

**ADVANCES IN PAROTIDECTOMY AND THYROIDECTOMY SURGERY  
UNIVERSITY OF TEXAS, M.D. ANDERSON CANCER CENTER  
HOUSTON, TEXAS  
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NARRATOR: The program is sponsored by Ethicon Endo-Surgery, Incorporated. Over the next hour see an expert clinical discussion of advances in technology and enhanced techniques when performing parotidectomy and thyroidectomy surgeries.

During the presentation, Doctors Randall Weber and Gary Clayman will feature the use of Harmonic technology for superficial parotidectomy, open thyroidectomy and video assisted thyroidectomy. ORLive makes it easy for you to learn more. Just click on the "Request Information" button on your webcast screen and open the door to informed medical care.

Today's program is coming to you from the University of Texas, M.D. Anderson Cancer Center in Houston, Texas, where our presenters have staff appointments. Dr. Randal Weber is the Chairman of the Department of Head & Neck Surgery, M.D. Anderson Cancer Center. He is a practicing surgeon, a professor of surgery and a Hubert L. and Olive Stringer Distinguished Professor in Cancer Research. Dr. Gary Clayman is the Director of Research, Interdisciplinary Head & Oncology Program, a practicing surgeon, a professor of surgery and the Deputy Head, Division of Surgery.

00:01:42

RANDAL S. WEBER, MD, FACS: Good evening and welcome to our webcast this evening. I'm Dr. Randy Weber and my colleague with us tonight is Dr. Gary Clayman. We'd like to welcome you to advances in parotidectomy and thyroid surgery. We'd like to share some new technology with you that I think assists in our ability to perform these procedures. I'm chairman of the Department of Head & Neck Surgery and my colleague is a senior surgeon in the Department. Be sure that you make this interactive. We look forward to your questions. There's a button on your screen that you can use to directly access us and send in questions. So, let's keep this lively and interactive, Gary.

00:02:22

GARY L. CLAYMAN, DMD, MD, FACS: I'll try my best.

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RANDAL S. WEBER, MD, FACS: So you see the disclaimer here. That's to keep the government happy, so we'll move on with the presentation at this point. Some of this may be by way of review for all of you, but as you know parotid tumors or salivary gland neoplasm's in general are very rare. They're about one percent of all tumors and in the head and neck they comprise about seven percent of the neoplasm's that we see. Most of these occur in the parotid gland and so it's important that you understand the technique of parotid surgery so that you safely remove the tumor and get a good outcome. And most of the tumors, fortunately for patients are benign and that's what you're likely to encounter in practice.

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Before you ever perform a surgery on a patient, you obviously want to have some good idea of a differential diagnosis. And for parotid tumors, in general they're going to

present...present as a benign pain...or, a painless mobile mass in the lateral lobe. But there's some features that will really tip you off that it may be a malignant process. Of course, any signs of facial paresis or parapalysis, if there's fixation of the tumor. If there's any lymphadenopathy that would definitely raise your concern that you're dealing with a malignancy.

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We see a lot of skin cancer at M.D. Anderson, as you're aware, and if the patient presents with any facial numbness, with a past history of a facial skin cancer and a mass in the parotid, you would certainly want to consider that this is not only metastatic, but there may be some nerve spread as well.

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It's controversial whether you need imaging prior to surgery, but I think when in doubt I tend to order imaging studies. For a small mobile mass in the lateral lobe, imaging is not going to be contributory. But, in certain instances if...especially if you think you're dealing with a malignancy, either CT Scan or MRI is very useful. I like CT Scan because it will identify metastatic lymphadenopathy. It's excellent for invasion of the temporal bone or the skull or the mandible. Whereas MRI will really image nerve very well. And if a nerve is potentially invaded or if there is inflammation around the nerve it will be demonstrated on a high quality MRI Scan.

Sometimes when you have massive tumors invading the skull base, both modalities can be useful. Fortunately that's a rare encounter.

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Here's an example where I think imaging was very helpful. You always want to have your surgery planned ahead of time and if imaging helps you make a better surgical plan then it's worth getting. And you can see in this patient who has a tumor that's really arising in the deep level of the gland but extending into the superficial lobe, it's going to require a lot of facial nerve mobilization and so that prepares you for the surgery. It also allows you to prepare the patient that they may have some weakness of the facial nerve after the operation.

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Fine needle aspiration is another controversial area. I find it useful in my practice, again, for the straightforward patient mobile mass in the lateral lobe it's not always helpful. But if there's any concern for malignancy or lymphoma or inflammatory process, needle aspiration can definitely give you some good information for planning. In general we felt that the specificity and sensitivity of this diagnostic tool was around seventy percent. But if you look at this data that I present on the slide here you'll see that it's better than eighty-five percent in most series and so it can give you some very valid information. One thing I never do is make a decision regarding preservation or sacrifice of the facial nerve based on a cytologic diagnosis, because as you can see it's certainly not a hundred percent accurate.

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GARY L. CLAYMAN, DMD, MD, FACS: Would you get it on a young patient, Randy? A twenty-five year old presents with a lateral lobe, you know, palpable mass tail of the parotid area?

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RANDAL S. WEBER, MD, FACS: No, I don't think it's necessary. But I...I would if I was considering lymphoma, if I thought it might be a Warthin's Tumor, which would not be common, of course, in a young patient. Perhaps someone you don't want to operate on, do a needle aspiration and if it's a benign process they have a lot of morbidity...or, comorbidities and general anesthesia should be avoided. It can help you make a therapeutic decision.

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RANDAL S. WEBER, MD, FACS: Always play your surgery before you get into the operating room. So, you want to know where the primary or where the tumor is located. Is it in the lateral lobe? Does it extend into the deep lobe? Is there parapharyngeal extension? Is it

likely that I may have to sacrifice the facial nerve? Not very common, except in patients, of course, who present with some paresis or if they have some fixation, or if the tumor on imaging is in proximity to the stylomastoid foramen, that may be a...a tumor where a facial nerve sacrifice might be necessary. Are clin...are lymph nodes present? Am I going to need to perform a therapeutic lymphadenectomy. Again, not very common, but we do see it in high grade tumors. So in the setting of a high grade neoplasm, facial weakness or paralysis, lymph node metastasis is common and so management of the neck will also be necessary.

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The surgical procedure is one of the things that we learn very thoroughly in our residency and in our fellowship training program, but I think there's some useful adjuncts. And one is a broad plan of dissection. You never want to work in a constricted field trying to identify the facial nerve. Broad dissection will allow you to very comfortably identify the nerve and protect it. I always use illumination to give me good lighting, particularly in the region of the facial nerve. As I've gotten older, I definitely use surgical loupes on most of my cases, but in particular I use it on parotid surgery.

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I don't routinely use a facial nerve monitor. I don't know what your practice is, but in reoperative cases, in cases where I'm very concerned that it's going to be a judgment interoperative decision regarding facial nerve preservation, I might use a nerve...nerve monitor in that setting. Or, in a deep lobe tumor where I may have to mobilize a nerve extensively I think it can help you avoid trauma to the nerve.

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GARY L. CLAYMAN, DMD, MD, FACS: Yeah, and I haven't used it. But I certainly use magnification. And, what...what magnification do you use, Randy?

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RANDAL S. WEBER, MD, FACS: I use two and a half. When I reach a little...the next decade of life...life it may be up to three, actually. So right now I use two and a half.

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GARY L. CLAYMAN, DMD, MD, FACS: Yeah, see, I must be already there.

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RANDAL S. WEBER, MD, FACS: Important landmarks. There really are only two landmarks that I think are critical. One I think is the digastric muscle. That tells you the plane of the facial nerve. The posterior belly of the digastric, once you've skeletonized that in this broad dissection you're going to be in proximity of the facial nerve. And the second most important landmark is the tympanomastoid suture line. That's a bony landmark and it doesn't vary between patients. Everything else can be variable, depending upon the patient.

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So here it is depicted. That red dot is where the money is. That's where the nerve exits the stylomastoid foramen. So as you do this broad plane of dissection, if you palpate the bony external ear canal and you allow your finger to proceed inferiorly where it drops off in that cleft is the tympanomastoid suture line. Once you have identified that, the facial nerve is going to be within about five millimeters of the suture line. So, it really isn't a lot of need for concern or worry because it's a fairly constant landmark and it will take you right to the nerve. And then, of course, once all of that's dissected broadly and you're at the level of the digastric, that's where the facial nerve is going to be.

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So how do we do a parotidectomy. Well, there's some important rules to obtain the best result from the standpoint of facial nerve function, because that's what it's all about. Remove the parotid, remove the tumor and have a functioning facial nerve when you finish. So it's gentle soft tissue technique. You obviously want to avoid stretching the nerve when spreading the overlying parotid tissue. Keep the nerve in direct vision at all times as you

divide the overlying parotid. And it's important that you avoid thermal injury. We use the bipolar cautery, we may use a Shaw knife, we may use a focus to obtain hemostasis. And you never want to get any heat near the nerve, because that will increase your risk of a paresis post-op. I tend to dissect the nerve sequentially. I'll start superiorly and go inferiorly, or inferiorly and go superiorly.

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So here's a standard parotid incision we use for a patient with a very large lateral lobe mass. We raised the flap in this case in the subplatysmal plane. You can also raise it in the subcutaneous plane. If there's any question the parotid tumor has penetrated the capsule of the gland, also do a thinner flap. Never go deep to the platysma, because you may enter the tumor inadvertently. So, again, a broad plane of dissection. The small ruler here is demonstrating the proximity of the facial nerve. You can see the main trunk. It's about a centimeter adjacent to the stylo...or, to the tympanomastoid suture line.

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In this case we've decided to dissect the parotid from inferior to superior. And because the tumor mass was so large it had displaced the facial nerve branches, or at least the...the distal portion of the nerve. Here's the nerve that's been dissected. You can see how markedly displayed the upper and lower divisions are. And this is the completed dissection. And just remember even though those nerves are displaced, when you get anteriorly they're going to return to their usual anatomic position because they enervate the mimetic muscles of the face.

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When do we resect the nerve? This is a difficult decision, but I think that the guidelines for preserving in facial...or, dis...resecting the facial nerve are pretty clear. When the nerve is clearly invaded, when you can't develop a plane of dissection the nerve has to be sacrificed. If you can peel the tumor off the nerve, then we preserve it, particularly if it's working preoperatively. We know in those cases in malignant tumors that we might leave some microscopic disease behind. But we also know that adding radiation after that will result in a very good local control rate.

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GARY L. CLAYMAN, DMD, MD, FACS: Randy, do you do a frozen section before you sacrifice the nerve, just in case it's a lymphomatous process or something else that really wouldn't require a nerve sacrifice?

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RANDAL S. WEBER, MD, FACS: Absolutely. And in those cases I already have a cytologic diagnosis that's suggesting or indicative of malignancy. So, as I dissect the facial nerve, the nerve is edematous, if it's grossly abnormal and all of a sudden I'm in a plane that I can't free the tumor off the nerve, then I'm going to get a small biopsy of the tumor itself and get a frozen section. And, of course, having an experienced pathologist help you interpret that is critical. But if it's malignant on frozen, if the cytology is malignant and that nerve can't be dissected free without leaving gross disease, then it has to be sacrificed. It's generally no trouble on frozen section to differentiate a lymphoma from a carcinoma.

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So in this case, as you can see, this nerve was actually invaded. There's no way to serve it...save it. It's encased with tumor. And in this case, fortunately, you can preserve nerve because although it's abutting it, you can dissect the tumor away and preserve the facial nerve with good function.

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I'd like to discuss with you a little bit about some of the technical aspects of Harmonic surgery. The newest instrument that we're using – what we'll demonstrate tonight on the videos – is the Focus. But, basically, it's heat and heat coagulates protein and it seals blood vessels. We have a video here that we'd like to show you that will highlight some of that technology.

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NARRATOR: In the Harmonic System, an ultrasonic wave operating at a frequency of 55,500 cycles per second causes the active blade to vibrate, creating excursion of the blade tip from fifty microns at Power Level One to one hundred microns at Level Five. The transducer, housed in the Harmonic hand piece converts electrical energy to mechanical energy. It consists of a stack of piezoelectric ceramics sandwiched under high pressure between two metal cylinders. When pulsed with a high voltage electrical signal from the generator at the resonant Harmonic frequency of the ultrasound acoustic system of 55,500 hertz, the transducer, blade extender and blade expand and contract with each wave length along the entire length of the device. Longitudinal expansion and contraction increases from just a few microns of longitudinal motion at the transducer to fifty to one hundred microns at the blade tip, where maximum motion occurs.

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GARY L. CLAYMAN, DMD, MD, FACS: Randy, we've got a question from the viewing audience. And one of the questions was, when do you switch from a proximal to distal versus a distal to proximal dissection of the facial nerve?

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RANDAL S. WEBER, MD, FACS: Good question. I almost always do a proximal to distal dissection. The only time I will go out distally is if there's been prior surgery and there's too much scar tissue to affix...to identify the main trunk of the facial nerve. Fortunately, that's rare. If I do go distally, I try to dissect the mid-facial branches first, because if you have an inadvertent injury in that location it produces less of a problem for the patient than if it's an eye branch or the...in the lower lip.

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So, I'd like to go ahead and discuss a little bit more with you about the properties of this. This slide discusses the differences between the Focus instrument and the Harmonic electrocoagulation versus other instruments, such as a bipolar cautery or the electrocautery. But, basically, the principal is the same. It's all about heat. And if you can use a lower heat to obtain the same result you get less thermal spread and less risk of injury to nerves. And it...especially in the surgery that we demonstrated today, thermal injury to the nerve is really---

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GARY L. CLAYMAN, DMD, MD, FACS: It's the whole story.

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RANDAL S. WEBER, MD, FACS: ---is really something that has to be avoided at all costs. So we'd like to show you another video here. And I'm going to test you on these afterwards, Gary.

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NARRATOR: Protein denaturation facilitates coagulation and cutting of small vessels. In larger vessels, coaptation is used to facilitate hemostatic transection. As the vessel is gripped, insuring internal walls of the vessel are in contact intima to intima, the blade is activated at Power Level Three for vessels three millimeters or less, on Power Level Two for vessels three millimeters to five millimeters. In Harmonic Ace, tension on tissue is released prior to activation. The surgeon knows the process is complete upon the hemostatic transection of the vessel.

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RANDAL S. WEBER, MD, FACS: Okay. So let's...let's move on here. I'd like to demonstrate this surgery real time. This is a case that I recently performed. This was a sixty-eight year old male with a painless hypomobile mass. It was about two centimeters and it was in the right parotid gland. The seventh nerve was intact in this patient and was no adenopathy. And generally this wouldn't have been a case that would have worried me very much about

the...the nature of this tumor. Again, statistically it's most often benign. But it was hypomobile, so what we decided to do, of course, was get further workup and you can see the CT Scan here. It shows a fairly well circumscribed tumor in the lateral lobe and it was in more of the anterior part of the gland.

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But one thing we...you can see on the...on the coronal CT is that the tumor is abutting the masseter muscle and that's actually something we did encounter at the time of surgery. And that probably explains some of the hypomobility that we found. So what I'd like to do is demonstrate this technique of parotidectomy with the Focus and show you how I perform the surgery.

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GARY L. CLAYMAN, DMD, MD, FACS: How you do it.

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RANDAL S. WEBER, MD, FACS: So, the size of the incisions really depends upon the size of the tumor mass, how far anterior you have to go and whether or not you need to do a neck dissection. So I start the procedure with the electrocautery and I use that to raise the flaps. My flaps are elevated in the subcutaneous plane. I like to leave a little of fat on the flap and a little bit of fat on the gland. There's certainly nothing wrong with doing a subplatysmal flap, provided there's no tumor extending lateral to the parotid fascia.

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The next thing I do is I skeletonize the tragal. Cartilage, again, this is a broad plane of dissection. I raise my posterior flaps slightly.

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GARY L. CLAYMAN, DMD, MD, FACS: Are you going to save the great auric, Randy?

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RANDAL S. WEBER, MD, FACS: Actually, in this case I tried to save it but as I dissected the great auricular nerve, and that's what we're demonstrating here, it was coming in close proximity to the tumor and so I decided it was safer not to save the great auricular nerve. Most of the cases that I perform parotidectomy on are for patients with metastatic skin cancer and so I tend not to save the great auricular nerve in those cases.

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GARY L. CLAYMAN, DMD, MD, FACS: Because you're taking the jugular lymphatics.

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RANDAL S. WEBER, MD, FACS: That's right. So we're dividing the overlying parotid tissue, the great auricular nerve is seen just deep to the Focus.

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GARY L. CLAYMAN, DMD, MD, FACS: And you're protecting that with the insulated portion.

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RANDAL S. WEBER, MD, FACS: That's right. That's very important. Because that portion of the instrument doesn't heat up. The unprotected portion that's the closest...or, away from the underlying sternocleidomastoid can get very warm and so you don't ever want to put that near any nerve structures. The most important part of the initial dissection is to find the digastric, and that's what I do first. There's...there's the posterior belly of the digastric there. And we're using the Focus to divide the overlying tissue, again, to broaden this plane of dissection.

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GARY L. CLAYMAN, DMD, MD, FACS: And, Dr. Weber...Randy, you...you've already opened up the preauricular area here, correct?

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RANDAL S. WEBER, MD, FACS: Yes. All of this tissue is very vascular and it seems, for whatever reason, to get more vascular as you approach the facial nerve. So, spending the time here to get hemostasis is very important. It will make your life easier as you get down in proximity to the facial nerve.

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GARY L. CLAYMAN, DMD, MD, FACS: Do you feel like you can get real clean on the preauricular fascia area there?

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RANDAL S. WEBER, MD, FACS: Yeah, I do. I think, obviously, if the tumor is abutting that or if there's any question of fixation then you get in the subperichondrial plane or even resect part of the ear cartilage as needed. But in this case, of course, the tumor was very far anterior. And you can use the Focus also for dissection, as well as hemostasis.

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GARY L. CLAYMAN, DMD, MD, FACS: Are you using the fast setting here, Randy, or are you using the slow setting?

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RANDAL S. WEBER, MD, FACS: You know, I switch back and forth. As I cut through the parotid tissue, I tend to use the faster setting. When you're cut...coagulating blood vessels I tend to use the slower setting. It just seems intuitively that slower would provide better hemostasis, but that may not always be the case. So we've identified the main trunk of the facial nerve. We're at the very proximal portion of the nerve and now we're dividing the parotid tissue.

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The conventional way of dividing the parotid tissue, of course, is to just take a scalpel and divide it and then you spend the next few minutes with the bipolar cautery obtaining hemostasis. But, what I like about this instrument is I'm cutting through this very vascular tissue it tends to provide pretty good hemostasis as we're coming anteriorly. With the dissection clamp I always divide the parotid and I elevate it away from the facial nerve. Even though the ceramic insulation will protect the nerve from heat, it's just good practice not to get that next to the nerve as you divide this tissue.

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GARY L. CLAYMAN, DMD, MD, FACS: Well, certainly the shiny portion of the Har...of the Focus, you know, that tip is...can be really close to things, so it's nice when you lift it up to hold it way.

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RANDAL S. WEBER, MD, FACS: So now we're at more distally and we're really working on the upper branches of the facial nerve. We haven't even approached the tumor yet.

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GARY L. CLAYMAN, DMD, MD, FACS: Now, are you holding the Focus Randy, or is someone else doing that and you're dissecting?

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RANDAL S. WEBER, MD, FACS: I go back and forth. You've heard about the angle in surgery. I've got the angle. We sometimes tell the resident here, let me take that. I've got the angle. Well, in this case, I think that sometimes it's better if you come from a different orientation as you divide the tissue. So, for instance, here I'm spreading with the instrument and I'm using the Focus to divide the parotid. Other times I'll have the fellow or resident divide the tissue for me.

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GARY L. CLAYMAN, DMD, MD, FACS: I just say I have to see it for a second.

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RANDAL S. WEBER, MD, FACS: Inferiorly now we're dividing the anterior/posterior attachments. And here we're dividing the external jugular vein with the Focus. And so this... this vessel, the external jugular vein here is probably four or five millimeters. I use the slow setting and you can see it's sealed the vessel very nicely.

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GARY L. CLAYMAN, DMD, MD, FACS: You don't go back and retie that at all?

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RANDAL S. WEBER, MD, FACS: No, I don't. So this is a branch of the stylomastoid artery. It's just below the main trunk of the facial nerve. Continuing to dissect the mid-facial branches as we reflect the parotid from superiorly to inferiorly.

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GARY L. CLAYMAN, DMD, MD, FACS: Are you suctioning here Randy, or are you doing anything? Is this producing a...I see that mist coming off, so...so that facial nerve is on top there but you're holding it up?

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RANDAL S. WEBER, MD, FACS: Yes. This patient had some interesting anatomy. Not only did his tumor sort of oppose itself to the masseteric fascia, but the nerve seemed to be in a couple of different planes as we were dissecting it, which is not, of course, very common to see.

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GARY L. CLAYMAN, DMD, MD, FACS: Well, of course, you know, the video tape case is going to be the straightforward one for you.

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RANDAL S. WEBER, MD, FACS: Of course. So now we're just above the tumor and here's where I switch planes to dissect. That's part of the masseteric fascia there that we're dividing. We took a little cuff of muscle around this. Didn't know whether this was a benign or malignant tumor for sure. The needle biopsy suggested benign. But, again, you want to try to obtain a good margin around this and so you do whatever it takes to get the tumor out without violating it.

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GARY L. CLAYMAN, DMD, MD, FACS: So the nerve's totally out now, so you're just sort of really moving now, correct?

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RANDAL S. WEBER, MD, FACS: Right.

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GARY L. CLAYMAN, DMD, MD, FACS: Now when do you switch...I mean, I...I see that, you know, you used the...you know, the Focus mostly, but you use the...the standard, you know, monopolar coagulation for elevating your flaps. Are you going back and forth between the different modalities?

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RANDAL S. WEBER, MD, FACS: No, not...not generally. I will use the bipolar cautery if I have a very tiny area that I want to do a spot coagulation. Say it's right adjacent to the nerve. But, for dividing tissue in particular, where you have a...a large portion to coagulate I use the...I use the Focus. So now we're below the inferior branches of the facial nerve and we're just getting ready to amputate the tail. That's the retromandibular vein there that we divided.

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GARY L. CLAYMAN, DMD, MD, FACS: Randy, a couple of questions have come in that maybe you can answer.

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RANDAL S. WEBER, MD, FACS: Sure.

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GARY L. CLAYMAN, DMD, MD, FACS: One question is, do you find that older patients have a higher risk of facial nerve paralysis than the younger patients?

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RANDAL S. WEBER, MD, FACS: No, I really don't. I think it depends on the tumor, how close it is in proximity to the nerve. And I think it also depends in some patients, maybe they had perititus at some point in their lives and so they have a lot of fibrosis in the gland. The more you have to dissect to manipulate the nerve, the more likely you're going to end up with some facial weakness post-op.

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GARY L. CLAYMAN, DMD, MD, FACS: And are you going to drain this post-op? That was another question that came in.

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RANDAL S. WEBER, MD, FACS: I routinely do. I leave a drain in for usually twenty-four hours and take it out the next morning.

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GARY L. CLAYMAN, DMD, MD, FACS: And, when do you combine a neck dissection for a parotidectomy?

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RANDAL S. WEBER, MD, FACS: I do it for high grade tumors if there's facial paresis present. If there's fixation. If the needle biopsy suggests that this is a malignant process. If I'm going to have to do a free flap for reconstruction.

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GARY L. CLAYMAN, DMD, MD, FACS: So you mean squamous carcinomas...

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RANDAL S. WEBER, MD, FACS: Exactly.

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GARY L. CLAYMAN, DMD, MD, FACS: High grade mucoepidermoid carcinomas.

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RANDAL S. WEBER, MD, FACS: Mucoepidermoid. Right.

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GARY L. CLAYMAN, DMD, MD, FACS: Those likes. Well...and salivary duct cancers, I guess.

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RANDAL S. WEBER, MD, FACS: That's right. So the tumor's been removed. Here's the field and we're verifying that the branches in the facial nerve function at the conclusion of the operation. And you can see in this we've removed the entire superficial lobe. We didn't leave any portion of the...of the parotid behind. Two layer closure.

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GARY L. CLAYMAN, DMD, MD, FACS: Where do you take the drain out, Randy?

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RANDAL S. WEBER, MD, FACS: I take it right posterior to the incision. Just behind the ear. And I try not to lay...leave the...let the drain lie...overlie the facial nerve. So I bring it up just above the digastric and leave it in that location.

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GARY L. CLAYMAN, DMD, MD, FACS: Now there's a little puckering there, Randy. Do you like to do something to fill that in or you're going to accept that?

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RANDAL S. WEBER, MD, FACS: I accept that. I usually don't. I advise patients not to have AlloDerm or any of those sort of materials put in the wound.

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GARY L. CLAYMAN, DMD, MD, FACS: Well, it's a nice result.

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RANDAL S. WEBER, MD, FACS: Thank you. You can see he's got good facial nerve function, which really is indicative of atraumatic dissection and no thermal injury to the nerve.

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GARY L. CLAYMAN, DMD, MD, FACS: Great. Well, can I have this and we can move forward.

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RANDAL S. WEBER, MD, FACS: Thank you.

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GARY L. CLAYMAN, DMD, MD, FACS: No, thank you. So, we're going to move...move on to some of the advances in thyroid surgery and utilizing this type of Harmonic device in order

to use hemostasis. And so thyroid nodules are common. We see them all the time. And, if it's just by palpation, it's a relatively rare finding. Probably by the fourth or fifth decade of life the incidence in the U.S. is probably in the five to ten percent range. And so, if we go back twenty or twenty-five years ago when ultrasound and PET scanning and CT scanning weren't so common, you didn't find them all the time. But now, with routine use of carotid doplars and people getting PET Scans and CT Scans for almost any ailment, or...or sometimes even screening, we're finding the incidence of thyroid nodules as quite common. In fact, probably thirty to forty percent of the population by the hit...by the time they hit their fourth or fifth decade of life already have thyroid nodules of some type.

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RANDAL S. WEBER, MD, FACS: So when you find a...If someone discovers a thyroid nodule on a...incidentally on a CT or a PET Scan, do you work those up? Do those need to be evaluated?

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GARY L. CLAYMAN, DMD, MD, FACS: Yeah, I guess that's the nature of my business. You know, if they...if they have a nodule, I'm going to find out what it is.

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RANDAL S. WEBER, MD, FACS: So keep those scans coming, huh?

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GARY L. CLAYMAN, DMD, MD, FACS: Keep those scans coming.

RANDAL S. WEBER, MD, FACS: Okay.

00:29:48

GARY L. CLAYMAN, DMD, MD, FACS: But most of them are benign.

RANDAL S. WEBER, MD, FACS: Yeah.

00:29:50

GARY L. CLAYMAN, DMD, MD, FACS: And so, you know, just from the get-go, you know, ninety to ninety-five percent of these nodules are benign. Sometimes even the malignance one...one's may be incidental findings in and of itself, and we don't know what their ultimate biologic potential are. But we know that papillary thyroid cancer is the most common of malignancies if they occur. Follicular thyroid cancer is decreasing in incidence. And everything else, medullaries, anaplastics, lymphomas and the like are really very rare malignancies of the thyroid.

00:30:19

And benign is basically the rule. The problem is that needle cytol...fine needle aspiration cytology, which is the gold standard of assessment of the thyroid nodule, the most common neoplasm is a follicular neoplasm and we can't determine whether it's benign or malignant based upon needle biopsy. Now we know if there's colloid or other things present that the likelihood of it being malignant is much lower.

00:30:44

Now, thyroid cancer is actually a...is...is clearly a genetic cancer and even the...the genes involved in the development of many thyroid cancers. The RET proto-oncogene, RET/PTC rearrangement and BRAF mutations are...are...we know the oncogene's involved and mutation's involved in the majority of these cancers.

00:31:05

RANDAL S. WEBER, MD, FACS: I'm sure you know a lot more about that than I do.

00:31:07

GARY L. CLAYMAN, DMD, MD, FACS: I don't know. But, we also know that this is a female predominant disease process. And amongst women in the U.S. it's the seventh most common malignancy today. Fortunately, thyroid cancer is rarely fatal, especially differentiated thyroid cancers. And that's what this slide is showing. The five year survival rates for those that are less than forty-five years of age, nothing is a hundred percent but

approaches a hundred percent. And even above forty-five years of age, if it is confined to the thyroid gland survival is in the high ninety percentile as well. It's only when it escapes and is...is to regional or distant sites that we have problems ultimately controlling disease and potentially even survival in these patients.

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RANDAL S. WEBER, MD, FACS: Before you move on, there was actually a question that came in from our audience. Apart from cancer, what other reasons are there for removing a thyroid gland?

00:32:02

GARY L. CLAYMAN, DMD, MD, FACS: Well, you can remove thyroid glands in order to determine whether there's a cancer. You can remove thyroid gland because of goiterous disease. Sometimes thyroids are removed for the incidental parathyroid abnormality that's intrathyroidal. But generally speaking, thyroidectomy is performed for the risk of thyroid cancer or the inability to determine thyroid cancer. An asymptomatic thyroid nodule that is likely benign need not be operated upon.

00:32:32

So, we're going to present just a patient that showed up in our offices here not that long ago, and we'll just prepare our tape here, but she was a fifty-seven year old attorney from Puerto Rico and she had a three and a half centimeter left thyroid mass. And her needle biopsy performed here suggested a papillary thyroid cancer. Her lateral neck had no evidence of any lymphadenopathy, but I can't...I can't determine the paratracheal lymph nodes at the time because the thyroid can, in fact, shadow over that.

00:33:02

RANDAL S. WEBER, MD, FACS: What do you tell a patient like this? Obviously, this is a person who needs their voice for their profession. You've got a cancer. What sort of risks do you quote them for either voice changes or...or actually having to sacrifice a recurrent nerve in a case like this?

00:33:18

GARY L. CLAYMAN, DMD, MD, FACS: Someone with a functioning true vocal cord, preoperatively with an...with a thyroid mass and a normal functioning larynx, it is quite rare that they will have to have sacrifice of their recurrent laryngeal nerve. So in almost all, not all, but almost all circumstances you can assure anatomic preservation of the nerve. As long as the nerve is anatomically preserved, and I mean all of its arborized branches, it is highly likely to return back to normal function. I tell every patient that they will notice a change in the qualitative singing voice due to changes in strap musculature and so on. So I'm cautious about that. But I'm also very cognizant that the recurring laryngeal paralysis rate, even temporary, should be less than one percent. And permanent paralysis should really only be due to sacrifice of the recurrent laryngeal nerve.

00:34:13

So anyhow, can we go ahead and prepare to roll the tape and roll the tape on this open thyroidectomy? So, this is our surgical team in place. And I do wear loupe magnification. Unlike Dr. Weber, I guess I don't have as good a vision as him, so I wear a three and a half magnification. The incision just needs to be made in order to adequately provide adequate exposure. This is about a three and a half centimeter incision. And I really focus upon the central compartment of the dissection. So, I really don't do a lot of lateral neck elevation of the flaps.

00:34:52

RANDAL S. WEBER, MD, FACS: You know, it's amazing how much smaller the incisions have gotten over time. I know in my training we used to make eight or ten centimeter incisions and now they're routinely, for a typical open case, around four or five centimeters.

00:35:05

GARY L. CLAYMAN, DMD, MD, FACS: Yeah. I think that it's...what happens underneath the incision is so important. So here, we're just...we opened up the medial raphe and basically

we're just taking the strap musculature off of the lateral portion of the thyroid. And so here is a little bit of the sternothyroid muscle, and I'm going to free that up so that we can get good visualization of the superior portion of the thyroid gland and identify the superior laryngeal nerve, which I always like to identify before I take the superior vascular pedicle.  
00:35:43

In open thyroidectomy, I don't do them all the same. I do them based upon the location and the size of the mass. Video assisted is another story, but here I actually allow the neoplasm to determine what's best. Here you'll actually see I'm going to push away the superior laryngeal nerve, free up the superior vascular pedicle there and I'm using the Focus device here to dissect as well as coagulate. So that fascia can just be freed up. That's posterior lateral and the insulated portion is protecting the carotid. So, there you see the small filament as branch of the superior laryngeal nerve. I'm going to protect it with the insulated portion of the Focus and I'm going to start taking down all of the attachments of the superior vascular pedicle.

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RANDAL S. WEBER, MD, FACS: Now are you using this on the low or the high setting when you do that?

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GARY L. CLAYMAN, DMD, MD, FACS: Slow...I actually used to use slow setting for everything. And because I guess I'm less patient now than I used to be, I...I tend to use the slow setting only for major vessels and I use the rapid setting for the majority of my dissection. So, I really free up the entire superior pole here. Again, you want to have that insulation port...portion protecting critical structures. The air is, obviously, very well insulated, so I don't need to worry about the air up above.

00:37:15

RANDAL S. WEBER, MD, FACS: So you're not putting a clip on that stump of the artery or ligature. You're just dividing it with the Focus.

00:37:23

GARY L. CLAYMAN, DMD, MD, FACS: I have major prejudice against clips and so I...I don't use clips in any of my surgery here. And I do use a little bit of blunt dissection there but, no, I use the Focus for all my hemostasis here. So I'm inferior here and that's the...the thyrothymic area.

00:37:40

RANDAL S. WEBER, MD, FACS: Are you looking for parathyroid tissue here, or if you see it you'll...you don't go looking for them if you don't see them in proximity to the gland?

00:37:49

GARY L. CLAYMAN, DMD, MD, FACS: No, I'm...I don't go looking for it. This is basically a near capsular excision of the uninvolved lobe.

00:37:55

RANDAL S. WEBER, MD, FACS: Uninvolved side. I see.

00:37:56

GARY L. CLAYMAN, DMD, MD, FACS: So this is uninvolved and, again, the insulated portion now is down protecting the trachea and the recurrent laryngeal nerve. And I should be on fast setting here, but I'm not. Now I'm...I'm actually holding the Focus there in my hand. And that big thumb over there is counter retracting. Now here you see the...the recurrent laryngeal nerve out the...immediately lateral to where I'm working and so I know that I'm free now. And I'm just going to come through here with a little bit of sharp dissection. The recurrent laryngeal nerve is very distant from me now and I'm just going to take this off of the pretracheal fascia. I'm doing a total thyroidectomy here, so all thyroid tissue is going to be removed, including the isthmus, the pyramidal lobe and any pyramidal reference.

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RANDAL S. WEBER, MD, FACS: So on the uninvolved side, do you pretty much stay on the capsule of the dissection?

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GARY L. CLAYMAN, DMD, MD, FACS: Yeah. I've identified the nerve here. I like to use this peanut. It's quite atraumatic. It allows me to push up the local tissue to make sure there's no paratracheal abnormalities there. That's the---

00:39:01

RANDAL S. WEBER, MD, FACS: Is that the pyramidal lobe you've---

00:39:03

GARY L. CLAYMAN, DMD, MD, FACS: That's the pyramidal lobe that I already brought down there.

00:39:07

RANDAL S. WEBER, MD, FACS: Do you always look for delphian node as well?

00:39:09

GARY L. CLAYMAN, DMD, MD, FACS: I always...in...in fact, I always remove the delphian node whether I identify it or not. So here, again, the strap muscles are just taken down off of the lateral lobe of the thyroid. And I'm a little bit generous there because I know that this is highly suggestive of a papillary thyroid cancer, so I'm taking a little bit of fascia because it was a little bit tenuous on that lateral lobe. And so I want to make sure that I have some margin of safety. Now the carotid artery is deep to me here, Randy, so I'm...I'm actually having the insulated portion protecting that carotid artery.

00:39:47

It's important that...see, because I'm making a small incision, I need to have my assistants retract that skin ad those flaps because otherwise I can cook that bottom portion of the flap. So here I'm going to work on the superior lobe. Again, I'm going to work from a superior to inferior approach.

00:40:04

RANDAL S. WEBER, MD, FACS: You do the...you take down the superior pole before you look for the nerve?

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GARY L. CLAYMAN, DMD, MD, FACS: I take down the superior lobe. Almost routinely before I look for the nerve, unless it's truly just a superior lobe mass.

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RANDAL S. WEBER, MD, FACS: Is that just for mobilization?

00:40:17

GARY L. CLAYMAN, DMD, MD, FACS: Just for mobilization. So here I'm taking down some of the fascia holding in the superior lobe. And there's....there's a lot of superior lobe here. It's going to come up, and so I'm working on this a little while. And, again, the insulated portion is down here. When I worked with Paulo Micolli in Italy and he was using the Ace for all of his open and closed thyroid surgery, when they were originally doing it they had some tracheal malacia because...due to unknown thermal injury to the trachea. So he became very cognizant of the potential risk here.

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Now here I'm just taking down a little bit of strap muscle so I can adequately remove all of the superior pole of that thyroid gland. I do not want to leave that thyroid tissue. And you can see that the...the strap muscles are somewhat tenuous to the gland there, so I'm taking a little bit of margin there just to be cautious.

00:41:19

So these are just sort of the attachment more medially. Again, I switch the instrument. So the instrument is actually more fine with that shiny portion that's to us, but that I need to make sure is always away from critical structures. And you see I have a moist sponge there on the flap, and I use that in order to dissipate the heat of the Focus so that it's not transmitted inadvertently to other tissue.

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RANDAL S. WEBER, MD, FACS: Now I assume you're well above the cricoid here, so that you know the recurrent nerve is down below.

00:41:54

GARY L. CLAYMAN, DMD, MD, FACS: The recurrent nerve is very safe at this...at this juncture. And you see I've just actually touched that heated portion to the gland. I don't always need to do wasted movements; I can just touch that heated portion to the gland right there and it's not going to injure anything, but it's going to dissipate the heat again. So now the superior pole is...is really coming down and as you illustrated, I know that's a safe move, but pretty soon I'm going to have to switch my direction to more inferiorly. Again, this is probably the last move that I can do before the nerve will be coming close to this area. And so now I'm going to switch to a more inferior approach.

00:42:38

RANDAL S. WEBER, MD, FACS: Do you ever divide the straps to mobilize the upper pole, or just those...the more medial part of the sternothyroid muscle?

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GARY L. CLAYMAN, DMD, MD, FACS: I pretty rarely divide strap muscles, even for large goiterous glands. I find that strap muscle division is really helpful when I want to get into the mediastinum. But, otherwise, I really find it not to be very necessary. So here I'm mobilizing even more from the...the already dissected side, coming to the gland and I'm just going to continue to free up the thyroid gland here. Now, I...I have to identify the nerve here, and here the nerve is being identified again. The insulated portion is down towards the nerve and I'm lifting it up just like you said, Randy, making sure that...that I've lifted up the apparatus so that there is no incidental thermal injury to anything.

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RANDAL S. WEBER, MD, FACS: I think that's safer. Even though we know that the ceramic coating does prevent thermal spread, it's probably just good practice not to...not to let that touch the nerve, as you...

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GARY L. CLAYMAN, DMD, MD, FACS: Well, I've done sort of some of my own experiments where I've let my finger, you know, sort of walk through the yellow pages here, just to make sure that it really wasn't getting hot. I don't...never...never believe anyone until know it firsthand. So, being an inherent disbeliever, I like...like to check it out myself. And it...Here is the---

00:44:11

RANDAL S. WEBER, MD, FACS: It didn't melt your glove then.

00:44:13

GARY L. CLAYMAN, DMD, MD, FACS: Didn't melt my glove and my finger is still on. So, here is my recurrent...well, not mine, but I guess the patient's recurrent laryngeal nerve. I guess they like showing a picture of me with my specs on. And as long as I can get the Focus underneath the tissue, I feel comfortable utilizing it. If there's no room to put that insulation portion down, then I switch to a bipolar electrocautery in sharp dissection. So as long as I can get that instrument in, in an atraumatic fashion, I'll use it like that. Now I'd like to use my peanut for a gentle dissection on the nerve. I find that it allows me to displace very, very fine fascial structures.

00:45:00

RANDAL S. WEBER, MD, FACS: That looks like a parathyroid there inferiorly. Was that...was that the gland?

00:45:03

GARY L. CLAYMAN, DMD, MD, FACS: Yeah, that's...that's a parathyroid gland right there. And I've pathologically confirmed it. Left it vascularized and I'm putting it in a Petri dish in some Tissuisol right here. So I don't want it to devascularize, so I'm going to demulsify it right away and make a cellular suspension and prepare for my injection. Once I've

confirmed that there's no evidence of any malignancy in that gland. So, it's finally minced up in Tissuesol. It's getting oxygen from the ambient there and I just go ahead and I inject that with the Tissuesol in the trapezius muscle with an eighteen gauge needle. And, it's quick and it's easy and it's a quite effective way of autotransplanta....

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RANDAL S. WEBER, MD, FACS: Sort of an insurance policy, even though you may have other parathyroid tissue preserved.

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GARY L. CLAYMAN, DMD, MD, FACS: I'd much rather...I'd much rather have it in the patient than out of the patient. So, here my recurrent laryngeal nerve is out. I'm dissecting upon it. Bipolar electrocautery. Sharp. Here you see the recurrent laryngeal nerve nicely out. It always has arborized branches. You need to make sure that you...I don't take advantage of a dominant posterior branch and cut through more medial branches. Once the nerve is safely lateralized and I...and I have the distance that you see here...there you saw the recurrent laryngeal nerve totally out, we can just be done with this and so this is the fat lady preparing to sing. Barry's ligament is being separated right there and out she comes.

00:46:42

RANDAL S. WEBER, MD, FACS: So you don't do any lymph node dissection or even look for lymph nodes until you're removed the thyroid gland.

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GARY L. CLAYMAN, DMD, MD, FACS: If I identify the lymph nodes at the time, meaning they pop out at me, I will do the elective dissection. But now I inspect...the nerve is out, the paratracheal pathology, if present, will be there and so a general dissection along that nerve will identify paratracheal pathology. In the absence of pathology, I irrigate the wound. I do not drain these any more. I put some puffed Avitine in there and I...I don't know if it is of any utility, but I put it in there because bad habits are probably hard to break. So I just...I dissect along the nerve just to make sure there's no paratracheal pathology.

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RANDAL S. WEBER, MD, FACS: And if you don't see any lymph nodes, then you don't do a prophylactic dissection then?

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GARY L. CLAYMAN, DMD, MD, FACS: I do...I do not do prophylactic dissections for the absence of pathology. And now I close.

00:47:46

RANDAL S. WEBER, MD, FACS: Very nice.

00:47:48

GARY L. CLAYMAN, DMD, MD, FACS: So, that's the open thyroidectomy and...so this patient had a multifocal papillary thyroid carcinoma. Probably occurs in about fifteen percent of patients with papillary thyroid cancer. And she did have some strap muscular involvement. And you saw sort of the sticky nature there and that's why I was a little bit generous in obtaining a margin there. And the margins were free. And the parathyroid gland was confirmed at the time of surgery and autotransplanted. She had normal true vocal cord and superior laryngeal nerve function. Her parathyroid function was actually normal at the time of surgery. A parathyroid... rapid PTH assay was twenty-seven and so she has an insurance policy if she should ever recur. And her...there was no surgical drain placed. She was treated as an overnight stay; although, this can be done with a rapid PTH as an outpatient as well. But she was from Puerto Rico and so I kept her overnight.

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RANDAL S. WEBER, MD, FACS: So if you send the...a total thyroidectomy home the same day, do you observe them for a certain number of hours or...

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GARY L. CLAYMAN, DMD, MD, FACS: About three to four hours before they go home. Her stimulated thyroglobulin after surgery, prior to her radioactive iodine was 1.4. I was very pleased with the result. And she had little to no uptake; less than one percent of her radioactive iodine uptake in her thyroid bed, which also is a very good sign.

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So now we're going to sort of change our tracks here and you generously sent me to Italy and I spent a couple of months there.

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RANDAL S. WEBER, MD, FACS: and you didn't take me with you.

00:49:14

GARY L. CLAYMAN, DMD, MD, FACS: Didn't take you with me. I sent you a picture of me standing in front of the Tower of Pisa. But I...I learned from one of the father's of...father's of video assisted surgery how to do a video assisted thyroidectomy and brought it back here to Houston. And, I've adapted that technique to my own technique; just like any surgery technique you sort of make it your own. And so I'm going to give a case and show you an example of this. This is sort of stretching the limits a little bit. It's a two and a half centimeter thyroid mass. Anything much bigger than this, you can't get the rigid scope past it in order to see the critical structures. Now the benefit of video assisted surgery is the magnification is beautiful. So, actually, my visualization is better than my loupes. And, you know, fifteen to seventeen fold magnification when I'm looking at recurring and superior laryngeal nerves, so I really love the technique. It's limitations are volume of the thyroid and the size of the thyroid mass. For a two and a half centimeter thyroid mass I usually do about a 2.7 to 3 centimeter incision.

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RANDAL S. WEBER, MD, FACS: So there's some patients you'd tell them they're not candidates for this surgery.

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GARY L. CLAYMAN, DMD, MD, FACS: If they have...if they have a known malignancy with lymph nodes, I will not do the surgery video assisted. If they have lymph nodes found at the time of video assisted surgery, I will transition them to an open surgery. Large goiters, gland or just a diffusely enlarged gland, no, I cannot do it.

00:50:40

But I adapted Paulo's technique to my own. The Micolli technique is basically video assisted identification of the superior laryngeal nerve, recurrent laryngeal nerve and any changes to an open approach with a delivery. And what I did is I do a totally video assisted. The benefit where you retract the strap muscles laterally, the thyroid medially, identify the critical structures and you do it in a two piece approach. You remove the thyroid and the isthmus on the side of the mass, and if you're doing a total you do the contralateral side after you've delivered the one side.

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So...I'm sorry. Let's go...Go ahead to the tape now and let's run the tape. So, we sort of showed the slides there, but here's the incision. This is...again, this is about a three...two and a half centimeter to a three centimeter incision, made at about the level of the tracheotomy incision. I tend to mark the skin with just a suture, just so I can make it in a cosmetic area. It's just elevated in the level of the strap muscles immediately to the level of...of the superior portion of the...the thyroid notch and inferiorly to the sternal notch.

Again, you don't need to do a lot of extraneous lateral dissection.

00:52:03

The benefit of video assisted surgery is it's basically the same every time you do it. So once you've identified your team, you do it the same every time. Here---

00:52:13

RANDAL S. WEBER, MD, FACS: How many assistants do you have for this?

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GARY L. CLAYMAN, DMD, MD, FACS: I usually have two. I do have a self-retaining retractor for the scope that I can do with just a single assistant, but I'm...I like to have two assistants. The real problem in a teaching institution is I'm constantly training people, so once I have a trained team they leave me and I'm re-teaching it every time. So, the fluid nature of the surgery can get lost every time that you're retraining a team. So sometimes it's better to have a well trained person working with you than two untrained people.

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Again, the strap muscles are removed from the lateral portion of the gland. And, we have to create the space here. So these retractors are being used to create the space. They're creating the space by retracting the strap muscles laterally and the thyroid medially. And so here you see, at the top of the screen, that that retractor is actually pulling the thyroid medially and it's creating a space while we're retracting the strap muscles laterally.

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The real benefit here is when we...when we switch to the video assisted surgery we're going to see with a magnification that I just can't produce with my loupes. So, as soon as the strap muscles are off, I'm going to switch to my magnified surgery. So here I'm just freeing up---

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RANDAL S. WEBER, MD, FACS: So is this the...is this the camera that's held external to the one that this...Now you're...now, so you're in the wound with the scope.

00:53:43

GARY L. CLAYMAN, DMD, MD, FACS: Now...now I'm in the wound with my scope. So I had freed up just a little bit of the strap musculature there. The superior laryngeal nerve is always identified. And I'm just using these general retractors. And these are just general retractors. I can use them on the superior vascular pedicle, which is lateral on the screen there.

00:54:07

RANDAL S. WEBER, MD, FACS: That's amazing magnification.

00:54:10

GARY L. CLAYMAN, DMD, MD, FACS: And it's the same surgery; it's just a smaller incision with better visualization. And that's what I argue. You can...you can see that...you can use the Focus there. The superior laryngeal nerve is down now and so I'm going to protect it with the insulated portion. You see the shiny portion there. Now it does produce this sort of bubbling, and that is hot. And I'm just going to work piecemeal until I get to the vessel there. Now, you can use, you know, suction devices or suction irrigation devices. Here's I'm going to just pull that away at the---

00:54:53

RANDAL S. WEBER, MD, FACS: That's the upper pole there?

00:54:54

GARY L. CLAYMAN, DMD, MD, FACS: That's the upper pole that I'm going through. And the heated portion is actually touching the gland there. There you see this paralaryngeal nerve, that inferior branch of it there. And so I'm going to...I always free up the superior pole first. This dissection device just sort of creates the plane. And it...that little hole is a suction device and so it actually pulls tissue that is sucked on it, which helps dissect even at a more rapid pace. So the superior pole is just continuing to be worked down in just a step-wise fashion.

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Now, again, it's important to realize, because you can't see it here, there's...you see this paralaryngeal nerve there. It's sort of twisted around there in front of you. But you see it entering the superior laryngeal inlet. So now I'm going to switch. This paralaryngeal nerve

is down and I'm going to switch more inferiorly and lateral on the gland. Again, dissection is used with that blunt device there. And, the...just the beautiful magnification you can...you can identify parathyroids, recurrent laryngeal nerve, which I'm coming upon right now. There's the carotid immediately lateral to me. And you see it's pulsations.

00:56:19

And I'm again...Now the insulated portion, you can see the white portion there is down protecting the carotid and the recurrent laryngeal nerve. And I just do a little slight twist there just to make sure that the heated portion can't inadvertently touch something. I want to get below that fascia there, because my superior parathyroid gland is going to be immediately lateral and superior to that, in it's normal anatomical location, if it's going to be there. And here you see more...there's the middle thyroid vein right there that I'm going to take down.

00:57:01

RANDAL S. WEBER, MD, FACS: What was that dissecting instrument that you were using? Is that a fine Mosquito?

00:57:06

GARY L. CLAYMAN, DMD, MD, FACS: Yes. It's just a fine Halstead Mosquito.

00:57:09

RANDAL S. WEBER, MD, FACS: I see. But you have the scope in there so you can see the tip of it very well.

GARY L. CLAYMAN, DMD, MD, FACS: Yeah.

00:57:14

RANDAL S. WEBER, MD, FACS: And what's that, the inferior thyroid artery branches?

00:57:17

GARY L. CLAYMAN, DMD, MD, FACS: That's...that's the inferior thyroid vessel, that's correct.

RANDAL S. WEBER, MD, FACS: Okay.

00:57:21

GARY L. CLAYMAN, DMD, MD, FACS: And you actually saw I had actually pushed up the recurrent laryngeal nerve, and I just pushed it back down. I had to separate it from that vessel, so it was immediately deep to that vessel. Now I'm going to...I use the Peanut here once again in order to do blunt dissection. There you saw the inferior thyroid artery again, sort of working it's way in there.

00:57:42

RANDAL S. WEBER, MD, FACS: Parathyroid at the tip of the...

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GARY L. CLAYMAN, DMD, MD, FACS: Yep. Right there.

RANDAL S. WEBER, MD, FACS: Okay.

00:57:47

GARY L. CLAYMAN, DMD, MD, FACS: There you see the recurrent laryngeal nerve. And you see that that's...You know, the recurrent laryngeal nerve is taking up about, you know, thirty, forty percent of my video monitor here. So, if you're using a large monitor, you have incredible visualization. Now, again, I'm going to come in the pretracheal fascia here. I'm going to take...This is...for a total thyroidectomy this is a two piece procedure, so I'm going to go on the contralateral side of the isthmus. I will remove the entire isthmus and the pyramidal lobe in continuity with that one thyroid lobe. Now---

00:58:22

RANDAL S. WEBER, MD, FACS: Then you just burn right through the thyroid tissue. You don't have to---

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GARY L. CLAYMAN, DMD, MD, FACS: I just come right through the thyroid tissue. This just walks right through it. It's totally hemostatic. There is no oozing; there is no anything that goes through there. And it doesn't require suture ligation; it does not require anything. Now, I like to use the cautery on the pretracheal fascia there to just elevate it up. pyramidal lobe is taken down there. The nerve is already totally out, so I'm just really freeing this up here.

00:59:04

So I'm just taking this out now. The nerve has been totally dissected laterally. That's Barry's ligament. And this is coming out now. Again, the insulated portion is down. The recurrent laryngeal nerve is free. And there you see the recurrent laryngeal nerve. You see the vascular pedicle and the superior parathyroid gland right there. And I'm just going to dissect right in here. The Harmonic goes right on that superior vascular...the...I'm sorry, that's the inferior thyroid artery. The recurrent laryngeal nerve is being pulled up by me, because I'm lifting it up. And you see that that is just hemostatic...staying that right there.

01:00:15

So I generally, again, will put my Peanut down on the recurrent laryngeal nerve to gently dissect that away. And it funny sometimes how you do that surgery you just keep finding these vessels. And this was one of those patients you were talking about, your parotidectomy, that was just a difficult one. This...this lady had the most exuberant vascular supply in the area of her inlet than I...than you probably see in the majority of cases. But, things also do look big when you're looking at them with this scope.

01:00:52

RANDAL S. WEBER, MD, FACS: So what do you...What part of this procedure are you doing now?

01:00:55

GARY L. CLAYMAN, DMD, MD, FACS: This is just finishing up right over the nerve.

RANDAL S. WEBER, MD, FACS: Uh huh.

01:01:02

GARY L. CLAYMAN, DMD, MD, FACS: So I'm just going to put the Harmonic right there. So everything to the right of your screen there is staying.

01:01:13

RANDAL S. WEBER, MD, FACS: Okay.

01:01:14

GARY L. CLAYMAN, DMD, MD, FACS: Okay? So now we're just taking it off here...right off the pretracheal fascia. Again, multiple vessels. And then that's it.

01:01:52

RANDAL S. WEBER, MD, FACS: Okay.

01:01:52

GARY L. CLAYMAN, DMD, MD, FACS: So, it's been delivered. I irrigate out. Do not drain. And, again, put my Avitine in there.

01:02:00

RANDAL S. WEBER, MD, FACS: That's the magic hemostatic agent you put in there.

01:02:02

GARY L. CLAYMAN, DMD, MD, FACS: The magic hemostatic stuff. I close with [just a?] vicryl, putting the strap muscle together and then close the skin. So, this was a lot of fun, Randy. I just want to let the audience know that these...if they have any questions there's an information tab on their...on their screen that they can just click on and they can get copies of these slides if they need information from the slides. So I want to wish you and everyone in the audience a happy holiday season.

01:02:36

RANDAL S. WEBER, MD, FACS: The same goes for me, Gary. Thanks.

01:02:38

GARY L. CLAYMAN, DMD, MD, FACS: Thank you, Randy.

01:02:45

RANDAL S. WEBER, MD, FACS: I guess we're done.

01:02:46

GARY L. CLAYMAN, DMD, MD, FACS: I guess we're done.

01:02:47

RANDAL S. WEBER, MD, FACS: I didn't hear any applause though.

01:02:50

GARY L. CLAYMAN, DMD, MD, FACS: It's coming from the audience. Okay, do we need...

01:02:54

RANDAL S. WEBER, MD, FACS: Are we still on or are we off?

01:02:59

NARRATOR: This has been an expert discussion of advances in technology and enhanced techniques when performing parotidectomy and thyroidectomy surgeries from the University of Texas M.D. Anderson Cancer Center in Houston, Texas. ORLive makes it easy for you to learn more. Just click on the "Request Information" button on your webcast screen and open the door to informed medical care. The program is sponsored by Ethicon Endo-Surgery, Incorporated.

01:03:47

[END OF WEBCAST.]