



COBLATION TONSILLECTOMY
GEORGETOWN UNIVERSITY HOSPITAL, WASHINGTON, DC
Broadcast February 23, 2004

NARRATOR

Approximately 500,000 tonsillectomies are performed on children each year, making it the second most common childhood surgery performed in the United States. These days, more and more pediatric otolaryngologists are performing coblation tonsillectomies, which result in faster and easier recoveries for tonsillectomy patients. You are about to see this relatively new procedure performed live from Georgetown University Hospital in Washington, DC. Today's broadcast is sponsored by the Departments of Pediatrics and Otolaryngology, Head and Neck Surgery. The coblation tonsillectomy will be performed by Dr. Earl Harley, Associate Professor and attending Pediatric Otolaryngologist, and one of the early adopters of coblation for tonsillectomy.

EARL HARLEY, M.D.

I use the technology that I use because, in my experience, I have found that children recover much quicker, there's much less pain, and the incidence of bleeding has markedly decreased in the last several years...last year and a half, actually, that I've used it.

NARRATOR

Georgetown University Hospital was founded in 1898 to promote health through education, research, and patient care. The hospital is a major academic teaching institution and is consistently ranked among the best hospitals in the nation by U.S. News and World Report, in numerous specialties, including neurology, gynecology, and orthopedics. The hospital's transplant institute has a national reputation and is one of the handful of centers doing small bowel transplants in children. Today's broadcast will be moderated by Dr. Norman Sanders, an anesthesiologist by training and the Medical Director for Arthrocare Corporation, the company that invented the coblation technology that will be used in today's surgery.

NORMAN SANDERS, M.D.

Good afternoon and welcome to surgery at Georgetown University Hospital in Washington, DC. I'm Dr. Norm Sanders. I'm the Medical Director of Arthrocare Corp., located in California's Silicone Valley. We're pleased to be here at Georgetown with Dr. Earl Harley, a pediatric otolaryngologist and Associate Professor in the Departments of

Pediatrics and Otolaryngology. Today, Dr. Harley will be performing a coblation tonsillectomy on a four-year-old male. As the surgical team prepares and before we introduce the staff, I'd like to provide a brief overview of tonsillectomy, coblation technology, and research in this area.

Tonsillectomy is the second most common surgery in children. There's almost 500,000 of these performed in the U.S. each year. The primary indications are hypertrophy with obstruction and recurrent infection. The incidence has been decreasing in the 1980s and 1990s. However, it's on the rise now, as hypertrophy with obstruction has been implicated in a number of other disorders which extend beyond the upper airway. These include attention deficit hyperactivity disorder, learning disorders, failure to thrive, and enuresis.

Tonsillectomies have been performed for generations. The traditional method was a cold steel dissection. The drawback was the difficulty in controlling bleeding. With the advent of electrosurgery, the so-called Bovey device, effective hemostasis was obtained. However, the thermal component provided for an extended, more painful recovery. Other technologies have been tried, with minimal success. While the laser is very precise, it has the same thermal component as a Bovey. The harmonic scalpel and the microdebrider may not remove the entire tonsil and also have less than optimal hemostasis. With coblation tonsillectomy, the risk is minimized of intraoperative bleeding secondary to effective hemostasis. It is more precise and there is less adjacent thermal damage as compared to a Bovey. This all translates for the patient into reduced pain and a faster recovery. Coblation technology has been in use since 1997. Over 2.5 million cases have been used worldwide. This technology is applicable across a broad spectrum of specialties, including orthopedic surgery, spine surgery, neurosurgery, cosmetic surgery, laparoscopy, and gynecology. The instrument you see on the bottom right of this slide is the instrument that Dr. Harley will introduce and use during this procedure. Here is a short video animation of coblation technology.

VIDEO NARRATOR

Coblation technology is a revolutionary patented process that is far superior to the older electrosurgical technology that surgeons have used in the past. With conventional monopolar electrosurgery, a powerful electrical arc is generated between the device and tissue to create a cutting effect. The high temperatures generated cause heat to penetrate deep into surrounding tissue, resulting in extensive tissue damage. Byproducts of this process include charred tissue and cellular fragments. With coblation technology, radio frequency energy is applied to an electrically conducted fluid, such as saline, creating a highly concentrated layer of ionized particles or plasma layer to form around the device. The charged particles in this layer actually disintegrates tissue, gently and precisely, one cell layer at a time. The result is volumetric tissue removal with minimal damage to surrounding tissue and, since coblation technology is a bipolar modality, the electrical field is focused around the device. This means less energy is required for operation and only the target tissue is affected.

NORMAN SANDERS, M.D.

Dr. Ian Brown is a senior scientist and founder of the Plasma Applications Group at the Lawrence Berkeley National Laboratory. He studied coblation technology extensively in medical applications.

IAN BROWN, M.D.

I have been interested for some years in the medial and biological applications of plasma physics, so I was most interested to learn of this technique. Coblation is a plasma-based method in which molecular bonds in the tissue are broken using the plasma, whereas RF-based methods are really higher temperature methods in which the tissue is burned in order to remove tissue.

NORMAN SANDERS, M.D.

Coblation was introduced into otolaryngology in 1999. Since that time, over 300,000 ENT procedures have been performed. Aside from tonsillectomy, these include inferior turbinate reduction, soft palate reduction, and uvulopalatoplasty. Let's take a look at some of the research. This study is a preclinical study conducted at the University of Pennsylvania and published in *Laryngoscope* in 2001. Identical sized lesions were created in a series of rat tongues, half with coblation and half with Bovey. At day 7, the coblation lesions were healed. However, at day 14, the Bovey lesions were still not healed. These are tonsillar fossa pictures after excision in the operating room. On the left is the Bovey. Note the char in the tonsillar bed. On the right is a coblation. Notice the lack of char and the clean edges. A clinical study was conducted on 20 adults and published in *Laryngology and Otology* in 2002. This double-blinded randomized study used the patients as their own control. One tonsil was excised with coblation, while the other was excised with the Bovey. Just as in the rat findings, at day 9 the coblation sides were virtually all healed and none of the Bovey sides were healed. How does this translate into pain? Looking at the VAS pain scales, the coblation side had less pain and a shorter duration. A number of studies have been undertaken involving children. This study, published in the *International Journal of Pediatric Otolaryngology* in 2001, and the results were consistent with that of adults, that children had less pain and for a shorter duration. A large scale, multi-center clinical trial has recently completed and it is in press in *Otolaryngology, Head and Neck Surgery*. In this comparative study, those children treated with coblation had a lower incidence of throat swelling, nausea, had less frequent use of narcotics, earlier cessation of use of narcotics and, very interestingly, there were fewer calls and visits to the physicians than the Bovey. Overall, the parents had a better perceived postoperative outcome.

One of the most serious complications of tonsillectomy is secondary or delayed bleeding. In a large scale clinical review published in *Laryngoscope* in 2003, nearly 2,000 patients were reviewed, both adult and children. Those patients treated with coblation had less than ½ the incidence of secondary hemorrhage.

During this broadcast, we'll be taking live questions from our viewing audience. Simply click on the email button or type in coblation@or-live.com. The surgical team is nearly prepared to go. I would like to turn this over to Dr. Harley and have him introduce his staff and described the technology and technique.

EARL HARLEY, M.D.

Good afternoon and welcome to Georgetown. In a minute, we're going to perform a coblation tonsillectomy on a young male with obstructing tonsils. Before we start the procedure, I'd like to introduce my staff. We have Mr. Chris Bocci, who is our video surgical instrument technician. This is Linda Tony, head of ENT nursing here at Georgetown. Ms. Jackie Backus, who is our circulating nurse. This is Mary Ann Robinson, our scrub nurse. My resident, Dr. Henry Sandal. This is Dr. Suda Ved, the Chief of Pediatric Anesthesiology here at Georgetown, and her resident, Sophie Pestu.

Before we get started, I'd actually like to go through some of the instrumentation that we're going to use this afternoon. We're going to be using the coblation technique. This is a coblation wand. It's called the Evac-70. This is my performed wand for performing coblation tonsillectomy as well as adenoidectomy. A mouth gag, a Crowe-Davis mouth gag, which is used to engage the upper and lower jaws and to gain access to the oral cavity. This is called at bending tool. Oftentimes we have to bend the coblation wand to gain access. Sponges are used for tamponading and a variety of tonsillar clamps are used, a curved tonsillar tenaculum or straight. It depends on the anatomy of the child which one we used. Retractor for the tonsillar pillars. This is a mirror that I use to visualize the adenoids. These are clamps and red tubes that we use to retract the palate to expose the adenoid tissue.

At this point, we'd like to go directly to the tonsillectomy. We start out with either our straight or our curved...in this case I'll use the straight clamp because of the anatomy of this particular child. I will grab the tonsillar capsule. I'm careful to engage under the anterior and posterior pillar. I expose the upper area, known as the fossa plicae triangularis, which is this upper mucosal band of tissue here. This is where I will start my dissection. We start superiorly, exposing in sort of a sweeping, painting motion. You will notice that saline, there is generous saline flowing, as this technique is performed in a saline-based medium. I'll take my dissection inferiorly as the anatomy allows. If there's any minor bleeding, I will use my coagulation mode to control. So far, we have had none. We've identified the capsule nicely here and we will continue our dissection. It is important that I pull medially. As you will notice, I'm pulling medially on the tonsil. Again, a pocket is created here. I'm now exposing the posterior tonsillar pillar. This is a careful dissection.

At this point I'm going to re-grab the tonsil, the capsule. Separating the tonsil from the posterior pillar here, anteriorly. Re-grabbing again. The posterior pillar is being separated. We make our way to the inferior polar of the tonsil. Again, a sweeping motion. Re-grabbing again. I'm using traction and counter-traction to help in my dissection as the coblation moves along the capsule and helps to peel away the tonsillar tissue. Again, I'm

carefully dissecting the pillars. We want to maintain as much of the tonsillar pillars as possible, so I carefully dissect the tonsillar tissue away from the muscle, which comprises the anterior and posterior tonsillar pillars.

NORMAN SANDERS, M.D.

Dr. Harley, a question has come in. What setting do you use on the control unit?

EARL HARLEY, M.D.

I'm using my coblation setting at 7. It's important to note that this is a coblation-2 apparatus. The earlier version of the coblation, there were different settings, but with the coblation-2, my coblation setting is at 7.

NORMAN SANDERS, M.D.

What is the most frequent indication that you see for tonsillectomy?

EARL HARLEY, M.D.

The most frequent indication in this age group, the young child, 5, 6, 7, is obstructing tonsils. We have now removed our right tonsil. We will pass it off to our scrub nurse, who will submit that to pathology.

NORMAN SANDERS, M.D.

When you say obstruction, what is the relationship between obstruction and other childhood diseases?

EARL HARLEY, M.D.

Recent reports have demonstrated a variety of disorders which we were unaware of 10 years ago. These include failure to thrive, enuresis or bedwetting, so-called secondary enuresis in children who have already been potty-trained, who may begin to bed-wet again at 5 or 6. We have children with some learning disabilities, children with ADHD. I've had several children referred to me, one within the last week, with ADHD to be considered to have the tonsils removed, so there actually are a variety, in addition to the known indications, such as large tonsils obstructing the airway or strep throat, which is also still a factor in some of these children.

We have some minor bleeding here at the lower pole and I will use my coagulation mode here. You can see it nicely coagulates. It's a little different than using a regular heat cautery in that you should apply it for a longer period of time, but you see it coagulates nicely, obviating the need for any heat cautery.

NORMAN SANDERS, M.D.

So it is important to use it in a different fashion than you would use a Bovey.

EARL HARLEY, M.D.

Yes. I am actually, see, I applied there and I just kind of leave it for a second or so and you can see it's controlled. There's no further bleeding. I'll go back later and look at that again at the end of the case, but it looks pretty dry.

NORMAN SANDERS, M.D.

Yes, you can notice the lack of charring in the tonsillar bed.

EARL HARLEY, M.D.

Right. No charring. Now we'll go to the left tonsil. Sometimes it's a minor adjustment for the mouth gag. For this tonsil, I'm using the curved tenaculum. I used the straight one on the other. You can use whichever one. My preference is actually the curved one. You can see again, I have a nice purchase on the tonsillar capsule. It's very important to grab the capsule. Some nice, tough tissue. We can evert that tonsil out into the oropharynx. Now, it's the left tonsil, so I'll use my left hand, as I used my right hand on the right tonsil. Again, we start superiorly in this plica triangularis, semilunares area here, superiorly. Again, you can create a window up here, as you can see we're doing right here. It sometimes facilitates identifying the capsule. If I get any minor bleeding, as I indicated, I'll just go ahead and switch right to my coagulation mode. Here's my window. It's a nice window here. Anterior pillar. Separating the capsule from the lateral pharyngeal wall. We try to avoid the muscle in the lateral pharyngeal wall and that minimizes pain by avoiding taking your dissection down to muscle.

NORMAN SANDERS, M.D.

What do you consider the benefits of coblation for your patients and/or their parents?

EARL HARLEY, M.D.

The benefit that I've seen in the almost two years that I've used this is that there is marked reduction in pain. I mean, to the point where some children have 1-2 days of pain and even that is minimal, whereas in the old days of Bovey, we were talking a week of pain, sometimes very significant pain, so the child has less pain. We can reduce the pain medication that we use. In the past, we used a lot of narcotics, such as Codeine, and now we're using lesser forms of analgesics, such as Tylenol, in that they don't have as much pain.

NORMAN SANDERS, M.D.

So you can avoid narcotics in some patients?

EARL HARLEY, M.D.

Yes. My technique is actually to offer the narcotics to the parents and advise them that the child may or may not need it, so if they need a narcotic, especially at night, they may wake up with some pain and discomfort, they'll have it, but advise them that just regular Children's Tylenol may be sufficient. It's actually important to advise the parents not to use Motrin or Advil, as that can promote bleeding, but regular Children's Tylenol works just as well in most of these children.

NORMAN SANDERS, M.D.

Another question came in concerning the controller settings. This question is, are the settings different for adults than children and do the settings affect healing?

EARL HARLEY, M.D.

Good questions. As I'm a pediatric otolaryngologist, I have very few children beyond the age of 10 or 12, so I actually don't know a lot about adults, but I would imagine, because adults have had more infections, maybe have more scarring, that I would imagine settings...but I really don't want to speak on that because I don't have experience. What was the question on healing?

NORMAN SANDERS, M.D.

Do the settings affect healing?

EARL HARLEY, M.D.

I don't know. I pretty much use the same setting.

NORMAN SANDERS, M.D.

Another question came in that's very interesting. Is there a physical sign that indicates the bed is cauterized well enough?

EARL HARLEY, M.D.

Good question. The physical sign is the lack of any bleeding. I have never had to bring a patient back who I have cauterized. We've never had a bleeder that had to return to the operating room, in almost two years that we've done this, so the cautery that we've used has been sufficient.

NORMAN SANDERS, M.D.

I'd like to ask a question to our attending anesthesiologist, Professor Ved. As a former anesthesiologist, I see that the anesthesia is being conducted with an LMA, the laryngeal mask airway. I would never have been comfortable with that technique and I'm interested about the rationale as to why you're comfortable using the LMA for a tonsillectomy.

SUDA VED, M.D.

The biggest advantage of using the LMA is it prevents the fluids and blood from going into the stomach and into the larynx and into the voice box, so as you can see with this particular LMA, most of the fluid is held right on the bowl of the LMA, yet allows free and clear ventilation through the mask on the other side. You can see the way it's placed there is identical to what we see in the oropharynx. The seal on the cup here keeps all the fluids from going down. There are other advantages to using this. The biggest advantage, of course, is the fact that you're not intubating the patient.

NORMAN SANDERS, M.D.

Thank you. I understand there might have been some minor difficulties, so just to reiterate, because of the control with coblation, it makes it safe to do, but also the size of the mask airway itself inhibits the aspiration, pulmonary or gastric aspiration, of saline or blood. And it also leads to much smoother emergence and avoids any potential complications of the endotracheal intubation.

I have another question here, Dr. Harley. Why is the tissue blanched white?

EARL HARLEY, M.D.

The coblation...I'm not a physicist, so I don't know all the physics of this, but my understanding is that by coblation, there's dissociation of the molecules, which causes disruption of the tissue and I can only imagine it's somehow related to that, but I'm not a physicist who can actually speak to that.

NORMAN SANDERS, M.D.

How do you find this technique differs from other techniques that you have tried?

EARL HARLEY, M.D.

I find that this technique, from a technical standpoint, has the feel of a Bovey. As a matter of fact, having used the Bovey for many years, I found this an easy transition. It has the feel of the Bovey, but the planes are, as you know, are not charred, so there's no thermal injury. There can be some minor bleeding, as you could see, that was controlled very readily just with our coagulation mode, so this compares favorably to other techniques. Actually, it's superior, in my experience, to the initial techniques that I used as a resident, where we actually used a scalpel and scissors and a snare to actually avulse the tonsils. This is light years beyond what we used to do 20 years ago.

NORMAN SANDERS, M.D.

How many tonsillectomies did you have to do with coblation before you became comfortable with this technique?

EARL HARLEY, M.D.

Really, it took about 30 tonsillectomies. I started out in the summer of 2002, I believe, so it's been almost 2 years. I did a few here and there, then I did a few more. I got the feel for it. After about 30 that I did totally myself, not residents, but I actually did them myself, where I got the feel and got comfortable, then I saw the clear advantages, plus I was starting to see the parents coming back. They were saying how well the children were doing and the children had almost no pain or didn't require any pain medication. I have had comments from recovery room nurses who noticed the difference, so after the first 30 and getting the feedback I was getting, I went exclusively to coblation technique over a year ago.

NORMAN SANDERS, M.D.

Here's a question that came in and it's very legitimate to ask. Have you in any way been compensated by the corporation at this time or any other time?

EARL HARLEY, M.D.

Absolutely not. I have no financial connections to the corporation. I've had no compensation and will not actually accept any. This was not...there's no financial, no back room, nothing. So no, I'm doing this because I think this is, in my mind, the procedure of choice for tonsillectomy in children, without any type of personal gain for me.

NORMAN SANDERS, M.D.

Here's a question, again, on hemostasis. Does coblation handle an articular pumper as well as an oozing site?

EARL HARLEY, M.D.

In my experience, yes. In this case, we've not had any arterial pumpers, just some minor capillary bleeding, but I've actually had some pumpers that I've coblated. At first, when I first started doing these, I was thinking, oh wow, we better get suction cautery out, but actually coblation itself...again, coblation-2, which is what I've been using for the last year...with coblation-2, the arterial pumpers, I've never had one come back to the operating room or even bleed, so in my experience, yes, coblation handles arterial pumpers well.

NORMAN SANDERS, M.D.

You began the case by opening a window at the superior pole. Can you explain why you do this?

EARL HARLEY, M.D.

I find it easy to approach the tonsil from the superior pole. That plica triangularis, semilunares, which is a mucosal fold right above as the tonsillar pillars come to an apex, like this and the tonsil sits in it, there's a mucosal fold called a plica semilunares and there's actually a little space in there where, if you can get in that space, you can actually identify the superior pole of the tonsil and from there it actually is a fairly easy dissection, so that's why I start superiorly.

NORMAN SANDERS, M.D.

Would you begin differently if the anatomy of the tonsils was different? What if the tonsil was very recessed?

EARL HARLEY, M.D.

Oh, absolutely. There are three different tonsillar configuration, one where the tonsil is very recessed and sits almost enclosed, engulfed within the tonsillar pillars. The second is halfway out and the third type is basically hanging out like low-lying fruit. For that very recessed tonsil, it is very important to get your clamp, and what's why I really like the curved clamp, get it in there and grab the capsule and really evert, pull that tonsil so actually you're turning the fossa inside out. Those are the most difficult. This tonsil today was of medium difficulty, but those very recessed are the most difficult. The easiest are the ones that are just kind of hanging out and just there for the plucking, so yes, there are different techniques and different levels of difficulty.

We're actually all finished. Just a little mucosal bleeding here, which has stopped. You can see I'm using my coagulation mode, but we're actually finished with the procedure. We're going to irrigate with a little saline and we'll take the clamps.

NORMAN SANDERS, M.D.

Dr. Harley, here's a question. I noticed that you used a very light touch. Why is this important?

EARL HARLEY, M.D.

A light touch is important because, #1, a light touch is all that is necessary. As you are using the coblation mode, it is very effective in cutting. If you use too heavy a touch, you would be more apt to get into some of the arterial or venous bleeders, so the light touch is actually, #1, all that's needed, but #2, it avoids any significant bleeding.

NORMAN SANDERS, M.D.

Alright. A number of questions have come in. One is concerning the mechanics. Do you need to be concerned about the Evac-70 touching other metal devices and causing a secondary burn, as with the Bovey?

EARL HARLEY, M.D.

I have never seen a secondary burn in that it does not use thermal energy. In my understanding, in the several hundred I've done, I've never seen a secondary burn and I don't think that's an issue. Okay, I'm taking him out of suspension now, carefully. That concludes the procedure.

NORMAN SANDERS, M.D.

How do you find this technique compared with the harmonic scalpel? Any difference in heat?

EARL HARLEY, M.D.

Yes. I've used the harmonic scalpel on a couple of occasions in the past and I find, in terms of heat, the heat levels may be about the same, but I find the harmonic scalpel does not lend itself well to tonsillectomy. It's a great tool for other parts of the body, liver surgery and places like that, but for the tonsils, I don't find it lends itself well for the tonsils and it doesn't lend itself at all to adenoids.

NORMAN SANDERS, M.D.

Can you use coblation for the adenoids?

EARL HARLEY, M.D.

Yes, you can. As a matter of fact, this child had his adenoids out prior to this surgery, but today, prior to beginning his tonsillectomy, we used coblation to do a little bit of a touch-up of the adenoids, but the answer is yes, you can use coblation for adenoids.

NORMAN SANDERS, M.D.

Are your postoperative results similar for chronic tonsillitis versus hypertrophy?

EARL HARLEY, M.D.

Good question, actually. In my observation, my results...well, first of all, my chronic tonsillitis or recurrent tonsillitis tends to be an older age group. They tend to be the 7- to 10- or 12-year-olds or teenagers, whereas my obstructive patients tend to be the young

patients, like this young boy, so they have very nice, clean tissue planes and very easy dissections, where with chronic tonsillitis the dissections are a little tougher. The tissue planes are not as nicely or not as well defined. Consequently, we actually see some of the older children, the 10- and 12-year-olds recovering a little longer. They approach a week in recovery, whereas the 3- and 4-year-olds are 1-3 days, so recovery time actually is affected by whether or not it is chronically inflamed.

NORMAN SANDERS, M.D.

How long does a coblation tonsillectomy take, versus a Bovey tonsillectomy?

EARL HARLEY, M.D.

It depends on the anatomy. If it's a very recessed tonsil, as I talked about a minute ago, the coblation technique probably adds a little bit of time to it. If the tonsils are not recessed, then it's about the same as Bovey, so again, it's dependent on the anatomy.

NORMAN SANDERS, M.D.

Do you have any surgical pearls that you can pass on to the listening and viewing audience?

EARL HARLEY, M.D.

In terms of the technique, the most important thing I've found is really getting the tonsil and everting, like I said, turning the fossa inside out, basically. You really want to expose that capsule and start superiorly to expose that window, that superior window, and just go carefully, using a light touch, kind of a sweeping. Sometimes I use a reverse sweep, so I'll just sweep backwards, kind of a sweeping motion for the actual dissection.

NORMAN SANDERS, M.D.

Are there any other applications for coblation that you have experience with?

EARL HARLEY, M.D.

I've used coblation for many applications. I've used it for children with obstructive apnea who have not responded to tonsillectomy. We've gone back to do a uvulopharyngopalatoplasty, so I've used it on the palate. I used it on the tongue base in a girl with Down's syndrome who had a large tongue. I've used it several times for obstructing inferior turbinates. Many of my children have allergies and have large turbinates and some of their obstruction actually comes from the nose, as opposed to the adenoids, so I've used it there. Those are the common indications that I've used it for, other than tonsils.

Thank you. I'd be happy to answer any other questions or you can contact me through the Georgetown website, I would imagine, if you have other questions that come in later.

NORMAN SANDERS, M.D.

A couple of questions have come through. What is your postop bleed percentage, primary and secondary?

EARL HARLEY, M.D.

Good question. First let me quote to you the national statistics. It's thought to be 2-4%, with those divided between primary and secondary. Primary is bleeding within the first 24 hours and secondary is bleeding beyond that, so it's about 2% in each of those two periods. Since I've started coblation tonsillectomy, I've have 0 primary bleeds. In terms of secondary bleeds, in other words, a child who went home and had a bleeder, we've never had one to be readmitted to the hospital, so it's a 0% readmission rate for bleeding. We have had two children with clots, blood clots, that I was able to suction out in the clinic, so that's my rate. It's less than 1% of secondary bleeding and 0% of primary bleeding.

NORMAN SANDERS, M.D.

In your estimation, how many children have had coblation tonsillectomies at Georgetown?

EARL HARLEY, M.D.

I personally had done probably 300 and there's probably another maybe 100. Maybe 400 children altogether at Georgetown.

NORMAN SANDERS, M.D.

Here's a question that came in: How common is coblation tonsillectomy? I can answer that. Approximately 15% currently of all tonsillectomies in the United States are performed with coblation.

Is coblation the standard procedure now? Are Bovey procedures still done?

EARL HARLEY, M.D.

It's actually very generational, very interesting. If you were to pole three generations of otolaryngologists, you will get three different techniques. Some of the older otolaryngologists will still use the old standard scalpel and dissection technique. Those of my generation are using probably more Bovey than anything else. The younger generation of otolaryngologists, such as Dr. Samuels, our resident, who are being taught the coblation technique, I supposed in that generation, coblation will be the standard, so it's a generational thing.

NORMAN SANDERS, M.D.

How does the bending device work for adenoids?

EARL HARLEY, M.D.

You oftentimes must bend the coblation in order to gain access, so it inserts in here. If you want to get it all the way to the end, you can. Sometimes you have to put a little saline and then it's a gentle bend. You don't want to get a crimp in it, so it's a gentle bend like that. You can bend it either way, but you've got a nice, even bend and then this allows you sometimes to gain access to difficult areas up in the nasopharynx.

NORMAN SANDERS, M.D.

Thank you. We're awaiting some more questions from our viewing audience.

EARL HARLEY, M.D.

Okay. We're going to turn the table back now to position.

NORMAN SANDERS, M.D.

Concerning the LMA, do you allow the patient to wake up fully before you remove the LMA?

EARL HARLEY, M.D.

Dr. Ved's not here, but I can answer the question for her. The answer is yes. I've worked with Dr. Ved and, like I said, she's done several hundred tonsillectomies with LMA. I think I've done most of those with her. I know she likes to have the child awake, fully awake, before she takes it out.

NORMAN SANDERS, M.D.

So the use of LMA with coblation tonsillectomy sounds to be the standard here at Georgetown.

EARL HARLEY, M.D.

Well, it's the standard with me and Dr. Ved. I mean, there are five pediatric anesthesiologists here at Georgetown and two, maybe three use it, and two don't use it. So it's a standard with me. As far as I'm concerned, the LMA is actually a technique which lends itself very well to the coblation tonsillectomy because it protects the airway from saline. Also, you don't have the intubation trauma to the larynx. If there's any

bleeding, it prevents bleeding down into the trachea. So it's actually an ideal adjunct for coblation tonsillectomy.

NORMAN SANDERS, M.D.

Another question came in about controller settings. Dr. Harley, what setting do you use for coagulation?

EARL HARLEY, M.D.

My default mode is 3 but I sometimes will go to 5, if I have a serious...like, today I only used 3, but if I have significant bleeding, I'll raise it a little bit, but you can usually start between 3 and 5.

NORMAN SANDERS, M.D.

Is there any regrowth of the tonsil or difference between coblation and Bovey? Any difference in regrowth between coblation versus Bovey?

EARL HARLEY, M.D.

I don't think so. As I know, the studies have not been done to look at regrowth. I know some of the other techniques that are being promoted have looked at regrowth, but for coblation, I haven't seen studies, so I can't answer, but I don't think so.

NORMAN SANDERS, M.D.

Dr. Harley, any final words before we wrap up?

EARL HARLEY, M.D.

My only final comment is that, in my experience, coblation has actually changed the face of tonsillectomy in children and made it something that made a necessary operation one that limits the amount of morbidity that you would normally see, such as pain and bleeding, so as far as I'm concerned, it's the technique of the future for tonsillectomy.

NORMAN SANDERS, M.D.

Thank you very much, Dr. Harley. The procedure went wonderfully and your thoughts and comments are very well appreciated. This brings to a conclusion our live broadcast of a coblation tonsillectomy at Georgetown University. This can be watched for a period of one year, archived, at www.or-live.com. We appreciate your viewing. Thank you very much.

NARRATOR

You've been watching a coblation tonsillectomy performed live at Georgetown University Hospital in Washington, D.C. Come back to the site often to get details about upcoming live chats with surgeons.