Hello. I’m Dr. Steven Rothenberg and I’m a pediatric surgeon at the Mother and Child Hospital at Presbyterian St. Luke’s in Denver, and it’s my pleasure today to bring you the first of three live web broadcasts which are being sponsored by Karl Storz Network 1. This is being brought to you by a very generous educational grant which is allowing us to bring live surgeries to surgeons and physicians all over the world in an attempt to advance and teach minimally invasive techniques. Today is the first broadcast, which is going to be a laparoscopic Nissen fundoplication in a 13-year-old male with severe reflux esophagitis. We will have two coming up broadcasts. One will be on October 6, which will be a thoracoscopic lung resection, and then on November 3, a pull-through for imperforate anus. We hope you’ll be able to tune in for those broadcasts as well. Today we are very fortunate to have with us Dr. Whit Holcomb, who is the chief of surgery at Mercy Children’s Hospital in Kansas City. He will be moderating the broadcast for us. As many of you already realize, you will be able to send us questions and comments through email, which we will try to respond to during the procedure.

Today’s patient is a 13-year-old male who has had a year-long history of severe dysphagia, has gross reflux by upper GI, and on recent upper endoscopy underwent biopsies which showed Grade IV esophagitis and has not been responsive to medical therapy. For these reasons, he is going to undergo a Nissen fundoplication.

At this time, I would like to introduce Dr. Holcomb and turn this over to him as we get this procedure going.

As Steve said, this is an educational session, so we want to encourage everyone to email their questions. Click on the MDirectAccess link and you should be able to get a link to email a question. We’ll try to answer as many of them as possible. With that, we’ll get started.

This is a 46 kilo male. He is placed in a modified dorsal lithotomy position with the legs in stirrups and going directly down. It’s important to keep the legs level,
especially in larger children, because if they’re elevated, they’ll get in the way of your operating ports. I use a 5-port technique. We’ll start with insufflation of the umbilical trocar, umbilical site. I always insert Marcaine first to get the local anesthetic. We get better pain relief that way. Then I’ll use an 11 blade to go ahead and make the initial incision. I try to evert the lower rim of the umbilicus so that the scar, when it goes in, will be within the umbilicus and will be more cosmetic. We use a closed technique, so we’ll insert a varies needle directly, lift up on the abdominal cavity, and then place in the varies needle. In most children, you can actually feel the pop and then you can see the varies needle passing in the abdominal cavity. This is a very safe technique. I think you should do what you feel safe with, but we do all of our insertions closed.

00:03:34.000 We’re going to go ahead now and insufflate to a pressure of 15. I find that most children, even neonates, tolerate pressures of 12-15 without any problem. We insufflate slowly at first, with a slow flow of about 1 liter. I think a lot of children complain of shoulder pain or abdominal pain and I think it’s worse if you inflate the abdomen too quickly, so we’re inflating at 1 liter per minute and the pressure is slowly coming up. We see, if you can look at the touch screen, we’re able to look over here and you can see that we’re monitoring the pressure and that it’s coming up slowly. If you have a high pressure, that means your varies needle may not be in the right position, but initially we saw a very low pressure of 3-4. As we start to go up, let’s go ahead and increase insufflation to 3. The touch screen is within the field so that I’m able to change settings as we need to during the procedure. We can control both the light source, the insufflation pressures, the camera settings, and other things that we would use during the procedure.

00:04:53.000 So now we’re up to pressure. We have a nice, tense abdomen. We’re using the step trocar system here. It’s a very safe system because you never put anything sharper than the varies needle in. The rest of the trocars go through sheaths, which help hold the trocars in place. We’re going to take a look, if we could go to the inside view now.

00:05:28.000 Now we’re going to put the patient in reverse Trendelenberg. This gets the bowel out of the way. I use a 5-port technique. My two lower ports are above the umbilicus in the right and left mid quadrant. These will be my operating ports. I try to place these so that my angle is about 90° where I’ll be doing most of the dissection and suturing. My retracting ports are up at the costal margin, which is denoted by these dotted lines. These ports I put extremely high so that they’re up out of the way and we don’t have any instrument dueling. So that will be the stomach retractor. This will be my right hand operating port. When we look over here, this left upper quadrant port is the liver retractor.

00:06:49.000 hat I’m trying to show you here is you can see where I’m pressing down with my finger. That’s at the right subcostal margin, just to the right side of the falciform ligament, and that’s where I like to put my liver retractor because I use the falciform ligament to help me retract the liver up out of the way. Then my left hand operating port is down below that.
WHIT HOLCOMB, M.D.

00:07:14.000 Steve, if a gastroscopy is going to be performed, does that change the orientation of your ports?

STEVEN ROTHENBERG, M.D.

00:07:17.000 It does a little bit. The left upper quadrant port I use for my gastrostomy site and I will bring that down off the costal margin. You need to make sure that you’re well off of it, especially once the abdomen is insufflated, because once you deflate the abdomen, it will move up against the rib margin. Then I try to put my right hand operating port directly underneath it so I don’t dual with it and I can either work toward the hiatus or work over toward the short gastrics. Since I do it the same way every time, I injected all the incision sites, I make all the incisions, and then I put the trocars all in in a sequential fashion. I find that I can save 10-15 minutes per case, rather than making one injection, one incision, putting in one trocar, and then switching. I think with procedures like this, where you’re doing it pretty much the same way every time, it’s good to get in a routine and that way you’re not wasting time on a part of the procedure that doesn’t really take much.

00:08:27.000 My surgical assistant is running the camera. He’s on my left side. We have our scrub tech on my right.

WHIT HOLCOMB, M.D.

00:08:37.000 Steve, we have an email from Spain asking if you utilize manometry in the preoperative evaluation. Maybe you ought to just go over what tests you like to use to work up these patients.

STEVEN ROTHENBERG, M.D.

00:08:51.000 Okay. Let me just get these retractors in and I’ll go ahead and do that. This is my liver retractor and you can see it’s got a special handle on it on a Babcock clamp. What this is is a self-retaining retractor and we’ll see how it works in a minute. The upper hand port is a Babcock clamp that I use to retract the stomach. The other instruments we use for this procedure, if you can look down on the tray, are a Marilyn dissector in my left hand and then a regular mets scissors. Depending on the side of the patient, we may use either just regular cautery or, in a larger patient, we’ll use something like the harmonic scalpel.

00:09:44.000 Now we’re going up toward the hiatus. You can see we have a pretty good look. We may need to do a little dissection here before this will fully hold, but what I like to do is I like to grab the hiatus with this clamp. You can see what beautiful retraction we have without ever retracting the liver. So we have a self-retaining retractor, so basically I can do the procedure just with myself and my assistant. We don’t risk any liver injury
because we’re not retracting on the liver directly and the shaft of the instrument is what holds the liver up out of the way.

00:10:26.000 We’re going to start the procedure by taking down the gastrohepatic ligament. I don’t worry about taking the vagal fibers that come through this. If there is an aberrant left hepatic, I will preserve that.

00:10:42.000 As far as the workup, I think it depends on the age of the patient. Obviously in babies who have gross reflux, you know, you can see it clinically and then we always get an upper GI to document it and make sure there’s no anatomic abnormality. I think that’s important in kids, even though it’s not as important in adults. Then most of those children get a pH probe and I think that’s very helpful to quantify the degree of reflux. In older children, many of them get endoscopies and biopsies, and I think that’s happening more and more often. We’re seeing more of that. I don’t routinely get manometry. I think it’s really not that helpful in the majority of children unless you’re suspecting achalasia. So we’ve taken down the ligament and now we’re going to go across the top of the esophagus and try to identify the crus. We just want to take down the peritoneal reflection. Again, you can do this with harmonic or hook cautery scissors.

WHIT HOLCOMB, M.D.

00:11:55.000 Steve, do you have an age range that you usually transition from the cautery to the harmonic scalpel?

STEVEN ROTHENBERG, M.D.

00:12:05.000 The age range, it’s more of a weight, probably around 20 kilos. Then, because we’re here, I’m going to go ahead and expose the right crus.

WHIT HOLCOMB, M.D.

00:12:28.000 Steve, some surgeons expose from the patient’s left side first and you expose from the patient’s right side first. Do you have a preference? Obviously you like the right side. Did you start with the other way and now have gone to this approach?

STEVEN ROTHENBERG, M.D.

00:12:41.000 The reason I do that mostly is I like to start in an avascular plane, so that ligament, the gastrohepatic ligament, is avascular, so it gives you an opportunity. Then, as long as I’m there, I go ahead and expose the crus, just to get an idea. I think it’s safest not to go behind the esophagus until you’ve mobilized the left side so you decrease the risk that you may go into the back wall of the stomach or the esophagus. Now we’ve retracted, so I’m using the left upper quadrant trocar with the Babcock to retract the stomach medially. Now I’m working with my right hand on the left side of that trocar and we’re going to do this to take down the short gastrics. You can see we have very nice exposure. Again, we can do this with our harmonic, with the Ligasure, with hook cautery
in small enough patients. You can see this stomach is adherent right up against the spleen. Now you can see what would happen...if we had tried to come behind the esophagus, you can see the stomach is adherent down here, so the risk of getting into that stomach inadvertently is pretty high, so I would agree with Whit that it’s important to mobilize this before you try to go behind the esophagus. Now you can see we’re starting to see the patient’s left crus. There’s usually a posterior gastric vessel there, which we just took. Now we can see the left crus. Now it will be very safe to come across. I like to leave this membrane intact, if I can, to decrease the risk of hiatal hernia postoperatively. So we’ve got that pretty well mobilized.

WHIT HOLCOMB, M.D.

00:14:54.000 So as a general statement, you would say that you don’t mobilize that much more of the intra-abdominal esophagus than is already there?

STEVEN ROTHENBERG, M.D.

00:15:01.000 I usually do. It depends on whether we have a hiatal hernia, but I do most of it from this side. Now you can see that very easily, right behind the esophagus, we fall right back in there. The posterior vagus nerve is right there, so we see that and protect it and then we use kind of a chopstick maneuver to bluntly open up the space so that we don’t create anything. Then what I’ll have my assistant do is he’s now creating intra-abdominal esophageal length by pulling down on the Babcock, so we don’t put in a Penrose or anything like that and that’s another reason I like the positioning of the left upper quadrant retractor, because it allows me good access.

00:15:45.000 You can see here that now we can identify a good length of intra-abdominal esophagus. We’ve got nice mobilization, so that’s the reason I think it’s very important to take down the upper short gastrics, as well as for safety. Then, as we form the wrap, I think we’ll get better anatomy, so that looks pretty good. I’d be pretty happy with that. Okay, so we’re ready to start suturing. So, he doesn’t really have a hiatal hernia, so we are going to put in just a single crural stitch and this is more to support it than anything else.

WHIT HOLCOMB, M.D.

00:16:33.000 What type of suture do you use?

STEVEN ROTHENBERG, M.D.

00:16:33.000 This is a 2-0 Ethibond suture. It’s a braided, non-absorbable. Obviously you need to use non-absorbable sutures. That’s important because these sutures need to stay to maintain the repair. I like how the 2-0 Ethibond ties. It’s also a sturdy suture, so you’re less likely to fray it. When you’re suturing, it’s important to set yourself up at good angles. I use sort of a C, reverse C mode for suturing. You want to be careful. I like to use just a needle driver and my Maryland. This is a co-needle driver which is made by
Storz, which I really like. It’s a very nice, fine movement. It’s got a release with the finger, sort of a Castro Viejo type, and you just set it up to make it easy for yourself. Small movements. So that was the reverse C. Now we’ll just switch hands, come across, and you can see if you set it up right, you have very nice movement, you have great exposure. Again, that liver exposure is coming all from that self-retaining retractor. The reason the special handle is there is that if you use a regular handle, it hangs down and interferes with your hands, so by having sort of this special straight screw-top handle, it keeps it out of the way. So I think that’s a sufficient crural repair. I sort of gauge that just by eye. If you want, you can put the bougie down and measure it, but I tend not to do that because I have a pretty good feel for what it is. Obviously you don’t want to make it too tight. We’ll go ahead and take our needle out.

00:18:48.000  So now you can see, we’ve got our intra-abdominal esophagus. We’ve got our crural repair. We’ll lift up the liver a little bit more, just so you can see kind of what we’re visualizing. Now we’re going to go ahead and get our mobilized portion of the stomach and pull it through.

WHIT HOLCOMB, M.D.

00:19:10.000  Would you use a bougie?

STEVEN ROTHENBERG, M.D.

00:19:10.000  Yeah, I think it’s wise to do it. I think, again, it’s one of those things that, as you get more experience, you probably don’t need to. I’ll show you that this wrap is plenty loose. What we want to do is bring around the portion of the stomach where I’ve taken the short gastrics and basically you want to sort of Witzel the esophagus, as opposed to wrapping the stomach around like that and torquing it. You just want it to sit very naturally, kind of like this, so kind of encompassing the esophagus. This is a shoeshine maneuver to make sure that there’s no tension. You can see that I can leave that sitting there and it just sits right there, so I think that’s a nice tension-free wrap. We will go ahead and put a bougie in and we’re going to put in a 48 or 50 in this child. We have an oral gastric tube in that we put in at the beginning of the procedure to decompress his stomach. We’ll take that out now and I’ll have the anesthesiologist pass the bougie.

00:20:23.000  What we’re going to do here is I want to get all the way back to where the short gastrics are. We’ll get a good bite of stomach and then what my assistant can do is, you see how he’s pulling down on the stomach. He’s using that like a Penrose drain to help me elongate the esophagus, so we’re creating a good length of esophagus. Here’s the GE junction, right about there. I’m going to grab this fat pad, make it even longer, then I’m going to get a little bite of the esophagus at 10:00 or 11:00. Then, this first stitch, I like to grab a little bit of the crus to try and help prevent wrap migration into the chest.

WHIT HOLCOMB, M.D.
00:21:15.000  Is that a new technique for you, Steve, based on previous experience, or have you always done that?

STEVEN ROTHENBERG, M.D.

00:21:18.000  I’ve pretty much always done that. For a while, I was putting collar stitches in, so stitches between the wrap itself and the crus, and I found that didn’t really change whether the kids got a hiatal hernia or not, so I quit doing it because I think there may have been more dysphagia.

00:21:43.000  Now, to help set it up, I’m going to have my assistant grab this fat pad to keep those tissues out of the way and you can see how nicely the wrap is setting up. I think this is a great place, especially if early on in your experience you used a knot pusher for this particular stitch. The reason is that we have great exposure and it allows you to visualize how the wrap sits down, so you can see that I use the knot pusher just to set that right up against the esophagus. You can see the bougie and I’ll show you the wrap. So we’ve got a nice positioned wrap. The wrap is setting up right where I like, at about 11:00. I think that prevents any tension or torsion on the stomach and decreases the incidence of dysphagia greatly.

WHIT HOLCOMB, M.D.

00:23:01.000  It looks like you’re making a concerted effort to get the suture line around 10:00 or 11:00, as opposed to straight up at 12:00. Is that done in order to prevent dysphagia?

STEVEN ROTHENBERG, M.D.

00:23:12.000  I think so. I think there’s a very nice study, I think Jeff Peters is the one who showed it initially. It’s in one of his publications. It shows that, if you look at the anatomy, this is actually based on how the stomach comes around the esophagus and freeing the short gastrics, but this is the way to create the most tension-free wrap. Now we’re going to put in two other sutures and make the wrap about 2 cm to 2.5 cm in length. For this, again, I do stomach, esophagus, try not to sew in the NG tube or bougie, and then stomach again. Again, you should be in a comfortable position for suturing. You want wrist movements, as opposed to full arm movements, and then pull your suture through until you just have a small tail. That way you don’t have to chase it. It becomes very easy just to grab the tail and pull it through.

WHIT HOLCOMB, M.D.

00:24:27.000  As your experience has developed, are there any pearls or pitfalls you can tell us about?

STEVEN ROTHENBERG, M.D.
Oh, there’s all kinds. I think for the straightforward kid, it should be very straightforward. The first time wrap, I think it’s very important to always do a crural stitch, whether you see a hiatal hernia or not. As you know, the greatest incidence of complication and breakdown is the development of a hiatal hernia, so I think it’s important to buttress that, whether there’s a large defect or not. I think the kids who run into the most problems are kids with congenitally short esophagi. Kids like TES, they tend to have a higher rate of recurrence, so I think it’s important to try and make sure that you get a good length of intra-abdominal esophagus, if you can, but even doing that, sometimes it’s just not quite enough. I truly believe that mobilizing the short gastrics, the upper short gastrics, is key to having a good wrap and to decreasing the incidence of dysphagia. In babies, that can be done very easily with hook cautery, in older children using some other energy source, but as you can see, it basically took us about a minute to mobilize the upper short gastrics, so it doesn’t really add to the procedure time at all. One thing I think is that the technique we use of using our retractors in the upper ports, I think a lot of people try to retract the liver and the stomach from the lower ports. I think you end up having a lot of instrument dueling and I think by moving those retractors to the upper ports, you can diminish that significantly. You can see that at no time during this procedure have I ever run into or conflicted with one of my other instruments. Again, I just do a 3-stitch wrap. I think it’s important that you know how to sew intracorporeally. There are all sorts of suture assist devices you can use, but if you run into a problem or you make an enterotomy or something like that, those don’t work well. If you’re going to do a complicated surgery, it will be a problem.

WHIT HOLCOMB, M.D.

Steve, do you make the same length wrap whether it’s a 14-year-old or a 4-month-old?

STEVEN ROTHENBERG, M.D.

I think probably with the older kids it’s a little bit longer, but it’s not a lot different. That’s pretty much it. We’ll trim these up to look nice. That’s pretty much it. We’ll just show you the wrap here. That’s the completed wrap. You can see it sits at about 11:00. It looks nice and free. Basically the wrap’s nice and loose. If you look here, you can see that this isn’t tight at all. It’s a nice loose wrap. We still have about, I’d say, 4-5 cm of esophagus below the wrap and you can see again, during the whole time, maybe we can take one shot of this retractor before we take it down. If you can see this instrument right here, this is just a standard Babcock shaft, but it’s on this special handle, which is in line, so you can see as I’m operating, it doesn’t get in my way, whereas you can picture, if I had an instrument with a handle here, the handle would be coming down. That’s why we designed this, because the handle was getting in my way. This saves putting on a table retractor, having another assistant, doing whatever, and I would say it works about 90% of the time. So that’s pretty much it. We’ll go ahead and take out the instruments now.

WHIT HOLCOMB, M.D.
00:28:57.000  Steve, in these older patients, do you have any special dietary restrictions? Do you keep them off meats or solids for a certain period of time?

STEVEN ROTHENBERG, M.D.

00:29:07.000  What we do is we start letting them drink right away, so he’ll be on clear liquids right after surgery and then I keep them on a soft diet for about a week. What that means is basically other people call it a no chunk diet, but basically anything that’s soft. Things like cottage cheese, soups, yogurts, just not so much because they can’t swallow more solid things, but because inherently there’s some inflammation at the lower esophagus, at the site of the dissection, and it feels funny to them to swallow, so we keep them on kind of a soft diet for a few days, just so they get used to things, and then we go ahead and let them eat pretty much whatever they want. We warn them a little bit about steaks and raw vegetables. Most of the kids after a few days are chomping down hamburgers. Every once in a while, someone has more problem than that and it takes a little bit longer for them to feel completely comfortable.

WHIT HOLCOMB, M.D.

00:30:21.000  We’ve found, in our own experience, that dysphagia is not much of a problem, but transmigration of the fundoplication wrap is our biggest problem. Do you find that to be the case?

STEVEN ROTHENBERG, M.D.

00:30:33.000  Yeah. I think our dysphagia rate, and maybe it’s reported falsely low, but our dysphagia rate is less than 1%. I think certainly, you know, migration of the wrap and development of a hiatal hernia is the biggest complication. My personal failure rate for this procedure is about 3.5-4% and I would say over 2/3 of those are because of development of a hiatal hernia.

WHIT HOLCOMB, M.D.

00:31:05.000  In closing these small incisions, are you closing the anterior fascia or are you just closing the subcutaneous tissue?

STEVEN ROTHENBERG, M.D.

00:31:11.000  I think in a skinny kid like this, I’m closing the anterior fascia, which is what I try to do. The step trocars, I think, help protect against that, but my golden rule is basically if I can see the fascia, then I close it. So even with a 3 mm trocar, and in a baby, all these ports, except for the 1 port where I would put in my stitches, are 3 mm ports. What I do with those, these are nondisposable Storz ports, just to show you what it looks like. This is what I use in smaller kids. This is for our 3 mm instruments. You can see that’s a nice short 3 mm port, so I use these when I do anyone basically 10 kilos or lower
and that works quite well, but I’ve had an incisional hernia even in a kid who has a 3 mm port in the lower sites, where sometimes they’ll cough and usually it’s a piece of omentum that gets stuck up in it. So this just shows you a 3 mm port going through those. My instrument set has both 5 mm and 3 mm instruments in it. They’re duplicate heads, only smaller. So again in a 10 kilo or 15 kilo child or under, we’ll use the 3 mm instruments and ports.

WHIT HOLCOMB, M.D.

00:32:43.000  So these are the Storz Clickline instruments, is that correct?

STEVEN ROTHENBERG, M.D.

00:32:48.000  That’s right. We’ve worked with a lot of instruments and I feel these instruments are very well made. They’ve held up very well. If an instrument breaks, you can just replace the shaft and not the handle. The nicest thing, I think, as a pediatric surgeon, is that in one case we are able to have all of our 5 mm and 3 mm instruments, where before we used to have separate sets. We can interchange in the middle of a case. If I’m using a 3 mm instrument and I suddenly decide I need a 5, we just change out the shaft and we have that right in the set.

WHIT HOLCOMB, M.D.

00:33:26.000  Do most of these patients go home the next day?

STEVEN ROTHENBERG, M.D.

00:33:26.000  95% of them. Some even go home the same day, but usually we keep them overnight. Then these kids have no restrictions as far as physical activity. I don’t put any restrictions on them. I’ve had kids return to soccer practice 3 days after surgery, football practice, school, so it really has made a big different, I think, in their post-op recovery and morbidity from the surgery.

00:34:03.000  Lee is just finishing. We’re using a Monocryl stitch, just 1 in the middle of each trocar site to close that down.

00:34:38.000  So again, I think the important thing about a procedure like this, like a fundoplication, is it’s a very straightforward operation. I think the way that, you know, some of the things may have looked easy, like some of the things that people really struggle with, which is the laparoscopic suturing, clearly here didn’t look that hard, but it’s because of the experience level, but most surgeons can get to a comfortable level. The key is having a stepwise progression, I think, that you go through these so that you’re not wasting time and you’re not wasting energy, so you feel comfortable with the rhythm of the surgery. That way, if you take a little bit extra longer to suture, it’s not a big deal and it doesn’t create a lot of issues or problems for the patient, so I think that’s the way to go about it and that’s why every fundoplication I do, except for those where it’s a re-do and
there’s a lot of scar tissue or there’s other issues, follows this exact same procedure. That way my team...I’m fortunate I have the same surgical assistant who works with me all the time. Many of you will be working with residents and switching, and that’s more difficult, but I basically have to say very little to my assistants about what’s coming next. They know what to look for, they know where to go. The nurse knows which instruments to have ready in the handle and that makes the procedure much less stressful and I think much easier for everybody to kind of deal with. I think it might be worthwhile, Whit, since you work with fellows all the time, what are some of the unique challenges that you face in trying to do that on a regular basis, as opposed to what we’re able to do here?

WHIT HOLCOMB, M.D.

00:36:18.000 I think that the residents today are much more facile then they were 10 years ago. They’ve been trained well in general surgery and certainly our residents are quite good. I think the important aspect of the operation, from a teaching perspective, is to do it the same way each time, and that way you’re efficient with the operation, it’s good training, and the residents learn a lot, so I think that’s the most important thing. We do things a little different in that we approach the esophagus from the patient’s left side first and then from the right side, whereas you started on the right side and then went to the left side, but outside of that, it’s a very similar technique.

STEVEN ROTHENBERG, M.D.

00:37:03.000 I think that’s true. I think those of us who have a big series and experience, when we watch each other, we’ve all sort of come to the same thing. I think that’s important and it states a lot about the operation. I think that so many of the procedures we do, some of what we do as pediatric surgeons, I think, vary and there are cases where you get in and you’re dealing with congenital anomalies that it really is difficult to have a rote way to do it, but I think so many of the procedures we do are basically the same operation and I think if you can develop a technique that your staff knows, your residents know, and you know what’s going to happen, that it makes these procedures go much more quickly. I don’t know how long that took us, but it’s not that everybody is going to do one of these in 20 minutes, but this is an operation that should be routinely done in around an hour, give or take, I think especially in small, young kids, so I think that’s important as well.

WHIT HOLCOMB, M.D.

00:38:03.000 Steve, is there a patient that’s not a good candidate for the laparoscopic approach?

STEVEN ROTHENBERG, M.D.

00:38:09.000 I basically approach every patient that way. Many patients who have either congenital diaphragmatic hernia or giant omphaloceles will need G-tubes and Nissens. Because of our experience, that’s how I approach them and I’m willing to take the time to
do the mobilization and take down the adhesions laparoscopically because I think it benefits the patient. I did a patient last week who had perforated neck and a whole adhered abdomen. It took me about 2.5 hours to do it, but that child went home the next day, so I think that was beneficial, but that is another level that I think you have to determine based on your own experience and your own comfort level with more difficult procedures, whether or not you want to be doing re-dos. I do think a re-do is better done laparoscopically than it is open. I think there are certain patients that present significant problems and those are usually patients with pure esophageal atresia, who have a short esophagus and who have a tubular stomach. I see a lot of those patients who are referred to me from all over the country who have wrap failures and they’re also my group of biggest failures and I think it’s because they have a short esophagus, they have large hiatal defects, and they have a tubular stomach without an adequate fundus to create the wrap. I’m still not sure what the right answer is in those patients. It’s probably a willingness to abandon the standard fundoplication early and either do something like a Collis-Nissen, which can be done laparoscopically, although it obviously is more difficult, or consider, you know, perhaps in cases of several esophagitis and reflux and lung problems, even abandoning the esophagus. I think sometimes perhaps we try to save it too long.

WHIT HOLCOMB, M.D.

00:40:02.000  You have a big experience with repair of esophageal atresia and fistula. In patients who require fundoplication, do you prefer the full Nissen or a partial fundoplication?

STEVEN ROTHENBERG, M.D.

00:40:12.000  Classic teaching is those kids would have trouble swallowing and that you might be better off with a partial fundoplication. My experience is basically I’ve done a complete Nissen. Even when I was doing them open, that’s what we did. I think as long as you follow these principles and you mobilize the stomach, you get a floppy wrap, and you mobilize a good length of esophagus, those kids do great, so I think the best anti-reflux procedure is a Nissen fundoplication, so I sort of feel if I’m going to do one, that I should do that. The only patients I do a partial wrap in are those who have achalasia and we do a myotomy. I have mostly done a Dorr fundoplication to patch the anterior myotomy. I know in Kansas City you do a lot of Thals. What’s your experience with that?

WHIT HOLCOMB, M.D.

00:41:06.000  My personal preference for a young patient who’s got esophageal atresia and fistula is to do a Thal fundoplication, primarily because early in my career I had to take down a couple of Nissens because they were obstructed, so at least my personal preference is to do a partial anterior fundoplication only in that subset of patients.

STEVEN ROTHENBERG, M.D.
00:41:28.000  You’re doing those laparoscopically, aren’t you?

WHIT HOLCOMB, M.D.

00:41:32.000  Yes.

STEVEN ROTHENBERG, M.D.

00:41:32.000  So, fundoplication, there really is a lot of debate, you know, whether a Nissen or a Thal is better. Some people do only Thals. I think, you know, for a long time one of our colleagues, Keith Jorgensen, was doing a lot of toupees because of worrying about the complications of dysphagia and hiatal hernia. We compared our data and what he found is that the dysphagia rate with a toupee was no different or even higher, so he’s gone now, I think, completely to a Nissen fundoplication. So I think the bottom line is, whatever operation you prefer, you can do laparoscopically, and I think if you have a routine, you can do it well and do it. I don’t think anybody would question that actually a fundoplication is one of those operations where we do it much, much better laparoscopically than we do open and I think you could see today the anatomy is just so clear. I mean, you know, it’s so easy to see everything and to make sure the geometry is right and you’re not retracting on the liver or retracting on the abdominal wall. We get a much better tension-free wrap, whether you’re doing a Thal or a Nissen or whatever you’re doing and I think it makes it much, much better.

WHIT HOLCOMB, M.D.

00:42:41.000  This was a beautiful demonstration of a laparoscopic operation and I want to congratulate you on it, and I want to thank the audience for their participation. Certainly all of us would like some feedback on this webcast to see what could be improved to make sure that it was educational, so we welcome anyone and everyone’s comments.

STEVEN ROTHENBERG, M.D.

00:43:03.000  Yeah. Certainly you still have some time to make some comments now and you can make comments offline and we can take those for future webcasts. I’d like to just take a minute to thank my entire OR staff, who put a lot of effort into creating this web broadcast. Oletta Harris, my charge nurse, is in charge of all the production and setting everything up, and Lee Hamby, who is my surgical assistant. Bernadette, our surgical tech, and Dr. Randy Clark, who is our anesthesiologist. I’d just like to thank the OR Live crew for coming in and setting this up. I am extremely excited about this. I think what we’re going to do over the next few months with a series of monthly live broadcasts and the ability to share techniques on a number of different procedures, and again on October 6 we’ll be doing a lung lobectomy. I won’t promise we’ll get the whole thing done in an hour, but we’ll get most of it, and then an imperforate anus, but I think this is amazing technology and will allow us to interact as a group on a much more frequent
basis. My hope is that in the near future we are able to broadcast on a weekly basis and that even just between those of us who have Network 1, that we’re able to interact on a much closer basis and share our cases, our advances, our questions, you know, and when it’s only a laptop away, it makes it very easy. I’d like to thank Dr. Holcomb for taking the time to fly in from Kansas City today. He’s extremely busy and it’s a great honor that he came here. It shows, I think, how he feels about the importance of this new advance in medicine. Lastly, I’d like to thank Karl Storz again because certainly without their support, none of this would have been possible. This truly shows their dedication to not only education, but to pediatric surgeons around the world.

00:45:00.000  I guess if we don’t have any questions, we can wrap up the broadcast. Thank you all for tuning in.