

**LAPAROSCOPIC CHOLECYSTECTOMY
BON SECOURS ST. FRANCIS HEALTH SYSTEM
GREENVILLE, SOUTH CAROLINA
July 16, 2007**

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ANNOUNCER: Welcome to Bon Secours St. Francis Health System in Greenville, South Carolina. Over the next hour you'll see a laparoscopic cholecystectomy. The function of the gallbladder is to store bile, which helps digest food. Gallstones usually form in the gallbladder because of excessive cholesterol in bile. When they cause pain or other problems, treatment is usually needed. During the procedure, surgeons make a tiny incision at the navel. You'll then see how they use laparoscopic technology to dissect and remove the gallbladder and stones. OR-Live 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. Now let's go live to the operating room.

00:01:01

CAROL GOLDSMITH: Hello, I'm Carol Goldsmith with WYFF News 4 in Greenville, South Carolina, along with Dr. Thom Mann, who's the moderator. We're actually in the hallway outside that operating room, and the surgeon you see in the operating room this evening is Dr. Mike Towler. He will be doing the laparoscopic gallbladder surgery this evening. We want to remind you that you can ask questions as you are observing the surgery. All you've got to do is click MDirectAccess button right there on the front page. That will give you a field in which to type in a question, you can send it to us, and we will try to get to that question within the next hour. So please feel free to send in your question. Dr. Mann, talk to us a little bit about this surgery. It's very common, isn't it?

00:01:38

THOMAS C. MANN, JR, MD, FACS: It is very common. It's one of the most common surgeries that is done in America today. Approximately 500,000 are done in the United States. Here at St. Francis we average about 1,200 gallbladder removals a year.

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CAROL GOLDSMITH: That's really surprising. Why is it so common?

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THOMAS C. MANN, JR, MD, FACS: Well, there's a number of factors. It's, I think, many things. It's our diet. There are risk factors: obesity. Certainly diet is a consideration, high-fat meals here in the south, and that all increases the number of gallbladders that we do.

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CAROL GOLDSMITH: So with that in mind, I guess there are areas of the world where it's a much less common surgery.

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THOMAS C. MANN, JR, MD, FACS: Most definitely.

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CAROL GOLDSMITH: Let's go into the operating room if we can, and Dr. Towler has already started to procedure to some degree. There is some preparation work that needs to be done. Dr. Towler, what have you been doing since you got into the operating room?

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MICHAEL A. TOWLER, MD, FACS: Basically I spent the first five minutes cutting down just below the umbilicus, or belly button, and inserting this trocar that you see here. There's clear tubing that pumps carbon dioxide gas into the abdomen to make a working space and a valve that we can regulate it with here.

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CAROL GOLDSMITH: Why do you use carbon dioxide?

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MICHAEL A. TOWLER, MD, FACS: It gets absorbed easily and it's -- it was one of the first gases that they used. It's been shown to be safe, and it's been a traditional method.

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CAROL GOLDSMITH: So you need that to be able to have a clear field in which to see the gallbladder.

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MICHAEL A. TOWLER, MD, FACS: Yeah. As you can see, when I pass this scope -- this is a 10-millimeter scope -- through the trocar, you can look into the abdomen. We see the liver there, we see the left lobe of the liver there in front of the stomach. We can see the diaphragm up there, the heart beating, the right diaphragm there, and then you can look down in the pelvis. We see the stump of the appendix there with the secum. You can see the uterus. This particular patient has had two C-sections in the past with some scar tissue from that C-sections on top of the uterus. Ovary, you don't get a great look at, but it's down in there. And basically, when we first put the scope in we look around and see what we see and make sure there's nothing terribly out of the ordinary, and everything here looks very normal. The only thing that really looks pretty particularly bad is that piece. That's all you see of the gallbladder at this point, and it looks very diseased. It's got some injection into the liver, some scar tissue. And we're going to put some more instruments in right now so that we can see a little better. You're seeing my finger push through the abdominal wall there, and you can see that visualized through the scope. And I'm finding a good place to put this instrument. I want to have good access to the gallbladder. And hold the camera there. I'm going to take a scalpel and just make a small incision. I prefer to make all three of my incisions right at the very beginning so I don't have to pick up the knife too many times.

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CAROL GOLDSMITH: This might be a silly question, but do you worry about the carbon dioxide leaking once you make that incision?

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MICHAEL A. TOWLER, MD, FACS: Well, there's a diaphragm in this -- well, the incision is just in the skin. We haven't penetrated all the way through, so if we did have a full thickness penetration, we actually would be leaking air. The instruments that we pass through these incisions are trocars. I've got one in my right hand right now. And when these go in, they have a diaphragm that allows gas to get in but not get out. Instruments can pass through them and it keeps the pressure sustained in the abdominal cavity. And this is me just directly forcing the trocar through the abdominal wall, and you can see it entering there. We're going to put a smaller trocar just above the gallbladder right about there, same thing, basically just blunt force just pushing it right through the abdominal wall. And then the last trocar over here to the side.

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THOMAS C. MANN, JR, MD, FACS: I want to say, Mike, that most of the time the decisions on placement of these trocars are made on the body habitus of the patient and exactly where the gallbladder is located, so.

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MICHAEL A. TOWLER, MD, FACS: Exactly. If your trocars aren't in a very good shape, you're going to be in trouble for the case. That gallbladder looks a little better than it looked at first glance. We just saw a little bit of it -- about this much -- at the very beginning before we

went live, and it looked pretty bad. Then it kind of contracted or involuted on itself. That looks better there. This particular patient had been in the emergency room over Memorial Day with a lot of pain and had an ultrasound that showed stones in the gallbladder and a study that showed poor emptying of the gallbladder. Now we're getting a look at the gallbladder here, which is very decompressed. Make it a little harder to get it out. Hold it just like that. We're pulling it up with that trocar there to keep it suspended. I'm trying to get a little better focus here. Good.

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THOMAS C. MANN, JR, MD, FACS: And this gallbladder is located directly under the right lobe of the liver and actually attached to the right lobe of the liver, and you have to dissect it out, and one of the most important things about this operation is the identification of the anatomy, and Mike will be showing that pretty soon. The -- one of the things about this area in the human body is the anatomy is extremely variable, so you have to be careful about what structures that you cut and you need to identify them and be sure of that before you do so. And right now he's just opening up a little covering that's over the structures that will allow him to better manipulate the structures and dissect them free so he can identify the cystic duct and cystic artery as they leave the gallbladder. We saw earlier when he made the incision in the belly button when the gallbladder surgery had first started, we utilized a needle only and stuck it through the belly button. And then -- and placed the CO2 gas in that way. But we have now more evolved into making an incision and entering the abdominal cavity directly in order to have less of a problem with injuries to other structures. Many people have had other surgery, and when you have other surgery, as you saw earlier with this uterus that is adherent to the anterior abdominal wall, and if you just stuck a needle through this, you may injure a bowel or some other structure.

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CAROL GOLDSMITH: Now, this is a very common operation in the United States. Half a million of these [inaudible.]

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THOMAS C. MANN, JR, MD, FACS: Now, Mike, right now why don't you tell them what you're doing here.

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MICHAEL A. TOWLER, MD, FACS: I'm freeing up a bunch of scar tissue around the gallbladder, trying to get some good exposure. Most gallbladders are a little more distended than this, and it makes it a little harder to discern the anatomy, but we're going real careful. This is a small cautery device that basically keeps the surgery fairly bloodless.

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THOMAS C. MANN, JR, MD, FACS: There are a couple of different ways you can do this. Mike first used the cautery here, as you can see. And this takes care of small blood vessels that will bleed if you just cut them. And typically we don't have a lot of bleeding in this type of surgery. I prefer to use what we call a Harmonic scalpel, which is an instrument that coagulates, or stops the bleeding, by a very fast vibration of the instrument. But it's truly surgeon's preference. But there's not typically a lot of blood loss in this operation. You certainly can lose some, and when you do, if you're not used to looking at an operation through a scope, it looks like there's a fair amount more blood than there really is.

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CAROL GOLDSMITH: Now, I understand that some of the very earliest laparoscopic surgeries were done on the gallbladder. Is it because it is so easily accessible?

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THOMAS C. MANN, JR, MD, FACS: I think -- I'm not sure that that was the only reason. Certainly it was part of it, but it was one of the very first surgeries done laparoscopically, and since then it is the way that we would like to take the gallbladder out. The other conventional method involved making a fairly large incision with a couple days in the hospital, and it was debilitating for the patient. These procedures now are done primarily as

an outpatient. The pain is still there, but doing it laparoscopically makes it much less. People in the office still call this surgery laser surgery, although there are no lasers involved. But it's very well tolerated.

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CAROL GOLDSMITH: This seems to be the most painstaking part of the procedure.

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MICHAEL A. TOWLER, MD, FACS: Definitely.

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CAROL GOLDSMITH: Sort of the teasing apart.

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THOMAS C. MANN, JR, MD, FACS: This is the, I would say, probably the -- one of the more important parts of this procedure. And what Dr. Towler is doing right now is dissecting out the cystic duct, which is the drainage of the gallbladder. The gallbladder holds bile. Bile is manufactured by the liver. And the function of bile is to help us digest fat.

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CAROL GOLDSMITH: It sort of emulsifies it, doesn't it?

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THOMAS C. MANN, JR, MD, FACS: It does. And the gallbladder is -- can be looked at as kind of like an extra gas can. And it is a storage facility for the bowel, and when we eat fatty, greasy foods, our small bowel will pick up on the fat load and actually sends a messenger to the gallbladder to start contracting to send more bile into the bowel to help digest that fat. And that's where the problems come with gallbladder disease. You can have a gallbladder that does not work well, as in this case. And we calculate that by what we call an ejection fraction. And normally an ejection fraction of what we would call normal would be 35% or greater, and that's the amount of bile that is actually emptied out of the gallbladder, and that's a radiopharmaceutical study that's done in radiology. And the other, of course, are gallstones that are formed within the gallbladder and actually block the exit for the bile to drain, and therefore when the gallbladder starts contracting, the bile cannot drain, and therefore you have pressure, and this is what causes you pain.

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CAROL GOLDSMITH: Now, Dr. Towler, I see you moving the tissue back and forth and checking each side. What exactly are you looking for at this point?

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MICHAEL A. TOWLER, MD, FACS: I just want to see very clear anatomy, and you take any angle you can get. The camera's going in through one incision, basically, and so we can look at this. The gallbladder essentially is this structure right here, and it's draining itself through this pipe here, which is the cystic duct. And you get to look at it from this side and this side, and those are about your two only views. And we want to make sure that there's no accessory ducts coming in in this area. We want to clean all this off. That's how you get into trouble is by not getting all this area cleaned off and seeing the anatomy very clearly before you divide that duct and make sure that there's nothing else, because a small vein or blood vessel here could have a small artery attached to it. And I'm trying to dissect this out -- come in a little closer with the camera -- by just getting the connective tissue off of these structures. And then you get a little better look at that blood vessel right there. Probably we'll be clipping that in a second, although it's so small sometimes we just cauterize through it. The main artery is right in here.

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CAROL GOLDSMITH: We've been soliciting some questions from viewers. We have one here: How long does this surgery take? I would guess it depends on the individual patient, huh?

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THOMAS C. MANN, JR, MD, FACS: It does. It depends on the anatomy, the gallbladder. We have -- people have very acute gallbladders, gangrenous gallbladders. In that scenario you would have a lot of other organs attached to the gallbladder that you have to dissect free. I

would say that the normal time is between 30 minutes and an hour and 15 minutes or so. They can go as long as two hours or if a gallbladder is easily removed with the anatomy right in front of you, you can do one in 20 minutes. So it does very.

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CAROL GOLDSMITH: Dr. Towler, did you have a pretty good idea of how this patient's gallbladder looked before you went in?

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MICHAEL A. TOWLER, MD, FACS: No, you never know. You can always get surprised. So I was a little bit worried given her studies beforehand that this would not be very approachable laparoscopically. Typically when a gallbladder's emptying function, as recorded in a nuclear medicine study -- that's where they're recorded -- when the emptying function is zero, that usually means you're in for a more difficult operation. But this isn't too bad.

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CAROL GOLDSMITH: Another question here: With the size of the gallbladder being relatively small, how much larger would the incision be for an open procedure? Those older gallbladder incisions were pretty big, weren't they?

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THOMAS C. MANN, JR, MD, FACS: They were big. They used to make them quite large. Certainly we have better instruments. The incisions have dropped significantly. But the answer to that question depends on the size of the patient, the location of the gallbladder, and how bad the gallbladder is. And -- but it would probably be, I would say, the incision in the umbilicus would be no more than an inch and the incision to get a gallbladder out would be underneath the rib cage would be probably anywhere from 10 to 15 inches.

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CAROL GOLDSMITH: Now that's a clip that does what/?

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THOMAS C. MANN, JR, MD, FACS: That is a clip that -- that is a small vessel that he has clipped on either side, and that secures it so it will not bleed.

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CAROL GOLDSMITH: But that's not a permanent clip.

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THOMAS C. MANN, JR, MD, FACS: It is a permanent clip.

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CAROL GOLDSMITH: It is? Okay.

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THOMAS C. MANN, JR, MD, FACS: They're made out of titanium and they will be there forever. The -- another question I think we have, the recovery time for an open incision versus a laparoscopic incision. Pretty different. Open incision is we divide muscle, which is much more debilitating and makes it a lot harder for the patient to get up and move around, therefore it slows their recovery down significantly. The laparoscopic is, of course, small incisions, divide no muscle, and a lot easier on the patient, as in they go home the same day.

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CAROL GOLDSMITH: Of course, you know, what we're seeing is filling the screen, but how big actually is the gallbladder? Is it as big as your thumb? Is it bigger than --?

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THOMAS C. MANN, JR, MD, FACS: It can be as big as your thumb all the way up to the size of a small -- I guess I don't know how to describe it -- a small squash.

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CAROL GOLDSMITH: Wow.

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THOMAS C. MANN, JR, MD, FACS: Fairly significant size, big, dilated gallbladders. Gallstones vary significantly in size. Some can be the size of a golf ball or bigger. Others are multiple and small. Some of them are actually quite attractive, multifaceted, different colors, but most of them are yellowish and gold.

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CAROL GOLDSMITH: And what are they made out of?

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THOMAS C. MANN, JR, MD, FACS: Most of them -- 80% of gallstones in this area are from cholesterol, cholesterol stones. 20% are pigment stones. Those are bilirubin mostly made up of -- mostly seen in people who have some blood disorders that you will see those.

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CAROL GOLDSMITH: Dr. Towler, is this the big --

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MICHAEL A. TOWLER, MD, FACS: Yep. This is the main part of the surgery, getting this clipped. Put two clips on the patient's side to help reduce the risk of leakage.

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THOMAS C. MANN, JR, MD, FACS: Now that's the cystic duct, and the cystic duct travels down into what we call the common duct, which --

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MICHAEL A. TOWLER, MD, FACS: You can see when I cut across that, the fluid in there is kind of turbid or purulent, kind of milky. It doesn't look very healthy. Healthy fluid would be kind of clear green water consistency fluid. We've got one more big vessel up there to take care of.

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CAROL GOLDSMITH: Now, does this patient have stones or is this an inflamed gallbladder?

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MICHAEL A. TOWLER, MD, FACS: It's both. She has stones, inflammation, and poor emptying function.

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CAROL GOLDSMITH: So she knew she had a problem with her gallbladder.

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MICHAEL A. TOWLER, MD, FACS: Yes. She was having a lot of pain. About every month she'd have a severe upset of pain in her right upper quadrant and it would shoot to her back. Like I said, she even went into the emergency room on one occasion before she got referred to the surgeons.

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CAROL GOLDSMITH: Now, this particular patient, I guess folks have an idea in mind of who would be your typical gallbladder patient, but the last couple of people I've seen who have had this type of surgery have been very thin and probably, you know, watched their diet and might not be who you would think would have this kind of problem. Does that just speak to the fact that this can actually happen to anybody, having a gallbladder issue?

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MICHAEL A. TOWLER, MD, FACS: Absolutely.

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THOMAS C. MANN, JR, MD, FACS: It certainly can.

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MICHAEL A. TOWLER, MD, FACS: We've done this surgery on teenagers, 80-year-olds, people of all weight. It's a fairly random event. It does happen more often in women, but.

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CAROL GOLDSMITH: Is there a hereditary component to it?

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MICHAEL A. TOWLER, MD, FACS: We don't believe so.

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THOMAS C. MANN, JR, MD, FACS: Some people suggest there may be, but I think it's just the frequency of it happening that we many times see multiple people in the same family who've got to have their gallbladder removed. And just because the other thing is to talk about, just because you have gallstones, that you're found to have gallstones, does not mean that you have to have your gallbladder removed. And we see a lot of people in our office to workup referred from primary care physicians that find gallstones and are really unsure of whether they need to come out or not. But in general, for the most part now if you are asymptomatic and have gallstones, we leave them alone.

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CAROL GOLDSMITH: Is there a chance they can go away on their own?

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THOMAS C. MANN, JR, MD, FACS: No.

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CAROL GOLDSMITH: No. Once they're there, they're there?

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THOMAS C. MANN, JR, MD, FACS: Once they're there, they're there, and there's nothing that the patient can do to prevent that. There are some medications they can take that will dissolve stones, but they're extremely expensive and the stones will come back.

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CAROL GOLDSMITH: All right, so we saw some more clipping here.

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MICHAEL A. TOWLER, MD, FACS: That was the cystic artery I just clipped, which is the main artery that feeds the gallbladder. This particular patient had a little bit of a bifurcation.

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CAROL GOLDSMITH: Which means?

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MICHAEL A. TOWLER, MD, FACS: It branched. And I clipped it below the bifurcation to avoid having to put extra clips in.

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CAROL GOLDSMITH: Is it normal to have diarrhea after surgery? That's another question that's been sent in.

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MICHAEL A. TOWLER, MD, FACS: Yeah, that's pretty common. It's not usually a long-term problem. Very rarely people have long-term issues with it. It -- I've done about 1,000. I've had one patient who had a real -- a real problem with it. It would be right after having meals, he would have episodes of diarrhea. And he used to fly in airplanes quite a bit and was troubled by the fact that he couldn't eat the meals they were serving. It can be controlled with medicines, but that is a reported problem long-term with the gallbladder being removed.

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CAROL GOLDSMITH: Well, while we're jumping ahead, once you have your gallbladder removed, what happens to the bile that you need to help digest fat? Or you just eat a low-fat diet?

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THOMAS C. MANN, JR, MD, FACS: Well, what you saw Dr. Towler doing just there was dividing the cystic duct. The cystic duct leads into the common bowel duct, and that is the main drainage system from the liver into the intestine. When you take the gallbladder off of there, you still have a main conduit for bile to reach the small bowel from the liver. So it is not a problem. You still have bile to help you digest your fat. It should not cause you any long-term problems later on in your life.

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CAROL GOLDSMITH: So what Dr. Towler said earlier about the gallbladder being sort of an extra gas can, you kind of lost your storage tank basically when you have your gallbladder taken out.

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THOMAS C. MANN, JR, MD, FACS: That's it, exactly it. And many people are glad to see it go.

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CAROL GOLDSMITH: If a patient has this done at an early age, will they have complications later in life?

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THOMAS C. MANN, JR, MD, FACS: No, they won't. Like I said, we still have a conduit, they still have the bowel, and they will do fine.

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CAROL GOLDSMITH: We are getting a number of questions in. We want to remind folks that if you have a question you'd like to ask our surgeons today, you can click MDirectAccess button right there on the front page and type in your question and we'll get to it as soon as we can.

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THOMAS C. MANN, JR, MD, FACS: Mike, here's another question for you. Do you routinely do an intraoperative cholangiogram during the procedure or only in a dilated biliary tree, and this is from a physician.

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CAROL GOLDSMITH: Yeah, I was hoping you'd ask that question. There's a lot of foreign words in that.

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MICHAEL A. TOWLER, MD, FACS: Yeah, that's a little controversial. I definitely do not do a routine cholangiogram. A cholangiogram is where you squirt dye in that cystic duct and take pictures before you divide it. And the people that like to do that procedure argue that they find things they wouldn't have otherwise known about, like stones trapped way downstream in the main drainpipe of the liver. And the people that argue it's not necessary say that if you look at the incidence of stones that they find in the common bile duct which would lead the patient to further procedures and compare that with the incidence of patients that come back later and actually require that same procedure who did not have a cholangiogram, there's a big disparity in the numbers, and so sometimes the cholangiograms are helpful, you might find anatomy that you didn't know otherwise, but in my opinion they're more expensive, they take longer, and it involves putting a clip on the cystic duct and taking it off later and potentially risking tearing the cystic duct, leading to leakage, and I just don't find it necessary.

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CAROL GOLDSMITH: So there's more separation of tissue here. What exactly are you doing right at this moment?

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MICHAEL A. TOWLER, MD, FACS: I'm basically just finishing getting the gallbladder off of the attachments to the liver. This is pretty avascular: no major blood vessels back here. But it's fairly thick, enflamed, and we're going to divide all this and the gallbladder will be free at that point. Almost got it.

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CAROL GOLDSMITH: One question I had wanted to ask both of you is why was the navel chosen as the site to pull this out?

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THOMAS C. MANN, JR, MD, FACS: Well, I think one reason. It's a good -- it's an area where you can hide an incision, and it is the bigger incision. This is where we pull the gallbladder

removed from the body. And many times you can make an incision in the navel and when you close it you will not be able to see it once it heals.

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CAROL GOLDSMITH: It looks like the gallbladder is nearly free.

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MICHAEL A. TOWLER, MD, FACS: Exactly.

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THOMAS C. MANN, JR, MD, FACS: It is. He's just finishing taking it off the top of the liver now. And then you'll either remove it as it or you can put it in a small bag and withdraw it through the -- through the belly button to remove the gallbladder.

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CAROL GOLDSMITH: Now, the advantage of putting it in the bag: in case it bursts or leaks?

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THOMAS C. MANN, JR, MD, FACS: In case it leaks. Sometimes when you're taking the gallbladder out, Dr. Towler did a beautiful job on that one, but some of them are extremely thin-walled and when you grab them and manipulate them, they tear with spillage of bile into the bowel and cavity. So on those or if they have stones, you can have some spillages of stones in the abdominal cavity. With those we like to put a bag, and here you'll see the bag that he's putting in right here. And we put those in. This one you could just as well have pulled it out through the navel without placing it in a bag, but it prevents carrying bacteria and further leakage of stones and bile doing it this way.

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MICHAEL A. TOWLER, MD, FACS: We're just about to pull it out. And I always shine the camera down there to take a look, make sure there's nothing else that I'm going to be pulling out with the bag. You get a great view. There's nothing attached around it.

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CAROL GOLDSMITH: What would be the -- what would happen if it did leak? Would you have to do some sort of cleanup or would the body take care of that itself or?

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THOMAS C. MANN, JR, MD, FACS: You would -- we have an irrigation instrument. It's a small, long wand. And basically, we would just irrigate the abdomen and wash it until the liquid was clear and then go and try to pick up all stones that we could see. It's not a disaster that that happens, you just try not to let it happen.

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CAROL GOLDSMITH: It's not like a situation like having an appendix burst where you'd have to worry about peritonitis?

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THOMAS C. MANN, JR, MD, FACS: No, it is not.

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MICHAEL A. TOWLER, MD, FACS: Carol, this is something that I really am a big fan of is injecting this long-acting numbing medicine into each incision, and this is the key. About 30% to 40% of our patients, they come back to the office say they didn't even fill their pain prescription. And you can see I'm putting the needle almost in the abdominal cavity. You can see the needle just starting to hit the peritoneum. That's where all the nerve endings are. When people say you had peritonitis, they mean irritation of that lining. And I'm going to be a wheel or a big bolus of fluid right there. The nerve endings run out laterally or from that trocar down the wall to the spine, and if you hit them hard there, the pain is minimal after this surgery.

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CAROL GOLDSMITH: Why is abdominal surgery always so painful? Is it just that it's the core of the body, you've got a lot of --

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THOMAS C. MANN, JR, MD, FACS: Well, I think many times, I mean, if it is -- what you said is correct. I mean, it involves sitting up, moving, walking, the strength layer of your muscles to help you get up, to help control your posture when you're sitting down, turning over in the bed, and et cetera, and that's why it's so painful, much more than an extremity or something that you can isolate. And it's very hard to isolate your abdomen.

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CAROL GOLDSMITH: So the bubbles we're seeing is the numbing medicine.

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MICHAEL A. TOWLER, MD, FACS: Right.

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THOMAS C. MANN, JR, MD, FACS: That is. That is Marcaine and that'll last anywhere from four to six hours, especially if it has epinephrine included, and it really does make a difference in the pain level.

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CAROL GOLDSMITH: So is this an outpatient surgery? Will she be going home soon?

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MICHAEL A. TOWLER, MD, FACS: Definitely. Now I'm just going to inspect where we worked, make sure there's no active bleeding, no bile leaking from the liver surface. You can see the cystic artery pulsating right there with the two clips on it and the cystic duct there not spilling any bile with two clips on it. And those two extra clips are on very small venous tributaries. But it looks pretty clean, very bloodless, no need to irrigate. And so we're basically done here. I'm going to pull the trocars out one by one, and we look to make sure there's no active bleeding. A lot of times the wall will bleed blood through into the abdominal cavity. Looks pretty good. Hold your finger on that.

00:29:51

THOMAS C. MANN, JR, MD, FACS: One of the problems you see with this is with the 5 millimeter trocars, they really have developed an entry system that more spreads the tissues on entering, so we don't have to close what we call the fascia, or the strength layer, with stitches on the 5 millimeters.

00:30:07

CAROL GOLDSMITH: Meaning you don't have to do stitches on the inside?

00:30:08

THOMAS C. MANN, JR, MD, FACS: Correct.

00:30:09

CAROL GOLDSMITH: Okay.

00:30:10

THOMAS C. MANN, JR, MD, FACS: On the umbilical port, the navel, it is a longer incision and we do have to close that to prevent a hernia. And we tell people typically as far as their activity goes after this operation, no heavy lifting for about four to six weeks over 35 pounds or so. Just take it easy. And that will significantly reduce the chances of them having a hernia.

00:30:33

CAROL GOLDSMITH: Looking at her -- I meant to ask this while we still saw her gallbladder in the abdominal cavity -- looking at it, it looks like a diseased gallbladder. What should a healthy gallbladder look like?

00:30:44

THOMAS C. MANN, JR, MD, FACS: Well, very, very soft, usually a full, you know, like a half-full balloon with no attachments to it whatsoever, the wall is not thick, it's a thin-walled organ. But many times you can have a bad gallbladder and it still look very, very healthy. And you can tell this on pathology by looking at the number of lymphocytes and the -- on pathology to tell if you've got what we call chronic cholecystitis, inflammation of the gallbladder.

00:31:20

CAROL GOLDSMITH: So now he's closing. Now, did I hear air escaping earlier when you asked somebody to place their finger over that?

00:31:26

MICHAEL A. TOWLER, MD, FACS: You sure did. That's right. And that was the patient.

00:31:29

THOMAS C. MANN, JR, MD, FACS: You like to get as much of the CO2 gas out as you can because it will typically go up underneath the diaphragms and irritate the diaphragms, and the diaphragm will manifest itself by pain in one of your shoulders, which can be quite painful. It's a referred pain. And usually we can get most of it out, but it goes away after an hour or so.

00:31:50

CAROL GOLDSMITH: That's sometimes a side effect of like a liver biopsy too, right? You have a referred shoulder pain?

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THOMAS C. MANN, JR, MD, FACS: Correct. Exactly.

00:31:58

CAROL GOLDSMITH: It's just the part of the body where it is?

00:32:00

THOMAS C. MANN, JR, MD, FACS: That's exactly right.

00:32:02

CAROL GOLDSMITH: "After a primary care physician refers a potential surgical candidate to you, what is the protocol in your office?" Another question that we have here from some of our viewers.

00:32:11

THOMAS C. MANN, JR, MD, FACS: Well, what we would do is we would get all lab work, x-rays, ultrasounds, et cetera, from the primary care physician's office, then we make them an appointment and they will sit down with one of us and we will go over all of the studies and order more, if necessary. The symptoms of gallbladder disease are really quite numerous. And sometimes it's somewhat difficult to be able to tell exactly whether this is gallbladder pain or pain from something else.

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CAROL GOLDSMITH: Well, one of our other questions, "Is a rash a common symptom of gallbladder illness?"

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THOMAS C. MANN, JR, MD, FACS: No, it is not.

00:32:55

CAROL GOLDSMITH: That's something else going on, huh?

00:32:57

THOMAS C. MANN, JR, MD, FACS: That's something else going on, maybe the prep after you have your gallbladder out. But the pain is really manifested in the right upper quadrant or the center below the breastbone and with some radiation to the back. Nausea, vomiting, you can have fever. You can have one of each, all of them. It's different in different people. Some people even hurt on the left side of their chest. So that's why it's important when you're having these symptoms to go be checked out because there could be other things going on like your heart or something like that. So it's important to chase it down. It's not always your gallbladder, but many times it is, and that's one of the reasons they come see us. We can sit down and go through all of that with them, order further tests if necessary. And we either say, "It's not your gallbladder," or then we'll go over the procedure at length, then schedule.

00:33:51

CAROL GOLDSMITH: Are these permanent stitches or will they dissolve? Will they have to be taken out or?

00:33:57

THOMAS C. MANN, JR, MD, FACS: These that they're putting in right now will dissolve. And there are different ways to close the incision. You can use a dissolvable subcuticular stitch, you can use the new glue, or you can use staples.

00:34:12

CAROL GOLDSMITH: Well, you mentioned earlier that you do 1,200 of these here a year at St. Francis. The team must be pretty experienced here.

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THOMAS C. MANN, JR, MD, FACS: Very experienced, very experienced. We do have this down, we treat each case as unique, and it's very important to do that. You can never get complacent in what you're doing, especially in surgeries, but we do do a lot of these. We have fabulous ORs here at St. Francis, state-of-the-art equipment, laparoscopic equipment.

00:34:45

CAROL GOLDSMITH: Even a stapler, I think I just heard.

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THOMAS C. MANN, JR, MD, FACS: Yes.

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CAROL GOLDSMITH: So some of these incisions are stapled, Dr. Towler?

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MICHAEL A. TOWLER, MD, FACS: Yes, all of them.

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THOMAS C. MANN, JR, MD, FACS: And that's just --

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MICHAEL A. TOWLER, MD, FACS: They look like they'd hurt coming out, but they really don't. And they save about five minutes of operating time and five minutes of anesthesia, and patients can have a shorter surgery. Got a little bleeding right there. Let me get some Surgicel if I could, a little piece.

00:35:18

THOMAS C. MANN, JR, MD, FACS: And one of the -- some people can get hematomas, which is these little vessels on the abdominal wall can bleed and cause some swelling and pain, but that's usually not a big problem. Overall this is a very well tolerated procedure, and many people that I see back in the office after they have the gallbladder out say, "I didn't really know how bad I had felt over the past several years until I got my gallbladder out. I'm a different person."

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CAROL GOLDSMITH: What's the recovery time to go back to work?

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THOMAS C. MANN, JR, MD, FACS: Many people can go back to work within a week. Some people will go back in three days. Certainly that's if they do not have a strenuous manual labor type job. It also depends on the makeup of the patient. Some people don't do well with pain, and for this reason they'll take longer to get over this. But I usually tell my patients one week, and you should be able to return to work without problems. You're still going to be a little sore, but they should easily be able to do what they need to do. Have another question here: "Should I have my gallbladder out before I have children? I have stones." And no, that is not indicated. You may definitely have problems while you're pregnant, and we don't like to take gallbladders out during the first trimester because the child is developing. And if we do get into this situation, most of the time we can get you over it with antibiotics and get by until we can get the baby delivered or get away from the first trimester, but really the odds are on your side that you're not going to have a problem, so there's no reason to undergo an operative procedure. Would you agree, Mike?

00:37:06

MICHAEL A. TOWLER, MD, FACS: Yeah, I think that's true. Without the symptoms, we wouldn't do it.

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THOMAS C. MANN, JR, MD, FACS: Here's another question. "I'm 61 years old and had gallbladder surgery when I was 19. I had stones and inflammation and still have problems with certain foods and diarrhea. Is this normal?" And yes, this can be normal. It is -- when you take the gallbladder out, you change a little bit of the chemical makeup of the bile salts and cholesterol, and this can continue to give you some problems, although there are other things that may do it as well, and you may need to see your physician to maybe work that up a little bit further. But I don't think that you could probably say that was related entirely to your gallbladder removal. "How long is the training for this procedure?" Well, we are, I would probably say, five years. General surgery residency is five years in length and we begin learning how to do laparoscopic cholecystectomies your first year, so certainly you're scrubbing in and doing those in the operating room. You're not really performing them, but by the time you get through the five years of surgery you should have plenty of experience doing a laparoscopic gallbladder surgery.

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MICHAEL A. TOWLER, MD, FACS: All right. We're all finished.

00:38:38

THOMAS C. MANN, JR, MD, FACS: All right. Looks like he's finished, going to put some dressings on. Let's see. Another question: "Does pancreatitis happen after this surgery, and is it common?" Pancreatitis can happen after this surgery and it usually occurs secondary to small-size gallstones that are in the gallbladder and have worked their way down the cystic duct and into the common bile duct, which is the main drainage tube. If that happens while you're taking a gallbladder out, when you're doing it laparoscopically, you're not able to actually feel the stones within the cystic duct, and therefore when you put the clips on, as you saw there earlier, and then cut across the cystic duct, sometimes you're going to leave some small stones behind. And when these wash out into the main duct, they can get hung up. And when they do this, the bile backs up. You may have heard the word jaundice, where your eyes turn yellow. Your stools can turn very light-colored, and your urine can turn the color of tea, dark. And this is an indication that you have a gallstone within the common bile duct, which can cause pancreatitis. If that's the case, we usually like to calm them down, put them in the hospital, and nothing by mouth for several days. And we follow several different lab parameters -- lipase and amylase -- until this is near normalized. And then we will get a gastroenterologist involved to look at an ERCP -- perform an ERCP. And that's actually putting a scope through the mouth into the stomach and out into the intestine, and they can actually find the opening where the common bile duct drains into the intestine. They open this opening up and pull the stones out from below. It is not extremely common, but it does happen. Another question. All right, here is a picture of the gallbladder removed and before it's being sent to pathology. And you might be able to get a sense of how big it is if you could put it up against maybe a pair of scissors or something. He's actually going to open this, and maybe we'll be able to show you some stones.

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CAROL GOLDSMITH: So it really isn't that long, even one that's as inflamed as hers obviously was.

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MICHAEL A. TOWLER, MD, FACS: It definitely looks bigger on the camera during the surgery, doesn't it? This one's a little bit smaller than most. Gallbladders can be three and four times this size. I'm going to take the clips off the cystic duct here. And we're going to open it up. I felt some, just by squeezing it between my fingers, very small stones. Stones can also range in size quite a bit. These are fairly small. The smaller the stone, the more dangerous it is because it can get down into the drainage pipes of the liver and block things off a lot easier than larger stones, which tend to just stay trapped in the gallbladder. And you can see these little round stones right there.

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CAROL GOLDSMITH: Is that then only true of stones throughout the body, for example, kidney stones, that the smaller ones are more dangerous because they can get trapped further on down in the --?

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MICHAEL A. TOWLER, MD, FACS: That's probably true as well, although if they're very small they tend to pass easier and then the patient doesn't have to have intervention. Let me have a specimen cup.

00:42:39

THOMAS C. MANN, JR, MD, FACS: I have another question here: "Is it true that after surgery, one has more urgency in going to the restroom?" I find that many people, if they're going to have a change in their bowel movements after surgery, it will happen -- it will usually normalize by the time of three months. But there is a certain subset of patients that they will tell you, and it's relatively common, that "After I've had my gallbladder out, after I eat I have to go to the bathroom." Not really sure of the ideology of that, but yes, that can be true.

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CAROL GOLDSMITH: So he's -- you're pulling out stones now, right?

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MICHAEL A. TOWLER, MD, FACS: Yeah. And you can see the stones are kind of in this mucus-like inflammatory fluid. This is a gallbladder that if it was left in the patient, I don't know, anywhere from two weeks up to about two months, this starts turning into frank pus and gives an infection. You can see this -- I don't know if you can get a closeup of that -- it's like this mucus, this very thick, clear --

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CAROL GOLDSMITH: But she hasn't gotten to that point yet, right? She's on the way, but -- or was on the way.

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MICHAEL A. TOWLER, MD, FACS: She told me Friday night she was hurting quite a bit and said some prayers, and she has been on antibiotics for the last couple of days. But yeah, she's definitely headed in that direction.

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THOMAS C. MANN, JR, MD, FACS: Here's another question: "How many staff members are in the OR with the physician and what are their roles?" Well, we have in addition in the surgeon, we usually have two scrub techs, and their job is to assist you with the surgery doing retraction and also holding things. They can cut, suture, and run the back table. They know where all the instruments are, and you ask them for things and they hand them to you. You also have an anesthesiologist and a nurse anesthetist, a nurse anesthetist, anesthesia, are of course in charge of putting you asleep and keeping you that way during the operation and waking you up safely. And then we have usually a registered nurse who is what we call a circulator. And her job is to get anything that we need which may be outside the room.

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CAROL GOLDSMITH: What's he doing with the stones now? What are you doing with the stones, Dr. Towler?

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MICHAEL A. TOWLER, MD, FACS: This particular patient asked us to give her some stones to look at when she went home, so we're putting them in a urine cup for her.

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CAROL GOLDSMITH: She wanted souvenir, huh?

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MICHAEL A. TOWLER, MD, FACS: Yeah. I suppose you could make a pair of earrings out of them.

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CAROL GOLDSMITH: Now, we've heard sometimes the gallstones are pretty. I guess it's too soon to tell with those, huh?

00:45:02

THOMAS C. MANN, JR, MD, FACS: They can be striking. They can be very striking. Unbelievable, but true. Another question: "Why did you drain the gallbladder before you started surgery?" I'm not sure that Dr. Towler did drain the gallbladder, but many times when you have an obstruction of the gallbladder with stones, the gallbladder can be extremely distended and thick-walled, so much that when you go to grab it, as you saw at the very beginning of the procedure, the instrument cannot grab the gallbladder, it's too thick. So then we stick a long needle in and suck out some of the bilious material, and that makes the gallbladder softer so that we can grab it and then manipulate it.

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CAROL GOLDSMITH: Dr. Towler, obviously you've already wrapped up the gallstones and the surgery is pretty much finished. Any final comments about this particular surgery, gallbladder surgery in general?

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MICHAEL A. TOWLER, MD, FACS: No, it's just such a common surgery in general that people really need to be tuned in to what to look for. And what we don't like seeing is when people ignore the symptoms for long period of time, they end up getting in trouble, show up in the emergency room at two o'clock in the morning, and a lot of times can't have this done laparoscopically and have to be opened up because there's either gangrene in the gallbladder or too much infection and you just can't get it out safely with the scopes. And when you can have this procedure done, it saves you a whole lot of misery. And there are plenty of times where we see patients that have ignored symptoms for months and months and months, and they just didn't know. They thought it was heartburn, they thought it was gastritis. They were taking TUMS, they were taking Roloids. They thought it was a pulled muscle. You know, we hear lots of things, but all it takes it a simple ultrasound to detect these. And there's no needles involved with an ultrasound -- it's noninvasive, it's very inexpensive, and it's a very easy thing to do to protect yourself from getting in trouble.

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CAROL GOLDSMITH: Are you surprised by the amount of discomfort patients are willing to suffer before they get an answer, because you're talking about some pretty serious symptoms here, and then they don't really act on it until they're taken to the ER. Is fear a factor here in trying to figure out what's going wrong?

00:47:01

MICHAEL A. TOWLER, MD, FACS: I think that and education, too. We unfortunately just see a lot of it where patients try home remedies and they're just very reluctant. And it is -- some of it's fear-driven, and some of it's where they don't know where to go, they don't know who to turn to, they don't know what types of doctors, they don't know that they really need to see a general surgeon and no one but a general surgeon for this. Those are the only types of surgeons that do this surgery, and they just don't know that. And then once they find out, it's usually months and months down the road. This poor girl took about two years to get here, and we just met here for the first time 13, 14 days ago, for the very first time. Even been to the emergency room. But as word gets out, I think people will start getting checked out a little sooner and we'll be able to diagnose this a little quicker and get people taken care of faster.

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CAROL GOLDSMITH: Do we have a few more questions?

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THOMAS C. MANN, JR, MD, FACS: We have a few more. Here's one: "I'm scheduled to have my gallbladder removed 7/31. I have a gallstone in the neck of the gallbladder. I've had pain four times but no nausea or vomiting. Do you agree with -- to the removal?" Most definitely. You need to have your gallbladder removed. The one that's stuck in the neck of

the gallbladder is not going anywhere, and in fact, the longer that it gets there -- the longer that it stays there, the much harder it is going to be to remove that.

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CAROL GOLDSMITH: That's a bad place, neck of the gallbladder?

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THOMAS C. MANN, JR, MD, FACS: It can be a bad place, and simply because you may get something called Mirizzi's syndrome -- M-i-r-i-z-z-i-s, and that's when the stone lodged down on the bottom, it rolls over and actually can adhere to the common bile duct. And you can significantly increase your chances of having an injury to the common bile duct with that type scenario. Another question: "When you have gas pain, how long does it take to subside?" Usually two to three hours and it should go away. Let's see here. "How frequent is gallbladder disease in older patients?" Really, the people at risk are females. Age 20 to 60 are much more common, 3:1, in fact. At age 60 and below it starts to get equalized, about 1.5:1 as far as female:male. Obesity plays a true risk factor in that. Fertile, which is premenopausal. People who have lost weight. Ethnic groups: Native Americans, Hispanics. But typically your risk -- if you're not in this scenario, your risk of maybe having a gallbladder is not significantly increased being 80 years old.

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CAROL GOLDSMITH: Dr. Mann, final comments? If someone's experiencing any of the symptoms we've talked about, don't hesitate.

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THOMAS C. MANN, JR, MD, FACS: Please don't hesitate. You can be sick, you may forfeit an opportunity to have a laparoscopic procedure by waiting, and there may be other things going on besides your gallbladder that needs attention. So any questions or problems, don't hesitate to call, we'll be glad to help you.

00:50:05

CAROL GOLDSMITH: Dr. Towler, can you chime in on that?

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MICHAEL A. TOWLER, MD, FACS: That's pretty much -- that's fairly thorough. The only thing, sometimes we get asked, "What do I do when I get an episode of pain?" And even in patients that we have scheduled, say, next week for surgery, "What do I do if it starts to hurt?" And we tell them, first, don't eat or drink anything. Lay down. And if it doesn't go away in about four to five hours, you better call and get some attention. And that goes for people that have never been diagnosed as well that may be trying antacids at home or other remedies. Just -- if it's persistent pain, it's ongoing, it's lasted several hours, it's time to get it evaluated.

00:50:43

CAROL GOLDSMITH: Dr. Mike Towler was our surgeon today, Dr. Thom Mann the moderator. I'm Carol Goldsmith with WYFF News 4 in Greenville, South Carolina. We thank you for joining us on OR-Live here from St. Francis Hospital in Greenville, South Carolina.

00:51:01

ANNOUNCER: This has been a laparoscopic cholecystectomy performed from Bon Secours St. Francis Health System in Greenville, South Carolina. OR-Live 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.

00:51:38

[End of program]