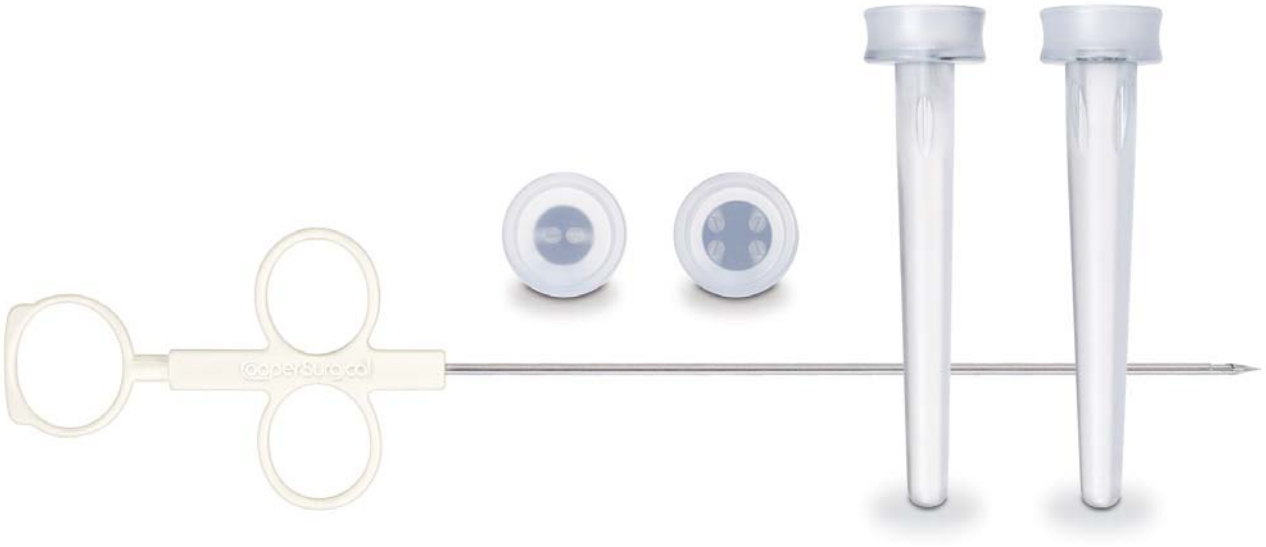
I would say in around 90 percent of the procedures I perform I use the extended length system. For one, I tend to operate on higher BMI patients. Another advantage of the XL system is that the longer cone helps plug the fascial defect more securely so I don't lose pneumoperitoneum.

What key features of the system that you use now do you find to be the most beneficial?

The Pilot guide, definitely. As I mentioned previously, it helps me maintain pneumoperitoneum and guide my sutures in the right direction to ensure proper inclusion of the abdominal wall fascia.

With our extended length 15 mm Pilot guide, we have four suture holes, which is two more than the 10/12 mm Pilot guide. Do you find this to be a valuable feature in conducting your procedures?

Yes, it is valuable. For example, in gall bladder surgery, we sometimes have to extend the 12 mm port-site fascial



incision in order to take the gall bladder out of the abdomen. In those cases and from prior experience, the extended port site is more prone for hernia formation. So, it is essential to have proper fascial closure and using the two suture sets on the 15 mm Pilot guide does come in handy.

What port sizes do you typically close?

Anything that is 10 mm in size or above, I usually close. Occasionally I close a 5 mm port-site to control a bleeder.

You mentioned that you work at teaching institution. How often do you close the port sites as opposed to allowing one of your Residents assist in the procedure?

I tend to be present from start to finish. Problems can arise from even putting the ports in, which most often are very preventable. In that respect, I tend to oversee the entire procedure. However, the Carter-Thomason CloseSure System tends to be pretty safe for a trainee to use that I feel comfortable it can completed safely in my absence.

Based on your experience, what are your thoughts on the efficiency of the Carter-Thomason System as compared to other methods that you've come across?

This system is fast and efficient. The closure can be performed fast and from the first attempt and under direct visualization with a stable pneumoperitoneum.

In a study you published a few years ago, you indicated that you had no complications in over 250 laparoscopic bypasses. From that study, how has your experience changed in the last couple of years with regard to similar experience using the closure system?

I have been using the same system since then and, to my knowledge, I've not had any Richter's or other types of port site hernias since. So, I would say my experience has been the same.

What is your opinion of the Carter-Thomason System within the context of teaching the system to your students? Is it fairly easy to teach and how receptive are the residents to using and getting comfortable with it?

It's very easy to use because, as I said, you take a lot of the human factors out of it. All you have to do is get the pilot guide in place where the port was, make sure it's properly oriented, and go in with the needle. So, in essence, it is extremely easy to teach and easy to perform.

If you had 10 seconds to speak to another surgeon about the value of the Carter-Thomason System, what would you say? What benefits would you emphasize?

Safe and secure. I think the key issue surgeons need to realize is that port site hernias, especially in the short term, should be avoided as bowel incarceration shortly post-operatively can be disastrous. The only way to avoid such a complication is to ensure that a safe and secure closure is performed. While achieving this goal is up to the discretion of the surgeon, the Carter-Thomason CloseSure System would definitely ensure that the port site fascial defect closure is done properly.

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