NARRATOR

Welcome to the live webcast from Franklin Square Hospital Center in Baltimore, Maryland. During this live webcast, surgeons will demonstrate the latest advancements in carotid artery stenting. Today’s program is part of Franklin Square Hospital’s ongoing educational efforts to bring the latest information in health care to patients and physicians. CME credit is available for qualified physicians. During this program, you may send your questions to the OR surgeons at any time. Just click the MDirectAccess button on the screen.

DANIEL PICARD, M.D.

Good afternoon. Welcome, everyone, to Franklin Square operating room. We are now broadcasting live a carotid artery stenting to correct carotid artery disease. Carotid artery disease is responsible for a large number of strokes in this country. Over 700,000 patients will develop a stroke. In any given year, 160,000 of them will die of this disease. It is the third leading cause of death in this country and 3 million people are stroke survivors. One-third of the patients who are going to develop a stroke have carotid artery disease that could be operated upon and hence protected from a stroke.

What you see now is the offending agent. It is called a plaque. This is the build-up of calcium and cholesterol within the blood vessel that is part of hardening of the arteries. Because of this build-up, flow is reduced, blood clots can form and then shoot off into the brain, creating an obstacle to blood flow to the brain and therefore a stroke. Carotid artery surgery has been around for over half a century. A number of studies have been done here and abroad to confirm that surgical intervention is efficacious in protecting patients against stroke.

You have a slide this is titled NASCET, which stands for North American Stroke Carotid Endarterectomy Trial, which looked at the amount of narrowing in the vessel and the risk of developing what is called mini-stroke or a transient ischemic attack, TIA, for up to a year after the event 12%, five years after the event 30%, or develop a full-fledged stroke. Almost half of the patients who have had a stroke will risk another one within 5 years. Surgery, which is demonstrated here, entitled CEA, attacks this problem by opening the vessel up, cleaning it up, and then restoring the anatomy to normal.
Here’s an open procedure. The white glistening surface you see is the plaque, which is going to be removed from within the vessel. At the end of the procedure, the vessel will be repaired.

The procedure that we are going to demonstrate today is a more advanced version of the carotid endarterectomy and it’s called carotid artery stenting. It is a new procedure. It is coming out of the experimental stages. The FDA has approved the devices. Medicare has approved the procedure and will reimburse for it so it becomes mainstream. We at Franklin Square have been working on carotid artery stenting for a number of years on protocol and now are starting to offer that to our patients.

Carotid artery surgery has a major advantage for the selected patients over medical therapy in that it reduces risk of stroke. The slide you have before you shows patients who have had either a stroke or a transient ischemic attack and the dark blue bar shows 26% risk of stroke on medical treatment and 9% on the surgical side. All the trials that are demonstrated on that slide reproduced the same type of numbers, so surgery in the selected patients has proven to be efficacious.

Carotid artery stenting came about approximately 10 years ago as a possible alternative way of treating carotid artery disease in a less invasive way. We’ve gone through several iterations of devices and techniques. The technique that’s going to be demonstrated to you live is what’s currently state of the art.

Carotid artery stenting has been promoted for patients who are at high risk to undergo open surgery. These are patients who have had severe heart disease, have had a recent myocardial infarction, have liver dysfunction, may have respiratory problems or kidney failure. They may have had a disabling stroke in the past and are usually elderly people over the age of 79. Some patients are also candidates for this type of procedure because they have had previous surgery or radiation therapy or a combination, usually for cancer treatment, in that area, which would make surgical approach extremely difficult and dangerous. This is one such example of a gentleman who has had a previous surgery for cancer of the head and neck and another one that would preclude the surgery from being a reasonable option.

So we’re now finished with the introduction. Our team has been ready to intervene on the patient and now we’ll introduce them to you. In the room, our operating room team are Dr. George Jabaji, who is Section Chief of Vascular Surgery at Franklin Square, and Dr. Ahmad Abu-Ghaida, who is responsible for endovascular surgery at the hospital.

GEORGE JABAJI, M.D.

This patient, who we will call Mr. Harry, is a 74-year-old man and he is considered to be at high risk from multiple medical problems for carotid endarterectomy. He does have, as you see, almost 90% occlusion of the common carotid artery just distal to the bifurcation. We already have, before this started, approached the right femoral artery, took an angiogram, and selected catheterization to the left common carotid artery. From
here, Dr. Abu-Ghaida and myself will continue the procedure and you can all watch and
direct your questions, hopefully, to Dr. Picard and ourselves here.

AHMAD ABU-GHAIDA, M.D.

Thanks George, thanks Dan. This is the patient Dr. Jabaji said who had very severe
stenosis in his common carotid artery. He had some vague neurological symptoms with a
history of transient ischemic attack. His ultrasound showed high grade stenosis in the
distal common carotid artery. We had the angiogram done a few minutes ago. We will be
seeing you the arch aortogram first and then the selected view of the left common carotid
artery. Can we see the arch aortogram, please?

As you can see on this live fluoroscopy, you will see what we call a type 2 or bovine
arch, with the common origin of the innominate and the left common carotid artery. We
already had the wire went up into the left common carotid artery and the sheath up into
the proximal left common carotid artery. Now, on the other side of the screen, you will
see the selective view of the left common carotid artery, showing the severe, more than
80%, stenosis of the distal left common carotid artery. His internal carotid artery is
tortuous, but it is not that diseased. And of course he has an open left external carotid
artery.

Now, by this time we have already given the patient 6,000 units of Heparin, according
to his body weight, and he has mild sedation. As you will see, this procedure is done
under local anesthesia. That’s the advantage over the open carotid endarterectomy which
we used to do for years. We do this procedure for very high risk patients who would not
be able to tolerate general anesthesia and those patients who are not a candidate for open
surgery because of problems in their neck, as Dr. Picard alluded to in his presentation.

From now on, we will be passing a wire through the sheath, going up into the internal
carotid artery. This wire has an umbrella attached to it. This is the protection device. It
protects from embolization which might occur during the procedure. We already prepared
the protection device. This is the catheter. Inside it is the wire. The wire is very small. We
call it 014 inch system. Inside the sheath is the umbrella, which we will be going up into
the internal carotid artery and deploying it, just like a screen, like a vena cava filter,
where it will open up and protect us from embolization going into the cerebral
circulation.

Now, I will be going to introduce it. If you want, meanwhile, to answer questions, Dan,
and show more presentation while we go up into the internal, we will show it to you
when it is up into the internal carotid artery.

DANIEL PICARD, M.D.

As just mentioned by Dr. Abu-Ghaida, they have already advanced into the procedure
and on your screen is a graphic representation of the stage they’re at. In red are the blood
vessels. You see the curvature, which is called the arch of the aorta, and going up
vertically is the carotid artery. The blue catheter is the catheter through which all the instrumentation is going to go. The next step that Dr. Abu-Ghaida is going through right now is to put the wire catheter, the 014 catheter, up into and through the area of narrowing to go beyond it. We call this a rail because it basically allows all the instrumentation to go along that without having the risk of now being able to pass through the narrowing.

Currently this is a picture being taken to demonstrate that, indeed, we are in the correct anatomical position.

This procedure requires precise monitoring of the progression of the wire and positioning of the catheter, so x-rays are done as we go along. As you can see here, now you see the white outline of the vessel. This is called a road map. That allows the operating surgeon to see not only the outline of the vessel, but see live the progression of the catheter and the wires through the areas that we plan to operate upon.

This x-ray demonstrated sort of a wide bifurcation, which is the bifurcation of the carotid vessel. The skinny side on the left of your screen is called the external carotid artery. The wider one is the internal carotid artery. Currently we’re trying to cannulate the internal carotid artery. So what you see moving is the wire.

While the surgeons are proceeding, I’m receiving some of the emails sent by our viewers and listeners. This is from Regina. The question is the following: My brother had a brain stem stroke 10 years ago. He is partially paralyzed on his left side. Do you recommend any vascular procedure for him to treat further disease? Well, #1, Regina, a brain stem stroke usually doesn’t come from disease of the carotid vessel. The carotid circulation provides 80% of the circulation to the brain, but usually doesn’t feed the brain stem, which is the back of the brain. The brain stem receives its blood supply from what is called the vertebral arteries and it’s unlikely that if you had a stroke 10 years ago, any additional intervention, unless there is progression of disease in a different vessel, is usually required.

AHMAD ABU-GHAIDA, M.D.

Dan, we’ve got the wire into the internal carotid artery now. As you see on the screen, there are markers in the wire and now we are entering the internal carotid artery. We will cancel the road map and magnify the picture so you can appreciate the markers. I don’t know if you see those dark markers high up in the upper part of the picture. This is where the umbrella is and in a minute we will be deploying it and starting with our ballooning.

DANIEL PICARD, M.D.

If I may expand on what Dr. Abu-Ghaida is saying, this is the stage they’re at currently, if you see my picture. There’s the carotid artery with the wire going through the lesion and now we’re looking at deploying the device, which is sort of a trap.
AHMAD ABU-GHAIDA, M.D.

If you put the zoom in on the camera, this is our catheter and we are going to show you how we start moving the sheath up and pull it back so the umbrella will open up. This is what we call a torque device and this is part of the sheath. We pass the sheath into the torque device.

DANIEL PICARD, M.D.

The torque device is made to rotate the device around its axis.

AHMAD ABU-GHAIDA, M.D.

Right. Now you see that it is open. There is more than one cut up there at the end and our sheath is out now. Okay, we will shoot a picture to show you that this umbrella is made of a membrane which will allow us to perfuse the brain but still protect from particles which might flow and cause problems with stroke or transient ischemic attack.

DANIEL PICARD, M.D.

The particles that Dr. Abu-Ghaida is mentioning are now on your screen. These are pieces of plaque, cholesterol, and blood clot that can migrate with manipulation of the wires and the catheter.

AHMAD ABU-GHAIDA, M.D.

The guide wire is a bit not concentrated, but you can see it now. As you see in this picture now, the umbrella is open. The dots are there and still the flow is going up to the distal part of the brain. The next step will be passing a balloon and pre-dilating the lesion. We will try with a small balloon to open the artery, not to its full diameter, but just to open it up some so the stent will go easily. This maneuver we do to decrease the amount of embolization which will happen when we put the stent and post-dilate it, and also it will allow us to size the length of the lesion and decide on what’s the length of the stent we will put in. So we will start with a balloon, 014 balloon. It will be 4 mm x 4 cm.

DANIEL PICARD, M.D.

There are two measurements that we have in all the balloons that we use. One is for the diameter of the balloon. That’s the 4 mm that Dr. Abu-Ghaida is mentioning. The second measurement is the length of the balloon that’s going to be used. As the preparation continues to get the balloon up and do the pre-dilatation, what’s going to follow afterwards would be the deployment of the stent. There are two types of stents that are demonstrated. There’s a rigid one on the top of the screen, which is no longer in use. The flexible one is the type that’s now being recommended for use. On this screen you can now see the stent being deployed. As you can see, it looks a bit like chicken wire that is made of a special alloy metal called Nitinol that has the property of expanding when it
reaches body temperature, so within the blood stream, quickly, it is released and deploys to its maximal size and really matches the outside configuration of the vessel.

AHMAD ABU-GHAIDA, M.D.

This is an 014 system and it’s a monorail system. As you see, the wire will come out from the side of the balloon and we advance it down to the edge of the sheath. Then we will fix the wire while we are advancing the balloon all the way up into the common carotid artery.

DANIEL PICARD, M.D.

As we continue the preparation, I’m picking up some questions from our audience. A question from Jodi: Is the stent a drug-eluding stent?

GEORGE JABAJI, M.D.

No, it’s not. It’s just a regular stent. It’s not drug-eluded yet.

DANIEL PICARD, M.D.

The question is really is the stent coated with some drug that is made to prevent renarrowing? These are in use in coronary circulation, but they’re not commonly used yet in either carotid or peripheral vascular stents. We will continue fielding some questions. One from Michelle: Do they use the stent with an anti-embolic feature? The answer is yes. There is a significant difference between outcomes when stenting is done with or without a device for protection.

The same type of question coming from Jodi again. Is it possible to dislocate plaque or debris and cause a brain stroke? The answer is yes. The prevention is the use of the anti-embolic device, which I have examples of on the screen for you to understand. It looks like an umbrella, basically.

While we’re still working on getting ready for the ballooning, I have another question from Regina. The question is as follows: My brother had a brain stem stroke and he also had a bypass 14 years ago. The graft is fine. The other artery is blocked. Can we do angioplasty and any other suggestions? Well, I think that is a difficult one to answer in the absence of an angiogram for us to understand what the real problem is, so I am, unfortunately, not going to have the ability to answer the question fully.

AHMAD ABU-GHAIDA, M.D.

Dan, we have the balloon now. We started pre-dilatation. The balloon is crossing the lesion and we are inflating the balloon now for the pre-dilatation. We will be watching the patient’s blood pressure. Sometimes it comes down. We will be watching him, asking him, how are you doing, Harry? Good. Again, just pre-dilatation before the stenting. Now
we will pull this pre-dilating balloon out and we will go with the stent. So again, fixing the sheath, holding the wire, and pulling the balloon back.

DANIEL PICARD, M.D.

What you’re seeing on screen now is the balloon being removed. Pre-dilatation has been made now, so the stent is going to be the next device to be pushed upward through the lesion and then deployed. This picture I’m showing you, you can see what the anti-embolic device, the protection device, does. On the top picture, you can see all the debris that’s being trapped. This is really the purpose of these devices and they have proved very effective.

AHMAD ABU-GHAIDA, M.D.

This is the stent. It’s a sheath inside it that is an already mounted stent. It’s a self-expandable stent. Again, as Dr. Picard said, it’s made of Nitinol, nickel and titanium. It has a memory to the manufactured size. They come from 4 mm, 5, 6, to 10 mm. So this stent, in particular, is 10 mm at one end, which is the one that will go through the common carotid, and 7 mm on the distal end, which will go into the internal carotid artery.

GEORGE JABAJI, M.D.

We’re moving up with the stent to the pre-dilated lesion and we’ll take one more angiogram or road map.

AHMAD ABU-GHAIDA, M.D.

We will advance the sheath in a minute. As you see, this is the sheath going into the arch here and the stent is inside it. We will go slowly because of the bovine arch. It will sometimes try to jump and pull us back. We don’t want our sheath to go back into the arch. If you go slowly, it will make it nicely, as you see here. We are outside the sheath. Our protection device is there. What we will do is take another picture to delineate the lesion so we can cross it nicely, going from the internal to the common carotid artery.

DANIEL PICARD, M.D.

While this picture is being taken, I’m going to answer another question from John. The question is, do you see any advantage of suprarenal or infrarenal fixation? John, I think you’re in the wrong procedure. This is about repair of aortic aneurysm and the procedure today is carotid repair, so there’s no issue of fixation.

AHMAD ABU-GHAIDA, M.D.

Now the stent is crossing into the internal and crossing into the common. We will put this one in. Sometimes because of this lesion, it’s a long one, the area, I mean, which we
are covering. The lesion is not long, but because we are attempting to start from the internal, going to the common, we could have just a stent at the common carotid artery, but he has some disease of the internal and, as you know, if it’s the bifurcation, he will get into again building up another plaque, so what we will do is cover from the internal down. This is the longest stent we have for the carotid. It’s a 4 cm, so if our length is not enough to cover the lesion and get a good length into the internal, we might have to put another one overlapping with the first.

We’ll do it now, deploy the first stent now. The deployment, as Dr. Jabaji will show you, this is the handle of the deployment. That’s the safety button. By retrieving you back, you unsheathe the stent. You take the sheath off. The stent will open up, flare up, and cover the lesion. We will be fixing the sheath here. We will rely on the road map, making sure the stent will not move back and forth. What happened here is I moved the bed, so our road map is not good now. We just have to do another road map.

DANIEL PICARD, M.D.

While we’re going to do an angiogram, there’s a common question from Jodi. Can the dye for the angiogram cause damage to the kidneys? Yes, this is a known complication of contrast angiography.

AHMAD ABU-GHAIDA, M.D.

We are pushing the stent higher. Okay, now we will deploy the stent.

DANIEL PICARD, M.D.

While this is being deployed, you can see on the screen what the deployment would look like. You can see the unsheathing of the metallic stent, which is now going to take its final configuration.

AHMAD ABU-GHAIDA, M.D.

The stent is being deployed. We’ll take the stent out and then do a picture and do post-dilatation.

GEORGE JABAJI, M.D.

Dr. Abu-Ghaida means we’ll take the sheath of the stent out, not the stent.

DANIEL PICARD, M.D.

I have another question from Josh. Are there any complications for a person to have this surgery performed if they have a brain stimulator? I think this would be two independent issues. You’d have a brain stimulator for a neurological condition. If you have carotid
artery disease and need to have your brain protected from stroke, this procedure would probably not be contraindicated.

A question from Michelle. Will the effects of this procedure be somewhat immediate? Well, as soon as the stent is deployed and it’s satisfactorily positioned, the procedure is basically finished.

AHMAD ABU-GHAIDA, M.D.

Now the stent is in, into the internal, and you will see the waist in the stent, so that’s why we cannot post-dilate it now. We might have to put another stent to go more into the internal. We’ll see what the final picture will show. We will post-dilate with a 6x2 balloon. Mr. Harry, will you squeeze your right hand and show us you have good strength in your hand?

DANIEL PICARD, M.D.

What Dr. Abu-Ghaida is doing is verifying that the patient is doing well neurologically. Ahmad, I didn’t hear the squeaky thing.

AHMAD ABU-GHAIDA, M.D.

Well, we hear it here. You’ll have to believe us. He’s talking. He’s laughing. We’re fine.

DANIEL PICARD, M.D.

One of the major advantages of doing a procedure awake is the ability to monitor the patient’s brain function. The next part of the procedure now is going to be to dilate the area where the stent has been deployed in order to remove that sort of waste area which is still remaining.

AHMAD ABU-GHAIDA, M.D.

Right. What you want is you don’t have to put it up to 100% relief of the stenosis. As long as there is only residual stenosis of less than 30%, we would accept that. This one here is almost like 30%, so we will just go ahead and post-dilated it. This is what we call post-dilatation. We have to be careful again, with the post-dilatation there will be possibility of embolization.

DANIEL PICARD, M.D.

Embolization is having these little pieces that I’m showing you on the screen potentially migrate toward the brain. That’s why the protection device is so important.

GEORGE JABAII, M.D.
We are now moving the balloon through the sheath, up to the stent. The balloon has markers on the side, as you see coming up. The balloon is coming. See the markers.

AHMAD ABU-GHAIDA, M.D.

Harry, you might feel some pressure in your neck now. Just stay with us. We’re fine. We’re almost done here.

DANIEL PICARD, M.D.

The device you’re seeing now is basically an insufflator. The stent has been deployed and the balloon has been inflated. Now they’re going to be taking pictures. There’s one question from Josh. Is this procedure performed under an MRI or under x-ray? Is it done under plain x-ray with contrast material so you can see the outline of the vessel.

Another question from Jodi: Is this patient now going to be on Plavix for the rest of his life and what are the implications of that?

AHMAD ABU-GHAIDA, M.D.

Usually they have to be on Plavix for at least a month. They don’t have to be for life. They have to be for a month on Plavix and aspirin, then they will continue on aspirin for life, but the Plavix is important the first 30 days after stenting. They don’t have to be on Coumadin. Aspirin after a month is more than enough. Many, I’m not sure if they will ask this question, after we put the stents, they will say is it okay to go for MRA? This is compatible with MRA and there would be no problem.

GEORGE JABAJI, M.D.

Now we took pictures after the balloon is removed and the stent is dilated. There’s still some stenosis, but it’s not bad. We’ll open it a little bit more.

AHMAD ABU-GHAIDA, M.D.

I don’t know if you can compare between before and after. We have on the right hand side the lesion. I just want the audience to appreciate the previous picture, without stenting. There’s the blockage there, a decrease around 80%, as I said, and now we have the new one on the left hand side and that’s after angioplasty and stenting. There is about 15% residual stenosis. Again, we could go with the balloon, open it up, or just leave it. The thing about the self-expanding stents, it has what we call radial force and it will continue to expand until it reaches its diameter. Here the diameter is 10 down there, so I think he will be fine without post-dilatation, unless Dr. Jabaji wants to do it.

GEORGE JABAJI, M.D.
No, unless you want to inflate the 6 to 10.

AHMAD ABU-GHAIDA, M.D.

We could, but I think this is very satisfactory.

GEORGE JABAJI, M.D.

Yes, I think it looks good. Just leave it.

DANIEL PICARD, M.D.

On my screen, I think better is the enemy of good. I think you got a great result. I’d stop there.

AHMAD ABU-GHAIDA, M.D.

Right. I don’t think post-dilatation will add much. We have good length into the internal, the origin of the internal. I don’t think we need to pass any other stents in there. Now what we will do as the completion angiogram for the cerebral images to make sure we didn’t disturb anything. Now we ask Harry, how are you doing? We’re doing. We’re going to do the last few pictures and then get you out of here.

Now we will do the cerebral images, lateral and anterior, to make sure his middle cerebral and anterior cerebral arteries are patent and okay.

DANIEL PICARD, M.D.

While they’re preparing for the x-ray, I have demonstrated on your screen what a stent deployed would look like, so you can see that wire mesh completely deployed with both the guide wire and the protective device which is on the top of the picture. This is not the actual patient but a similar type of stent.

The preparation now is to confirm that, indeed, the protection device was there and was efficacious and has protected the patient from any untoward event or showering of debris into the brain.

AHMAD ABU-GHAIDA, M.D.

That’s the venous phase. I don’t know if you will appreciate now the middle cerebral and anterior cerebral artery with branches that look nice.

DANIEL PICARD, M.D.

Now another view is going to be taken. That’s called an AP view or frontal view, if you will. While we’re getting ready, there’s a question about what are the alternatives if you
are allergic to contrast dye in such a procedure? You medicate the patient to protect them from a contrast reaction, allergic reaction. If that’s not a possibility, then the procedure really cannot be done and you’re going to have to resort to standard open procedure.

AHMAD ABU-GHAIDA, M.D.

Very nice. Now the last part of the procedure would be to retrieve this protection device. There is a special sheath we will advance up into the umbrella. That will constrict it, get it inside the sheath, and pull everything out together.

DANIEL PICARD, M.D.

Another question from David, can a patient have the risk of post-operative intimal hyperplasia? The question asks can you develop scar tissue within the operative area? The answer is yes. The incidence is low.

AHMAD ABU-GHAIDA, M.D.

He’s asking about restenosis?

DANIEL PICARD, M.D.

Yeah. I have the slide that we put. At 6 months, you’ve got less than 4.5% of patients that are going to experience more than 50% narrowing. At 12 months, probably 5.5%, so it’s a low percentage, but it’s there. A lot of the efforts and research have been geared toward trying to prevent this, either with medication or coating the stents with a drug-eluding coating that we talked about earlier. There are different maneuvers. Nothing is 100%, but some of the technology today is clearly getting better.

Currently what you’re seeing on the screen is the re-sheathing device being put up to close the umbrella, capture all the debris that might have been trapped in the umbrella, and then be able to take the whole thing out.

AHMAD ABU-GHAIDA, M.D.

Do you see the dot that’s on the screen? That’s the lower part of the umbrella. There are 4 dots on the same level there. That’s what we will be constricting soon. This is the sheath coming up now. You’ll see something coming. We want this to constrict, like that, and now we will get everything out together.

Now I will show you, if you can show the umbrella, what we were talking about, this is the umbrella here. It is attached to the wire, which we worked everything over. This is the floppy part of the wire. You see the parts on the inner part of this membrane. That’s what we are trying to protect from going up into the brain.

DANIEL PICARD, M.D.
The procedure is nearing completion now.

GEORGE JABAJI, M.D.

We will shoot the completion picture anyhow. We usually don’t do that, but we’ll do it now.

DANIEL PICARD, M.D.

Great result.

AHMAD ABU-GHAIDA, M.D.

This is another view. We were on lateral, almost oblique. Now we did the completion with the almost AP view and you could see that waist is almost gone now.

DANIEL PICARD, M.D.

The metallic structure you can see lateral to the cervical spine is the stent. One more picture. The major portion of the procedure is finished. What needs to be done now is removing the sheath.

AHMAD ABU-GHAIDA, M.D.

Now we are debating, me and Dr. Jabaji, if we just use the Perclose, which is a device we can put a stitch in the artery and he doesn’t have to lay on his back, where the other way of doing it is just putting pressure until hemostasis is secured and then he will lay on his back for 6 hours. We use this and he can move in an hour or two. We like to do that because we gave him 6,000 units of Heparin and we don’t like to reverse it. If we are not going to reverse it, we have to wait for the Heparin to wear off and then we’ll take the sheath in his groin out. The thing is, last week he had an angiogram and they used the Perclose. Sometimes if you go again that fresh, a week later, it might not work, but maybe it’s worth trying. If it works, fine. If not, we’ll put the pressure.

If you have any final thoughts now, we will be done in a few minutes.

DANIEL PICARD, M.D.

What needs to be done now is basically to remove all of the hardware that the patient has in his blood vessel and then, as mentioned by the operative team, decide on the closure technique in the groin, where the device is going in. As we’re following right now, we’re looking at the introducer sheath, so the wire is being removed now and the sheath is coming out as a single unit. You can still see that metallic thing, which is now still in the common carotid artery.
AHMAD ABU-GHAIDA, M.D.

Now we’ll put pressure on your groin. We’re going to put a stitch in there.

DANIEL PICARD, M.D.

So the decision has been made to close the groin with a closure device which basically acts as a plug and prevents bleeding from occurring after the introducing device has been removed. As you can see, Dr. Jabaji is draining some of the hardware to set up the Perclose device. There it is. They’re dilating it a little bit at the skin entry so the device can be deployed. This is the Perclose device. There we go. These are the ties that are going to be tied to secure the device inside the vessel. Ahmad, do you want to talk about what you’re doing right now?

AHMAD ABU-GHAIDA, M.D.

This is the stitch we are putting in. Now, we made the knots. There are two needles inside this device that go into the wall of the artery. They are connected to this thread. Then we pull them out and that will get you the stitch into the artery. Now we made the knot. We’ll go in and fix it. Hopefully it will work fine and seal this arteriotomy we made, or the puncture. As you see, there is no bleeding. My left hand is holding the thread. There’s no bleeding there. This is just a pusher to get the knot all the way to the wall of the artery. Okay, That’s it. It has also a blade in it. We’ll go all the way to cut the thread.

DANIEL PICARD, M.D.

Now the procedure is complete, with basically no blood loss. The patient was awake and you’ve seen, I think, a picture perfect demonstration of how a carotid angioplasty is performed and what kind of result can be expected. From there on, the patient will be moving to the recovery room. He was already premedicated with aspirin and Plavix. We will continue his Plavix and aspirin for the month to come and then we’ll switch over to aspirin only. His anticipated discharge, in theory, could be very quick. Just for safety purposes, it’s likely that the patient could stay overnight for monitoring of his neurological status.

AHMAD ABU-GHAIDA, M.D.

Right. As you see, Dr. Jabaji and me, we did this procedure in almost less than an hour. The patient is awake. If he has high risk that we can’t put him to sleep, this procedure he can have without too much risk on his heart or if he has a problem with his lungs, if there’s a problem in his neck. This procedure started, as Dr. Picard said, 10 years ago, but only last October we had the FDA approval for it, so hopefully all the people who are working in the vascular community are excited and I’m sure we will be hearing and seeing a lot of these procedures done and hopefully it will live up to its expectations.
That’s his arteriotomy now. There is no bleeding in the groin. He can jump and walk now, no problem. Thank you very much.

DANIEL PICARD, M.D.

Well, I’d like to thank the team for a superb presentation. The patient selection was obviously good. The execution of the procedure was picture perfect and the result and outcome anticipated to be excellent.

In conclusion, I think we’ve been able to demonstrate that carotid artery stenting is a safe procedure. It can be done under local anesthesia, which is one of the advantages. It’s fast. The anticipated recovery is going to be quick. It is clearly a preferred therapy for patients who are at high risk and, as the technology improves over time, I think we anticipate better results in the future. There are some advantages of angioplasty over surgery: local anesthesia, no pain. Recovery period is pretty much gone. There are fewer complications over time and, in theory, it can be done as an outpatient. The return to activity, if that’s what the patient does, is also possible almost immediately.

Now, that is not to say that the carotid endarterectomy, which is the open procedure, is going to go the way of the dinosaurs, but certainly this carotid stenting is a great advance in the management of extracranial carotid artery disease and I think affords our patients with just another tool to protect them from a stroke. Thank you very much for listening.

NARRATOR

Thank you for watching the live carotid artery stent procedure from Franklin Square Hospital Center in Baltimore, MD. To make an appointment, make a referral, or request more information, please click on the buttons below.