Surgical Removal of Thyroid Gland

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Hello, I'm Diane Magnum, and welcome to OR-Live. Today we are coming to you live via the web from the beautiful, state-of-the-art Homestead Hospital, part of the Baptist Health South Group, where in just a few moments from now General Surgeon Dr. George Tershakovec will be performing a thyroidectomy, in this case, the removal of an enlarged thyroid from this female patient.

As you can see, we are already in the OR which means you will see every moment of this procedure as it takes place over the course of the next hour or so. We also, during that time period, invite you to send in your questions via the web, any thyroid-related questions, and our doctor will offer to answer as many of those questions as he can get to before the hour is up. Let's begin now by introducing our doctor. Dr. T, can we ask you to come over for just a moment before you get started? Thank you for letting us engage your OR today.

Thank you very much, and thank you all for joining us.

Well before we hear more about the patient, I wonder if you could take just a moment or two to use this diagram and explain a little bit about the anatomy involved in this procedure and how the thyroid functions in bodies.

Sure. This picture here shows a normal thyroid gland and its relationship to the trachea and to the cartilage and the muscles surrounding it. We're going to have some greater explanations once we get in.

All right. The patient's thyroid is much larger than this, hence the reason for the surgery today.

That is correct.

All right. Let me just go to our second diagram so you could explain very briefly what's going to take place during the course of the surgery.

This shows some of the structures and their relationships with the thyroid; in particular, the nerves to the vocal cords, the trachea, the carotid artery, and the jugular veins. Some of this we'll be able to see actually as we do our dissection and explain more.

And, doctor, what can you tell us about your patient, something about her history and the symptoms she was experiencing?

Sure, this was a 65-year-old patient who's been following by a local endocrinologist for a goiter. Recently there has been substantial growth in one of the nodules, going from 2.8 to 4.1 centimeters. Because of the change the feeling was the patient should go ahead and consider surgery. Also, with the enlargement of that nodule, she's had some symptoms of difficulty swallowing.

All right. And we'll talk more about your patient in just a moment, but I'm going to let you get started and move over to your surgical team. And if you'd be so kind as to introduce who's joining you today and tell us what each person's function is in the operating room.
Absolutely. Thank you.

Thank you. Good luck with the surgery. So joining you today will be who, doctor?

We have Jesse Varkey, who is going to be one of our circulating nurses. We have Shannon Tingle, who is also one of our circulating nurses. Betsy Okuna, the surgical scrub tech. Dr. Octavio Avila Zamora, my assistant. Dr. Samir Kulkarni, chief of anesthesia, who will also be explaining some of the technical applications here, and Gene Bashera who is our anesthesia tech.

And, doctor, I know there was very specific setup to prep this patient. Can you explain what’s involved in that setup and how it is so specific to thyroid surgery?

Absolutely. We use a modified beach chair position for the patient. The patient is in a partially sitting up position, this allows for diminished blood in the field by allowing the venous return to be by gravity so that we have less bleeding in the neck. We also have placed a gel roll underneath the patient’s shoulders, and that is for the purpose of stretching the neck and pushing the thyroid more anteriorly.

And why is it so important for the patient to be symmetrically on the table?

It allows for the incision to be more symmetrical, that way when it heals it’s a more aesthetically pleasing incision.

All right, doctor, we’re going to go ahead and let you get started here. And as you being the surgery if you would just explain to us exactly what it is you’re doing.

Okay. The patient has already been prepped and we have already put some markings to suggest where I want to put the incisions. We’re going to go ahead and get started.

And how do you decide the size of the incision for each patient?

It has to do with the size of the neck and the size of gland, and what I feel I’m going to need for the exposure.

And we can actually see that there is what looks like a large protrusion in her neck that isn’t there with someone who doesn’t have an enlarged thyroid; correct?

That is correct. We’ve already cut the skin here. Now we’re just going through the superficial fat layers.

And what is your concern as you begin the surgery here, is bleeding usually a concern with this kind of surgery?

There can be some, but, clearly, you want to control the bleeding so that you can visualize all the important anatomic structures.

And people at home may be hearing a monitor going off. Can you explain what that monitor is and why it’s so important to the surgery?

We’ll be using a nerve integrity monitor, and that monitor will be checking that the nerves to the vocal cords are not in harm’s way as we go through surgery.

All right. We’re looking at a monitor now and it shows what you’re reading from. It’s called a “NIM” for short. And as we’re looking at this monitor, can you tell us why we’re seeing so many of the lines flashing?

At this point in time, what’s happening is that that monitor is picking up the electrical interference from the cautery I’m using.
I see. So it’s nothing to be alarmed about.

That is correct.

And can you explain how the NIM is actually inserted into the tracheal tube before the surgery?

Sure. That is part of the geologist's important role in this procedure, and I think our patient's doing quite well. I’m going to ask Dr. Kulkarni to show you the NIM and explain a little bit about it.

That would be great. Doctor, take over.

Why don’t we just bring it over there.

Great.

He’s going to just walk over to where he can get on camera here. Doctor, go ahead and tell us how this is used and the difference between the two tracheal tubes.

Am I on?

Yes, you’re on. Go ahead.

Okay. Again, I’m Dr. Kulkarni. And what I’m going to show you is the difference between a normal endotracheal tube, which is something like this. It’s a size seven endotracheal tube that we put in a routine patient undergoing general endotracheal anesthesia. Now specific for this surgery, thyroid surgery, parathyroid surgery, endocrine surgery in general, what we use is a specialized tube, as you can see, the blue part with these electrodes running down.

The important part of this type of surgery is to monitor vocal cord integrity. Vocal cords are supplied by the recurrent pharyngeal nerve. So, as you can see, there are red and blue electrodes running down the side of this endotracheal tube, and the electrodes end right at the level where the vocal cords are going to be. And once we position the tube, then the electrodes are attached to the nerve integrity monitor to where when Dr. Tershakovec is dissecting he’s able to know when he’s in the vicinity of the nerve and he can stimulate the vessel to be sure that he’s not injuring or transecting the recurrent laryngeal nerve. And that’s why we use this particular tube for this type of surgery, and it's critical where this technology has evolved over the last several years.

All right, doctor, thank you. And, Dr. T, that same monitor is used post-surgery, is it not, to make sure the vocal cords are working properly?

At the end of the procedure we will retest the nerves; that’s correct.

All right, and I’m going to ask them to take the overhead shot one more time so you can tell us where you are right now in the procedure.

Sure. At this juncture what we've done is we've raised the superior flap of the incision by going through the skin and then through the superficial muscle called the platysma. We've then utilized a series of Alice clamps that are going to actually going to help us do most of the retraction. This will allow us to provide adequate exposure without having to use a lot of extra retractor in the field.

All right. And I know that you based your incision size on your need to get into the thyroid itself, but the placement of the incision, is that done in a way so that it will minimize the scar post-surgery?

That is correct.
And how do you go about doing that? Do you try to use the natural folds in the neck?

We try to look at the symmetry of the natural creases in the neck, and then try to determine which one is going to fit best shape-wise and lengthwise. We usually go about the finger breadth above the clavicle as sort of our starting point, and we use the midline or the sternal notch, which would be here where my finger is.

I see.

And that would be the middle layer, and we’ll make a little mark there. And then the clavicles are here, so we go about a finger breadth above on both sides.

And, Dr. T, what causes an enlarged thyroid to begin with?

A goiter is a phenomenon that is caused sometimes by diet, and other times by environment.

And what are the symptoms, besides difficulty swallowing, that would let people know they might be having a problem with their thyroid?

Well outside of a goiter there are other conditions, there are hyper and hypo metabolic states that patients will become symptomatic. They can have fatigue, intolerances to hot and cold, they can feel sluggish, they can be hyperactive, the two opposite extremes of thyroid disease. Usually goiters are asymptomatic, except for the enlargement of the gland. And what we’re doing here is we’re raising the inferior flap, again, underneath the platysma, and we’re going down to the level of the clavicular heads.

Now why was this patient a particularly good candidate for this kind of surgery?

The size of the gland and the enlargement of the one nodule over a short period of time.

And I assume that’s why you decided that now was the time that this surgery needed to take place for this patient. Had she not chosen surgery, were there other ways to treat this?

No.

No. And would it have continued to have grown in size over the course of her lifetime?

That is correct.

Okay.

There’s always a concern that when you have nodules that are changing is that they could also be malignant, and so we’re trying to prevent her from having a nodule that is cancerous.

I see. However, is this the same procedure that would take place had she been given a diagnosis of a cancerous thyroid?

Correct.

Although, the procedure would have involved more extensive work; is that not correct? She would have had perhaps lymph nodes removed?

Absolutely.

Okay.
All right. Here, what we’ve done is we’ve identified the midline of the strap muscles here and here, the middle, and we’re dissecting through them so that we can actually see the gland coming into view here.

Can you tell us why this particular – the way you performed is, in your mind, the most effective, more effective than perhaps laparoscopic or even robotic surgery for thyroid removal.

Well I think the first consideration is the length of time and how many surgeons it takes to do it robotically. At this juncture we do a very meticulous thyroidectomy in a relatively short period of time with one surgeon, one assistant, with good clinical results. The incisions are plastic closure. The patients recover very nicely. The robotic surgeries are requiring up to three surgeons.

Oh, my goodness.

And the length of time for the surgery is also a lot longer. There also is a learning curve and there have been a lot of unexpected complications reported from the robotic surgeries.

I see. Can you speak to why the thyroid is so important when it comes to hormone production in the body and how it can affect your overall health if it’s failing to work properly?

It regulates your metabolism, and so people who have hypo-functioning thyroids can actually have problems with mentation, with fatigue, with normal function. They gain weight and really feel pretty miserable. Patients who are hyper will have the opposite. What we’re doing now is we’re mobilizing some of the connective tissue and some of the muscle from this enlarged gland, and it’s a substantial size gland. I’m gently feeling the extent of the gland. It wraps posteriorly to the spine.

Wow.

I’m going to try to deliver the gland here gently.

Uh-huh. And for people at home who are watching, this procedure actually takes place – it’s a twofold procedure. You do the first part on one side of the patient, and the second part you actually move to the other side of the patient. Can you explain why?

Correct. The way I was trained and the way I have learned to see the best is to stand opposite to the lobe that I’m removing. So here we mobilized the right lobe, and we have it just about up completely.

So for people at home, let me remind you, if you just tuned in, you are watching a live surgery as it takes place here at Homestead Hospital. General Surgeon Dr. George Tershakovec and his team are removing an enlarged thyroid from their female patient, she’s 65 years old, and she presented with problems swallowing over a period of time. Once again, we will invite you at home as you’re watching the surgery take place, please click on the “Ask” icon on your screen. You can send in your questions live via the web to our surgeon and he will begin answering them for you.

By the way, if your issue is something other than an enlarged thyroid, but your question has any connection to the thyroid gland, Dr. T will be happy to address it during the course of the broadcast. We do have one question that’s already come in, Dr. T. “When operating in this area near the vocal cords, what kinds of nerve damage are you risking and how do you avoid damaging those nerves?”

Well one is the identification of the nerve and, obviously, the preservation. Hoarseness, if it’s a unilateral or one-sided injury, and hoarseness and inability to breathe if it’s on both sides. Now, Diane, let me just point out something. We’ve identified, one of the parathyroid glands, we’ve got actually a beautiful shot of it here. I’m putting the clamp on it. It has a slight orange coloration to it.

Yes.

And we’re going to see if we can leave it on a vascular pedicle; if not, we’re going to transplant it.
Now what does that mean in laymen’s terms, doctor?

Well, it has a blood vessel that supplies its nutrition.

Yes.

And we’ll see if we can get it dissected off. It’s a little bit high, so it may not come off completely, and if it doesn’t, we’ll just track into the muscle.

I see.

And because of its size and its hypervasculartiy it will actually reattach itself with the muscle and work perfectly.

No kidding. Wow. And what does the parathyroid gland do in the body? What is its function?

It regulates calcium metabolism.

I see. Now, is there some reason that we are hearing about so many thyroid problems, particularly in women and particularly in perimenopausal and postmenopausal women?

All related to hormones.

It is all related to hormones. And how do you go about identifying that it is the thyroid that’s the problem and perhaps these symptoms aren’t telling us about some other problem, you know, a heart problem or a diabetic problem? How do you identify that it is in fact the thyroid that is the issue?

Basically, it’s done through blood tests and a good physical examination. When you go for your physical, having the neck palpated, and if something is felt, and ultrasound is the cheapest, easiest test to confirm whether there’s anatomic abnormality. And a blood test will tell you whether the thyroid is functioning or not.

I see. And what are you doing right now, doctor?

We’re just trying to get that parathyroid off, and what I’m feeling here posteriorly with my finger is the trachea, which is the windpipe.

Right.

And we can see the esophagus down here where my finger is. So I’m just trying to get that separated. And we’ve got that parathyroid off.

Okay.

Now we’re going to go up to the superior pole.

Which is? What is that, doctor?

Which is the upper attachment of the thyroid.

Okay.

Where the superior thyroidal vessels come in.

Now are there some cases when you don’t have to remove the entire thyroid?
Absolutely. If you have a simple unilateral cyst or a benign adenoma, or sometimes even just a unilateral goiter, you can just do a hemi- or partial removal of the thyroid.

Now, once the thyroid is removed, how does the body continue to function without it?

By taking a medication called levothyroxine, or Synthroid for the commercial name.

Right. And is that a medication the patient will then need to be on for the rest of her life?

Correct, one pill a day.

And are there any side effects – long-term side effects to being on the medication for that long?

No, because it’s basically replacing the normal hormone that the thyroid was manufacturing.

I see. And if only part of the thyroid is removed, is the medication still needed long-term?

Usually not.

Usually not. Now if there is cancer found in the thyroid, obviously the entire gland would be removed; correct?

That is correct, and in some instances the patient will go on to receive radioactive iodine treatment.

And what does that do?

In certain types of cancers if there is concern that there may be some spread, it will destroy the other living cells that are too small to remove surgically that are not seen.

So that takes the place of what would be traditional chemotherapy or radiation?

That is correct.

Okay. So that is generally not part of the long-term prognosis for someone who has thyroid surgery?

Correct. The survival statistics for thyroid cancers, the most common, such as papillary, is extraordinarily marvelous. Surgery cures the majority of those patients, and some who need to get the radioactive iodine it’s sort of the extra insurance that they will continue to live a normal life.

Okay. So if somebody is at home and say they’ve had a sudden weight gain or they’re having trouble swallowing or they’re feeling heart palpitations, the first thing they should do is go to their doctor and ask for the blood test that would check the thyroid?

Well, clearly, the doctor would need to decide if the symptoms are consistent with thyroid disease and to do the blood test, absolutely. What we’ve done here is we’ve mobilized the superior pole. An enlarged gland like this, identifying the nerve oftentimes can’t be done until you’ve actually mobilized that superior pole.

I see.

And I can already feel the nerve, so we’re going to go ahead and ask for the nerve stimulator.

All right. And if you could explain to us what you’re trying to do and how it’s going to show up on the monitor.
Sure. I’m putting an electric current across it, stimulating it, and you’ll notice that we get a little blip on the monitor. You hear the little tap, tap, tap sound.

Yes.

That’s telling us that that is the nerve. The cord is actually hitting the sensor on the tube that Dr. Kulkarni demonstrated.

Now when you and I talked on the phone, you made the point of saying that the NIM is a tool but it still takes the surgeon’s skills to make sure the nerves are not damaged.

Correct. Yes, I had identified the nerve without a need of the monitor telling me it was definitely – I already knew it was the nerve, I could feel it. It has the consistency of a banjo string. You can see here I’m sort of twanging it.

Yes. Now does all of this contribute to why the voice is hoarse post-surgery?

If the nerve is stretched there will be a transient or temporary hoarseness. If you actually cut it or if you burn it, then that can be permanent.

And how long does it normally last, that hoarseness in the voice?

If it’s a temporary hoarseness, four to six weeks.

Four to six weeks, okay. That’s good to know, because I think a lot of people would think, well, you know, you’d be sore for a few days after surgery. You would expect your vocal cords to be back up to speed maybe a week later. So they should not be concerned if even a month post-surgery they’re still experiencing some hoarseness in their voice.

Correct.

Okay.

All right. That we’re doing here pushing the gland away from the nerve, and here you can see – nerve stimulator – there’s the nerve there, and it’s coursing up into the insertion into the larynx.

I see. So are you now done with that side, almost done with that side?

Almost, we’ve got a little more critical work to do here.

Okay. I’d like to go back to the question of why women are experiencing this more than men. It does, in fact, have something to do with hormonal changes during menopause?

That, and also not even just menopause, but there are certain thyroiditis’ that are more common in women. There is one that happens postpartum. Graves’ disease and Hashimoto’s, both autoimmune phenomenon, more common in women as well.

So if you have a diagnosis of Hashimoto’s Disease you would be on the lookout for any changes concerning your thyroid?

Correct.

Now, the fact that it’s more predominant in women does not mean that men can’t suffer from this, too.

Absolutely.
Can you give us some idea of what the differences between male and female patients, 25%, 75%, what would the spread be?

I would think probably 70/30.

Okay. And, once again, men would present with the same kinds of symptoms.

Same. Absolutely, same exactly symptoms.

Okay. Once again, I’d like to remind our audience at home, you are looking live at a shot from an OR inside Homestead Hospital where General Surgeon Dr. George Tershakovec is about halfway through with a thyroidectomy; that is, the surgical removal of an enlarged thyroid from his 65-year-old female patient. And we will, again, ask our viewers at home to please send in your questions via the web, Dr. T will be very happy to answer those questions if we get them in before the end of the broadcast. Dr. T, what are you doing now?

We are now removing the isthmus, or the middle portion of the thyroid, off of the trachea. The trachea is coming into view here, this white structure. I’ll show it to you here in a moment a little bit more clearly.

Once again, that white material is what, doctor?

This is the trachea.

That is the trachea, okay.

Right here. Let’s see if I can get you a little bit better view here.

And, once again, just for visual reference for our audience at home, people cannot see this but your patient is actually almost on, like, a jellyroll so that her neck is extended up towards you, which is why you get so easily to all of these parts of the anatomy.

Correct. This is the trachea here, and this is actually one of the tracheal rings.

And what is the purpose of the tracheal ring? What does it do?

The tracheal rings actually provide support to the trachea so that it does not collapse.

Oh, okay.

All right, so now we’ve completed the one side.

Great.

And you can see here we’ve got a nice dry field. You can see here the parathyroid that we preserved and its pedicle.

Yeah.

You see the strap muscle here. The carotid artery is just underneath here.

Wow, you’re very close to that.

The trachea, the esophagus, and, again, the nerve, and we’ll test the nerve one last time before we flip to the other side. There we go. Okay.

So that’s music to your ears when you hear that beep.
Absolutely.

And when you say you have a dry field, you’re telling us that very little blood loss is taking place during the course of the surgery.

That is correct. At this point in time we’re going to switch sides and take the other side out.

All right. Now is the second half of the procedure as long as the first, or has a lot of the work been done already?

It’s about the same. The other lobe may be a little bit smaller.

Uh-huh. While you’re making your way through this I wonder if we could talk about some of the other causes in more detail for having to have your thyroid removed. You talked about an overactive thyroid producing too much hormone, and the symptoms of that, once again, would be?

Hyperactivity, jitteriness, excessive sweating, excessive bowel movements, palpitations. Now usually, typically, that is treated with radioactive iodine, ablatting the gland. Those patients that are refractory to the treatment or who may be allergic to the medications will require surgery. That surgery is a little bit technically more challenging because the gland, because it’s hyperactive, is going to be bloody, and also the patient can actually go into (INAUDIBLE). When you squeeze it, too much of the hormone may actually go into the bloodstream, so Dr. Kulkarni, in that case, would need to be monitoring the heart and may have to intervene with special medications to slow the rate down.

And what about an underactive thyroid, the symptoms would be what?

Fatigue, feeling cold, having no energy, listless.

And is surgery usually the protocol for both or do you try a series of medications first to see if you can regulate the thyroid?

Medication primary, and then surgery if there’s some anatomic abnormalities. All right, Diane, here we’ve got a great shot of a carotid artery right here.

Oh, my goodness, look at that. Wow.

And that’s a –

Who knew – I had no idea that artery was so large.

Absolutely, and it’s a good landmark because anything that is anterior to the carotid I know is safe, meaning it’s (INAUDIBLE). The nerve is going to lie at a plane deep to the carotid.

I see.

So that’s already given me a very nice landmark.

Perfect.

Here, inferiorly I’ve hooked my finger back of the trachea.

Yes.

This lobe, again, I’m going to gently mobilize that.
Now, are you separating the tissues while you do that?

Very gently, yes.

Yes, okay.

Sort of like (INAUDIBLE).

I see.

It's knowing the texture of the tissue, what you can separate with your finger. I'm sort of going in a gently rubbing motion.

Yes.

I'm also feeling my anatomy.

Right. Well, not to be too simplistic on this, but any of us who have cooked a chicken before would maybe have had the same sensation as we tried to separate the meat from the bone or the skin from the meat.

Correct.

Okay. Dr. T, can you talk about the risks involved with this surgery?

Well the biggest risk (INAUDIBLE) because if you have bleeding and you close the neck and the bleeding persists, that will cause the trachea to collapse, and, unfortunately, you can succumb to that in the recovery room or in the immediate postoperative period; that’s number one. Number two is obviously injury to the vocal cords, to the nerves. If it’s only one nerve then it’s (INAUDIBLE) and there’s treatment for that, but if it’s both nerves you can’t speak, you can’t (INAUDIBLE), that’s a real (INAUDIBLE) all the parathyroids, then you will have permanent hypoparathyroidism, which will require (INAUDIBLE) again. Here we’re mobilizing again. And here we have a great demonstration (INAUDIBLE). Now, because this gland is very rich in iodine, when I cauterize it there’s actually a slight aroma of iodine.

No kidding? And what happens if that iodine escapes into the body?

Oh, it’s fine. I mean we – the iodine (INAUDIBLE) created in the thyroid and is used to produce (INAUDIBLE).

I see. And if you could just talk us through where you are right now and what you’re doing.

Again, the superior pole, we’re just ligating the superior artery.

Now when you say “ligating,” that means?

We’re going to be tying it off and sealing it. Okay.

I see. Once again, you are watching General Surgeon Dr. George Tershakovec and his team as he performs a thyroidectomy. We are coming to you live at the Homestead Hospital, part of the Baptist Health South Group. The patient on the table is a 65-year-old woman who presented with an enlarged thyroid, and this would be protocol for heading off any possibility of thyroid cancer down the road. We’re about three-quarters of the way through the procedure now. And, Dr. T, what happens once the thyroid is removed, does it go into pathology?
Absolutely. It will take our pathologist, depending on how many nodules there are, a day or two to study it. If there’s any question about a (INAUDIBLE) a few extra days. In the extreme situation where we can’t agree on a diagnosis, we may actually ask for external consultation by nationally-recognized pathologist to corroborate what our pathologists feel we’re dealing with.

Is it often that an enlarged thyroid presents with cancerous cells?

It may, yes.

Okay. And, again, I believe we have the nerve. Let’s see.

So, once again, you’re using the NIM. Could you walk us through that?

Correct. Again, I felt the nerve, I saw the nerve, and then I validated or verified that that’s the nerve. And I think we can see a parathyroid hiding here. We’ll see if we can expose that here in a second.

And for anybody who joined us late, if you would explain, once again, what the beeping is and what that NIM monitor is allowing you to know.

Sure. That we’ve correctly identified (INAUDIBLE) vocal cords and we can keep our dissection a safe distance away from that nerve.

How long does this procedure typically take, doctor?

It depends on the surgeon.

All right. Here’s the better question. How long does it take you to perform this procedure typically?

An hour for me is a very long time.

It is.

This one’s taking a little bit slower only because (INAUDIBLE) surgery, but also trying to listen and answer your questions.

Sure. And we appreciate you doing that for us. So once the thyroid is out and once the patient is sewn up, how long is the recovery from this? How long does she spend in the hospital?

Sure, the patient will go to the recovery room for an hour, typically. And if all things are checking out she’ll go to a room. Tomorrow morning she’ll be enjoying a breakfast sitting up in bed.

Really, eating regular foods the very next day?

Regular food. She’ll take a regular shower and she’ll be able to go home tomorrow.

Wow. Now, what is typically the pain level post-surgery?

Everyone’s tolerance to pain is different, but I will tell you that many of my patients will take only one or two –

Okay. Okay. Doctor, we’re going to take just a moment while you’re doing this surgery, we’re going to switch out your microphone because we’re having some interference. So as you’re doing this, I’ll remind people at home, you are watching a live surgery at Homestead Hospital, a thyroidectomy, in this case, the removal of an enlarged thyroid from a 65-year-old patient. This is happening live on the web and we do encourage you to send in your questions. Dr. T will answer your questions as you send them in.
If you've never seen a webcast before, this is actually the 14th webcast we've done now with Baptist Hospital. This is all in an effort to allay any fears prior to surgery, and also to answer your questions should you be facing any of the number of surgeries we've covered here live on the web. This is your opportunity to see it take place right before your eyes so that we can increase your comfort level and certainly your knowledge before you have to undergo a similar procedure. And we keep all of these surgeries, these webcasts, up on OR-Live and on our website at BAPTISTHEALTH.NET so that if you would like to go back and see any of the back surgeries, the thyroid surgery, we’ve done a lung surgery, please visit our website. It is filled with very valuable information. Dr. T, we’ve fixed your microphone and we’d like you now to tell us what you’re doing at the moment.

Sure, we’re trying to get the gland separated from the nerve. And we’re going to demonstrate the nerve once again. That’s a beautiful demonstration of the nerve both here with the clamp showing it anatomically, but also with the monitor.

All right. So, once again, when the monitor blips, that is music to your ears. It tells you there’s been no damage caused to the vocal cords.

Correct.

And this will be used again at the end of the surgery just to reinforce that the vocal cords are working properly.

That is correct. Now we had started a question about the recovery.

Yes.

After the patient goes home tomorrow, she’ll be seen in the office in a week, we’ll go over some techniques to improve the healing of the incision; massage and heat and application of some topicals like cocoa butter or vitamin E or aloe, and then the patient will return to their endocrinologist in about 30 days to check the level of hormone to be certain that what I place them on is adequate. We’ll discuss the final pathology, and then we’ll reinforce that the patient should avoid excessive sun exposure for one year to the wound so that, should it become sunburned, it unfortunately may become hyper-pigmented or remain dark, so we try to get them to avoid that.

So that’s just to reduce the visual effect of the scar.

That is correct.

Now I’m assuming that there is no drain, then, in the incision tonight, or is there?

There will be no drain; correct.

Wow. And I’m amazed that you’re telling me that even with all of this activity on her – so close to her vocal cords that eating tomorrow is not going to be painful.

Not at all.

That’s really amazing. Are there any restrictions placed on this patient long term or even short term after surgery in terms of exercise or exertion?

Not at all. We’ll recommend, for the first couple of days, not to drive only because they’re not safe because they can’t turn their neck completely around.

Right.
So we’ll just suggest that they refrain from that. And typically when they’re seen in the office in a week, they’re ready to go back to total normal activities.

That’s really incredible. Can you speak to why the neck – before we even get to that, you’re very close to separating this gland entirely, aren’t you?

That is correct. We’re about to deliver it. We’re going to hand it off here to the back table, then I’m going to show it to you all and discuss a little bit about that. Let’s just check here. Okay.

And you’re checking for what now?

Oh, just looking for bleeding, checking my nerve. I see the nerve beautifully running there. We can go ahead and test it again. Okay, it’s intact. The esophagus is here. I’m running my finger along the esophagus. Here’s the trachea. The thyroid cartilage up in through here.

Yes.

The cricothyroid membrane.

Yes.

The soft spot here, that’s where you would do a corrective thyroidotomy in the field, if you will, if you became upon an accident scene and someone had difficulty breathing from facial trauma. There’s the trachea.

I see. That would be the area. And those stitches will dissolve over time, doctor, or they’re permanent?

No, these are permanent, these are silk, and they will stay there.

Uh-huh. And what you’re separating there, those are the two vocal cords?

No, the vocal cords are inside, okay. They’re inside the trachea at this level here. The nerve actually comes in here and will actually go through this membrane.

I see.

And, again, a dry field, we’ve got no bleeding.

None at all.

Now we’re going to put this little fuzzy material here, and what it does is that as she starts waking up she may have a little bit of oozing. This will help control that. And now we’re going to put a fibrin glue in, and this actually helps in the healing.

And how does that work, doctor?

It will actually cause the muscles to seal. Taking a big gland out, like we did, creates a lot of dead space, and the body wants to fill that with fluid, so we’re going to suggest that the body not do that.

Okay. And we will be talking about the gland you removed in just a minute when you’re finished with this. Can you talk about why the neck is so stiff post-surgery. Is it because there’s been so much activity and there’s swelling or is it because the incision is so tight and it needs some time to loosen up?

Well, it’s not that the incision is tight, but you use your neck for breathing, for moving, for just about everything that you do, and so every movement you’re sort of re-traumatizing the surgical site, if you will. If you had a fractured arm, we’d put it in a cast and keep you from moving it. All right, so at this juncture
I’ve concluded the removal and I’m going to turn over the case to my assistant who’s going to start the closure, and, again, he’s going to reconstruct the strap muscles here in the midline and then the platysma, and then close the wound, and we’ll show you that.

All right.

In the meantime, let me bring the gland over to you.

Sure. We’re just going to walk around here and let Dr. T come in on this side. All right. So this is an enlarged thyroid.

This is a very enlarged thyroid. If you were to take an average-sized walnut and open it and remove the meat from it, that would be the size of each of the lobes.

Okay, but so that would be about this big.

So we’re talking about something about like that.

Yes, oh, my goodness. So if you could hold that up again and just tilt it towards the camera, very enlarged.

Correct. And the posterior side, this is where the trachea was.

Right.

And if you think about this laying on the trachea, the opportunity for compression, the opportunity for difficulty in swallowing, considering the esophagus runs posteriorly, one can see that this can and will cause symptoms, as well as aesthetically. You can put this in your neck and think about it, in a slender neck like yours it would be quite obvious that there would be a bulge.

And it was quite obvious with your patient.

Correct.

When she came in, her neck was very swollen.

Correct.

Now you can understand why it would be so uncomfortable. And what does something like that weight, it looks like it would add quite a bit of weight to your trachea?

Not too much.

Not too much.

Not too much.

All right, we’re going to let you put that down because I know it does have to go to pathology. And I will continue to ask you questions coming in from the web. And people at home, thank you for sending them in. We have a question from someone who said, “I have heard the term "thyroid storm." What does that mean?”

Thyroid storm is when you have a hyperactive thyroid gland, and that can be a critical situation that it needs immediate medications to try to block the heart, and then that patient would be prepared for radioactive iodine ablation. In the rarest of instances, one would have to do an emergency thyroidectomy if they were refractory to the medications.
All right. And when you say “refractory to the medication” do you mean they were having negative –

The medication wasn’t working.

It wasn’t working. Okay. We also have a question from someone who wanted to know if once the thyroid is removed if the patient would then gain weight?

No, as long as the replacement hormone is adequate, then their metabolism will be exactly what it was beforehand or maybe even better.

Right.

And so therefore there should not be any weight gain.

So, Dr. T, how long have you been performing this procedure and can you put a number on how many of these you’ve done over the years?

I did a few in training, which would have been from 1980 to 1985. And the first general surgeon who I joined in practice, Dr. Norman Kenyon, had a tremendous love for thyroid surgery, so I became his student and he was a great mentor.