MINIMALLY INVASIVE TOTAL HIP REPLACEMENT

MORRISTOWN MEMORIAL HOSPITAL, MORRISTOWN, NEW JERSEY

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NARRATOR

Hip pain sufferers now have an alternative to conventional total hip replacement. It’s making surgery, recovery, and rehabilitation faster and easier on patients. Surgeons at Morristown Memorial Hospital in Morristown, New Jersey, are performing this new minimally invasive technique.

ROBERT GOLDMAN, M.D.

This procedure is called a two-incision hip replacement. It’s a hip replacement through two small incisions. In doing this, we can make incisions that do not cut the muscles, but we actually separate the muscles and that will make it much less painful for the patient.

NARRATOR

The procedure allows the surgeon to remove the damaged hip and replace it with plastic or metal implants through two small incisions, rather than the traditional 12 inch opening. Unlike the traditional hip replacement surgery, which involves cutting into tissue directly, the two-incision approach allows the surgeon to work between the muscles, thereby limiting muscle damage.

ROBERT GOLDMAN, M.D.

It is quicker for the patient to recover from because we’re not cutting through the muscles. The muscles don’t need that extra time to heal, and that allows the patients to walk better, earlier. It allows them to return to work sooner. It allows them to return to sports and all normal activities at a much quicker pace that the traditional open surgery would do.

NARRATOR
You’re about to see a live webcast of a minimally invasive total hip replacement from Morristown Memorial Hospital in Morristown, New Jersey. During today’s presentation, you may send questions to the faculty at any time by clicking the email button below.

WILLIAM DOWLING, M.D.

Welcome to Morristown Memorial’s life webcast. Today’s procedure is a minimally invasive two-incision total hip replacement. I’m Dr. William Dowling, Chairman of the Dept. of Orthopedics at Morristown Memorial Hospital. I’m here to welcome you all. Drs. Robert Goldman and Paul Lombardi are the surgeons who are performing the procedure and I’d like to hand this over to them at this point, for them to introduce the operative team and let us know where they are in the procedure at this moment.

PAUL LOMBARDI, M.D.

Thank you, Bill. My name is Dr. Paul Lombardi and I’d also like to welcome you to Morristown Memorial this afternoon. Dr. Goldman and I are going to be performing a minimally invasive two-incision hip replacement. I’d like to introduce you to my team. On anesthesiologist is going to be Dr. Phil Lebov*. Colleen Devita* is going to be assisting us. Chris Carter is our scrub tech. Cheryl Gardner is our circulating nurse. Steve Booth is our radiology tech. I’d like to take you to our x-ray station right now and I’d like to show you the patient that we have selected. The hip that you see on the left has already been replaced the traditional way, and the hip on the right has a condition called avascular necrosis. This causes the bone of the hip joint to die, requiring hip replacement. Where we are in the procedure right now is, we have dissected through the muscles and have no disturbed any of their insertions. As you can see, we have minimal bleeding because we have not cut through any of the muscle tissue. We have made the cut in our femoral neck and we’re ready to remove the femoral head. Saw, please.

This is a very interesting condition in that, in avascular necrosis, the cartilage of the hip joint is actually alive, but the bone is dead, so what happens is, the cartilage itself actually peels off the bone and, as you can see, if this was lying in the hip joint, this would be very, very painful.

PAUL LOMBARDI, M.D.

So at this point we have a very nice exposure of the socket or the acetabulum of the hip joint. You can see that right here. This yellow tissue is articular cartilage. We need to remove that tissue in order to place our new socket or acetabular component. I think the best way to see this would be to go to the see-arm portion.

You see on the see-arm screen, that cheese grater type of instrument is in the socket and is going to remove the cartilage.

WILLIAM DOWLING, M.D.

Dr. Lombardi is checking each time to make sure he’s not reaming too far into the bone and he’s not taking away too much bone.
PAUL LOMBARDI, M.D.

We’ve measured it being a size 50 or 52. That’s mm in diameter. I can tell by the sound that the reamer is making and the grip as it’s turning that this is a size 50 reamer and the correct size is going to be a size 52. So can I have a size 52 cluster hold component, please.

WILLIAM DOWLING, M.D.

I wanted to remind everybody that we broadcast to both a public and a professional audience. As you can see from the introduction to this whole process, if you’re a little squeamish, you better make sure you’re sitting down. In any event, as you can see, it’s relatively…all things being equal, having been in the operating room many years, a relatively bloodless procedure. I would also like to remind everyone that they can send their questions to the webcast via our email site, which is webcast@ahsys.org, or click the email button on your internet screen. This procedure has been developed over the past several years and refined in its elements. Drs. Lombardi and Goldman are quite expert at it and actually have been doing it for some time now. The proper indication for this is the right type of patient, who is relatively slender, although that’s been advanced and made a little bit more broad in its application than it used to be. Again, it requires special training. This isn’t available to any particular orthopedic surgeon. It’s someone with relatively high volume, who has had special education in the process involved in this procedure to make it both safe for the patient and productive in its outcome. I probably at this point would suggest that we run a little bit of a videotape to give you an idea of where the surgeons have proceeded to at this particular time. As you can see, they are operating on a right hip. The interval that they develop is between the muscles of what we refer to as the sartorius and fascialata, which is then opened down to the subcutaneous tissues. The beauty of this is that the muscles are actually split, rather than cut. That, of course, is the reason that people that undergo this type of procedure can get back to activities that much sooner. The next interval that has developed, for the surgeons and technicians that are out there watching this, is being developed between the rectus femoris and gluteus medius, down to the hip capsule itself. All of this has already been accomplished, of course, by Drs. Lombardi and Goldman at this point. Additionally, the capsule is the next structure that is exposed. Again, you can see the small incision. The bone of the neck of the femur is then isolated and then transected.

PAUL LOMBARDI, M.D.

We’re ready to put in our acetabular component. What I’d like to show the audience is before we reamed, the color in here, instead of it being red, was a yellow color. I have removed all of the articular cartilage and am now down to a nice bleeding bone bed on which to put my component. The component itself is made out of titanium and this is designed for bone to actually grow into the pores. This sort of sand-colored coating on there is a calcium composite that facilitates this process. Now, you can see that if this is a 52 mm cup in diameter, our incision is really not much larger than that.

WILLIAM DOWLING, M.D.
As everyone can appreciate at this point, this is highly reliant upon the use of x-ray, again because of the limited exposure that you actually have.

PAUL LOMBARDI, M.D.

The x-ray image allows us to see when that cup is fully seated into the bone. It also allows us to determine the appropriate angle for putting in the cup. You see how now the socket is into position and I could tell just by the feel of the tissue that I should not require any additional fixation in the form of screws. I’m putting my retractors back because I have to put in the plastic liner in which the hip articulates.

WILLIAM DOWLING, M.D.

We have had some inquiries as to whether this broadcast would be available in other form. As you know, or as I mentioned earlier in the webcast, this will be produced as an archive. By coming to the Morristown Memorial website, you can have access to that information and actually see this whole presentation over again, so again, you can click on the link and send this to anyone that has an interest in actually seeing the process.

PAUL LOMBARDI, M.D.

I’m going to put in the plastic socket now. If you look into the wound, you can see that now, instead of the red, bleeding bone bed, we can see that there’s a socket in there that’s in very good position, because I have the x-ray in the room to tell me that. The fixation looks very good. I’m pulling on this patient and purely from moving the cup, I’m moving the whole patient, so I know that socket is in good position, with excellent fixation, and will not require any screws.

WILLIAM DOWLING, M.D.

There has also been a question brought to my attention by one of the folks out in the audience as to whether, in certain instances or your particular case, it would be appropriate to have what is called a ceramic on ceramic total hip. Although ceramic materials have been around for some time now, they have only recently been reintroduced, frankly because of some issues that occurred, going back many years. The question arises as to whether this is an appropriate interface between the hip components, as opposed to using components which are made of traditional materials, which are alloys of stainless steel and of course the polyethylene. Newer advances in the production of polyethylene have made it much more long-lasting than in the older versions that we used several years ago.

PAUL LOMBARDI, M.D.

I’d like to show the audience the completed socket. You can peer into the wound here. What you can see is that white material is the plastic socket and we are now ready to start the femoral component portion of the procedure.

WILLIAM DOWLING, M.D.
To get back to our discussion about the different bearing surfaces, I would say that at this point it’s still uncertain as to what the long-term consequences of these new things are. With reference to this particular procedure, it’s a...the procedure is done with standard materials. I am sure that sometime in the future, people will begin to use other types of materials to see if they work as well, but certainly at this stage, for the sake of uniformity and making sure that over the long term, everyone is pretty much doing the same thing, that not too many variables are thrown into the mix, that this would be the way to approach this.

PAUL LOMBARDI, M.D.

What I’m doing right now is feeling where in the patient we’re going to put our incision. It’s very important to have accurate incision placement because the incision is so small. If you’re not directly over where you need to be, the incision needs to be lengthened. Just as a frame of reference, Dr. Goldman is making what appears to be about a 3 cm incision. Once again, what we’re doing is dissecting through tissue planes and through muscle, as opposed to cutting it. When you cut through tissue, instead of spreading, you’re causing additional bleeding and additional pain.

WILLIAM DOWLING, M.D.

For the orthopedic surgeons out there, this is not too dissimilar from the approach that’s used when we’re inserting an intramedullary rod for the purposes of treating a femoral fracture.

PAUL LOMBARDI, M.D.

What we’re doing right now is using a long metal rod to find our position in the femur. Dr. Dowling, perhaps you could show them portions of the video up to this point, as a review.

WILLIAM DOWLING, M.D.

If we’d go back to the video, I’d be happy to demonstrate where people are. We’ve already gone through this portion of the procedure and down to the level of the capsule itself. There are always some small blood vessels in the way and the traditional way of treating that is to electrocauterize them. Earlier in the procedure, the capsule was opened. The neck of the femur was exposed. Then, this part of the procedure is rather unique to it, is that when the bone is cut, the section in the center is actually removed first. The reason for that is that this is a very limited exposure that doesn’t allow you to take the whole component out at once, so that segment is removed initially and then the head itself is removed from the socket.
You’ll notice that the reamer itself tends to cut along the margins, so that it’s not a full hemisphere. Again, this is an adaptation that was necessary in order to enable the smaller instruments to be introduced through the small incision. The cup component is inserted. Oftentimes it’s fixed with a screw. As you recall, this was not necessary earlier in this procedure today, but sometimes it is an additional safeguard necessary to help this fixation. A liner is then inserted, which is the high density polyethylene or plastic material, and then the procedure moves toward the femoral portion of the procedure, which Dr. Goldman and Dr. Lombardi were just recently starting. The interval is almost at the opposite side, if you will, of the original incision and enables access to the shaft of the femur.

At this particular time in the procedure, Drs. Lombardi and Goldman are opening up the femoral canal. This is done sequentially by a series of reamers to make sure that there is adequate room to introduce the prosthesis. If you go back to the videotape, I’ll be able to illustrate this a little bit better. This, of course, is a live feed of what’s occurring, but in essence, this is what is occurring at this point in the process, in which the canal is opened up gradually to allow the insertion of the broach, which is a rasp device that enables the fixation of the prosthesis itself to be quite solid. The device itself is also what we call a porous coated device. You’ll notice that we’re not using cement, which is the more traditional way of treating this type of process. In part, this is due to the fact that there’s simply little room to remove any excess cement that extrudes, and also in part is related to the fact that we have more and more evidence that porous coated devices are beginning to show the same level of longevity, if not more than the traditionally cemented device. The canal, in this instance, is being rasped or configured to accept the device itself. The trial device is inserted and the impacted into position, driven into position, and then generally a trial reduction is carried out. That small ball that was just added to the stem is adjustable by different sizes so that different lengths and tightness in the fit of the prosthesis can be accomplished.

At this stage, Drs. Lombardi and Goldman are still opening up the canal and are probably very close to the point where they will be able to begin what we call broaching or rasping to adapt to the final fit of the device. If we can switch over to the image intensifier on the view here, we’d probably be able to see the progress that they have made in widening the canal and inserting the reamer down into it.

There are some other questions that have just come in. A lot of folks always want to know how long a total hip lasts. The total hips, and the real answer to that, frankly, is that it depends. It depends on the level of activity. It depends on your body weight. It depends on the skill of the surgeon that has placed the device. To some extent, the materials that are used, which have much more longevity than the older materials, so it can vary considerably. The younger patients tend to be a little bit more adventurous, if you will, with their hips and often put on it a higher demand. We think that perhaps contributes to the problems that we face long-term with a younger population. On the other hand, the older population tends to be a little bit more sedentary and respectful of the fact that this is a man-made device. In that instance, it can last a lifetime. Generally speaking, 95% of the total hips that are placed in the population in this country, at the end of 12 years are still in good position. There have been total hips that have lasted up to 35 years.
Paul and Bob, where are we at this stage?

PAUL LOMBARDI, M.D.

We’re at the point in the procedure where we’re still lining the canal to accept the appropriate sized component. We start out with reamers like this that do not cut at the tip. They just cut at the sides and allow us to widen the opening that we’re going to use. These yellow reamers are more for cutting directly down. These are the reamers that are sent down the shaft of the canal, that allows us to widen it to the appropriate component size. That’s done in increments of 0.5 mm so that we don’t do it too aggressively or too fast. Now, we’ve templated her to be potentially either a size 11 or a size 12, but obviously it’s not exact and sometimes we just use the feel of the grip of the reamer within the femoral canal as our guide. So after we are done reaming through to the appropriate size, we then go to broaches. The broaches are the general shape of the femoral component. These are very, very sharp edges that allow us to cut into the bone so that we can make the correct geometry and correct shape within the bone itself.

This will be our final broach. This is what we templated out.

WILLIAM DOWLING, M.D.

Drs. Goldman and Lombardi at this point are fitting and feeling the size, not only using their tactile response of touch, but also the appearance on the x-ray. What they’re looking for is the snuggest fit that will go into the canal and hold that device snugly in place.

There is a question here, from a relatively young woman, as to whether a ceramic on ceramic type of hip is more appropriate than what they call a metal on metal device. There’s controversies, as I indicated earlier, in both areas. The objective here, of course, is to try to find something that’s going to last a lifetime. Ideally, you want to do one operation and have it last for the rest of your life. The metal on metal carries the side effects of causing an increase in metal ions in the blood. We know that some of these at high levels can be toxic. Certainly in women, it’s controversial as to whether it’s appropriate to administer this type of ionic load to their bloodstream, especially if there’s a possibility that they could become pregnant. It’s very controversial and certainly, in all honesty, there is no clear answer at this point in time. These are precautions that are based, in many instances, on theoretical risk rather than actual experience. Who knows, in the future, these new materials may prove to be the way to go, but at least for the time being, the tried and true and the one that we have the longest track record of more than 30 years at this point, is the use of metal on polyethylene.

One of the other questions was, what makes one patient better than another for this particular type of approach. That varies with the patient’s age, the size of the patient. As I indicated earlier, heavier people are being used.

PAUL LOMBARDI, M.D.
The component itself is made of a material called cobalt chrome and it’s coated with a titanium mesh, very similar to what you saw on the acetabular component, and it’s also coated with that same colored material, which is a calcium composite, which allows the bone to grow in faster. If you look at the shape of the component, it’s shaped like a wedge so that when it gets driven down into the femur, the geometry itself aids in keeping the component in place, so it’s in the shape of a wedge in both this dimension as well as that dimension.

WILLIAM DOWLING, M.D.

Obviously right now Dr. Lombardi is inserting the stem into the canal, passing it through the muscle planes that still remain intact. Now, using the x-ray, they’re going to drive the final device home.

There was a question earlier, by email, as to how long this procedure takes. So far, these men have been operating for less than 50 minutes and, as you can see, are quite far advanced in the process of the total hip replacement itself. Most of the time, this procedure, in experienced hands, could be performed in around an hour’s time. In most instances, one hour to an hour and a half is a very credible time period for this particular process.

There you can see the stem actually down inside the canal.

PAUL LOMBARDI, M.D.

Dr. Dowling, we’re going to do the provisional reduction. One of the more difficult parts of the procedure is inserting the final component through the tissues so then we can get it relocated into the socket. Once again, because we dissect through the tissues and we don’t cut them, it creates a bit of a technical problem, but as you do a number of these cases, you get to understand the tricks that you need to do in able to make this step smooth.

WILLIAM DOWLING, M.D.

At this point, of course, they’re trying to align the step with the socket that was previously placed, in preparation for putting the small ball or head on the femoral component. This will also allow them to have a determination as to how tightly everything is structured and how stable the hip prosthesis is afterwards.

PAUL LOMBARDI, M.D.

What I’ve done is, I’ve placed the component, without the head on, and what I’m doing is, I’m assessing how much tension I have here and by that measurement of tension, by that feel, I can determine what sized head needs to be placed into the socket.
If you look at this, this is a trial femoral head. This head is 32 mm in diameter and it comes in different sizes, so this is a size 0 and it goes up to a size 10, so I can add 10 mm of neck length by using different trials, but based upon the tension, it appears that a 32 mm +0 head is going to be the appropriate size. When we’re tensioning the tissues, we’re also, at the same time, trying to make sure that the leg lengths are equal, which is a very important part of total hip replacement. When you feel that the leg tensions are correct, then the limb lengths are correct as well. We also, one of our checks is also made when we do the initial cut into the femoral neck. Very precise calculations are made as to where to actually put that saw cut.

WILLIAM DOWLING, M.D.

You may have noticed that, as Dr. Lombardi was showing you the head component, that it’s got a slot in the side. That, of course, is because, again, you have such limited exposure here that it’s very, very difficult to get that head down into the socket in the proper position. That slot in the side facilitates that. The 32 mm, by the way, that he was referring to as the diameter of that ball, there are varying sizes. The 32 diameter provides a little more stability than the smaller sizes that have been traditionally used in the past.

PAUL LOMBARDI, M.D.

The hip is reduced now. Now I’m going to recreate that tensioning test and I have very, very little excursion or jostling within the hip joint, which tells me that this is the appropriate size. Now I’m testing stability. One of the problems with hip replacement the traditional way is that the hip can dislocate if it’s put into incorrect position. With this new procedure, in a traditional hip replacement, you’re really not supposed to go past 90° when you are sitting. The 90° rule, it’s called, but we can bring her hip all the way up to about 120° and it’s not even beginning to dislocate. Okay, I’m also trying to dislocate her head out the front and I’m unable to do that as well, so her hip is quite stable. It’s actually so stable that it actually requires a special instrument to dislocate the head. Now we’re going to remove the trial head and place the component.

WILLIAM DOWLING, M.D.

There was a question from one of the folks out on the internet as to whether you need to use blood for this procedure. By and large, you can see that with the small incisions and the very careful approach to the hip, only splitting the muscles, really, there is very minimal blood loss. This has been traditionally where we have been moving for some time now, even with what we call the mini incision, which is a more traditional approach, a single incision but only about 3 inches in length, so the need for blood in hip replacement has become less and less likely.

There’s a special impactor that they just used to drive home the head onto the top of the stem, which is preparatory to reducing and testing it for stability.

We should be able to see what the final product looks like as soon as the x-ray is properly positioned on the operative field.
PAUL LOMBARDI, M.D.

Now that we’ve completed the procedure, you can see the various components in position. We completed this procedure in an hour and we’ve been talking, we’ve been instructing. After a certain amount of time, when you’ve done these cases, you can get this down to the normal time that it takes to do a hip replacement the traditional way. The incision measures 3 inches in the front to put in the socket. The back incision is 1.5 inches. At this point, we’ve lost very, very little blood during the procedure. This patient is going to go upstairs this afternoon. She’s going to get out of bed. She’s going to sit up in bed and eat her dinner. She is going to climb physical therapy stairs. She’s going to go home tomorrow without total hip precautions, without a high toilet seat, without having to put a pillow between her legs in order to sleep. She’s going to really notice a difference with this procedure because she did have a traditional hip replacement technique on the opposite site.

Now that we’re finished and we have some extra time, perhaps we can take some questions from the internet audience or from our audience in Liberty Science Center or perhaps even down in Malcolm Forbes Theater.

WILLIAM DOWLING, M.D.

A number of questions have actually been, what’s the proper procedure for a 22- to 42-year-old and is there a difference in the bearing surfaces that would make this preferable or not preferable to some of the other alternative bearing surfaces available?

PAUL LOMBARDI, M.D.

The bearing surface in hip replacements become quite controversial because now there are three legitimate choices. There is the traditional metal on plastic, which you saw today. The plastic that she has received has been treated with radiation to make it particularly resistant to wear. There’s also metal on metal components and there’s also ceramic components, which was popularized by Jack Nicklaus when he had his hip replacement. Each has its pluses. Each has its minuses. How I counsel my patients is, this is my own personal bias, but the problems with ceramic is the problem with any ceramic: it can break. Having been there when I’ve revised a ceramic component that has broken, it’s a difficult procedure to perform. The metal on metal components shed very small amounts of metal ions that have been found in high concentrates in patients’ blood streams and in their lymph nodes, so we’re not 100% sure if that could be carcinogenic. There are some studies in Europe to suggest that there may be a problem. It hasn’t been proven, but until it’s completely elucidated, I’m trying to steer my patients away from it. I choose to prefer the metal on radiation-treated plastic, but that’s just my personal bias. Dr. Goldman?

ROBERT GOLDMAN, M.D.

I agree with Dr. Lombardi. I have the same feelings about the ceramic as well as the metal on metal components and I also counsel my patients to use the metal ball on the radiation-treated plastic. I feel that right now gives the best results.
WILLIAM DOWLING, M.D.

Does it make any difference which type of prosthesis is inserted, in terms of recovery? I think I know the answer to that, but I’ll let you answer it instead.

PAUL LOMBARDI, M.D.

Well, the two choices that you have are either a cemented component or a non-cemented component. The overall majority of times, there’s really no difference in recovery. There is occasionally a patient who has to restrict their weight bearing in order to allow the bone to in-grow properly, but that’s the rare exception.

ROBERT GOLDMAN, M.D.

I think postoperatively, patients today are virtually treated the same way, both with cemented hips as well as uncemented hips. Generally, we’re using uncemented hips in younger patients, although today we’re using them frequently in older patients, as the success of those prostheses has really been shown to last at least as long as cemented hips, but the recovery is really about the same, no matter which type of hip replacement you’re going to use.

WILLIAM DOWLING, M.D.

What are the criteria for your candidates for this type of surgery?

PAUL LOMBARDI, M.D.

This type of surgery, generally patients are younger, are relatively lean, have the kind of bone that will accept a non-cemented component, and are willing to go home the next day. Now, what I don’t want people to believe from this presentation is that traditional hip replacement is bad or that traditional hip replacement is not as good as this. Hip replacement, in general, has been a phenomenal operation in the last 30 years. This particular technique is for selected individuals who want to aggressively try and get their lifestyle back a little quicker. If you look at these patients six months out from a standard hip replacement, they really do about the same. The difference is that, in the beginning, they’re getting up on their feet and back to work and back to their productivity.

ROBERT GOLDMAN, M.D.

I agree with Dr. Lombardi. Really the only advantage of this procedure is to allow the patient to recover quicker and go home sooner. It is not a better operation than an open, standard hip replacement, but there are some advantages to certain patients who would like to get back quicker, from their recovery standpoint, maybe have less pain, but it’s technically a more difficult operation to perform and with that, there are certain risks and complications that can occur, which may not occur during standard open total hip replacement.

WILLIAM DOWLING, M.D.
Perhaps, if I can add something, the real appeal to this type of procedure is the appeal of all minimal incision surgery. By the way, that’s what the MIS refers to. It’s simply an acronym for minimal incision surgery. You feel less violated and there’s no question that the advances that have occurred, not only in orthopedics, but in the other areas of surgery, that have made people feel less violated and, indeed, are less violated by the introduction of many of the processes and implants that we do nowadays has a broad appeal. It would appeal to me as well. So that’s certainly the main thrust of this particular type of procedure. Down the road, we may very well find that this is clearly the standard way that this operation should be performed, but at this particular time, we’re still in the infancy of it. I think the procedure will be refined over time. We’re still looking at the changes that are occurring in engineering and in the bearing surfaces that we use to perform these types of procedures, and all of this will have to evolve over time to get a better sense of what really works the best for each and every one of us, but certainly I think this is a major step and advance in an approach to an operation that has led to, I think, in the long term, certainly better potential for longevity and certainly activity in the younger population.

One of the questions that was asked earlier is, is it different in terms of what you allow your patients to do with this type of process? I think I know the answer to that, but I’ll let Bob and Paul give their opinion about what they feel are the restrictions that this type of patient should still undergo after the surgery.

ROBERT GOLDMAN, M.D.

Because of this approach, this two-incision approach, patients have less restrictions postoperatively than someone who has a standard hip replacement, where there’s much more stripping of the soft tissues. This is an inherently more stable hip when it’s put in correctly. Because of that, we actually eliminate the restrictions that we have on the patients. They can begin fully weight bearing. They don’t have to wear any pillows between their legs. They can sit on normal chairs and don’t have the same restrictions that someone may have with a standard total hip replacement.

WILLIAM DOWLING, M.D.

What I would probably suggest at this point is that we let you complete the surgery on your 50-year-old patient and we’ll go, perhaps, back to the videotape to reiterate some of the things that have already been done. If not that, what we can also refer to are some slides that might illustrate some of the distinctions and may answer some additional questions that you folks have out there about this particular type of operation. At this point, I would suggest that we go to either the tape or to the PowerPoint presentation, which will go over the procedure.
Okay, we have the videotape up. As you can see, we’re stepping through this. This will go rather quickly, I might add. The exposure to the femoral neck. In the beginning of the procedure, by the way, the skin is marked using x-ray control so the precise location of the femoral neck is identified. Again, the exposure anteriorly into the groin region to expose the neck of the femur and to approach the socket for revision is occurring at this point, with the dissection of the muscles. Again you’ll notice that the muscles are more or less split and separated, rather than actually cut, which is again the more traditional way of approaching the hip joint itself. I look back and see some of the changes that have occurred in orthopedics during my career and it was not at all uncommon to have an incision to approach the hip in this region extend more than a foot. In this instance, now, we are approaching again the anterior aspect, developing what we call the interval between the rectus femoris and the gluteus, and exposing the capsule of the joint and small blood vessel over the top, which will be electrocauterized so that it doesn’t bleed, then retracted out of the area. Most of these vessels are small veins, but small arterial arteries as well.

The capsule of the joint is opened. The special retractors, which as you noticed, have those prominences on the side. These are actually canals in which fiberoptic lights can be inserted. Our surgeons here feel just as comfortable without them as they do with them, but they were specially developed by the manufacturer to enable us to facilitate visibility in this very tight wound space. The components are removed somewhat piecemeal, if you will. The socket or acetabulum is approached with the low profile reamers, reamed to the proper size, and then the porous coated implant is impacted in place and sometimes fixed with an additional screw. Following that, the plastic material is inserted into the hip socket to provide the bearing surface and then subsequently followed by the approach to the canal itself. We illustrated earlier, the site is often identified by palpation, which is insertion of the finger to note where the location should be. A small incision – in this case, it was 1.5 inches – is made in the skin and then the muscles are split down to the shaft of the femur, into which is introduced the reamers that identify the central portion of the canal, the thigh bone, and then gradually expanded to accept the broaches for the device itself. The expansion is done bit by bit, rather than all at once, to avoid the possibility of fracturing the surrounding bone. Measurements are also obtained to determine that diameter using small problems from time to time, although most of the time we simply rely on the size of the reamer itself. There’s a small sheath that’s inserted as the longer reamers are introduced, simply to protect the soft tissues surrounding the area. We’ve gone to a great extent, of course, to try to avoid injuring those tissues and this is just another step in that process to continue that particular goal.

Finally, the rasps are inserted until the proper size is achieved. This is determined by feel as well as by fit on the x-ray and then the trial component is inserted. In this case, they’re inserting the final component, which is impacted down into the canal. The head is placed, as you saw, from the other side and it is introduced into the socket and essentially the operation is completed once that is achieved.

We’re back live in the operating room again. At this point, we’re just about at the terminus of the closure itself.
PAUL LOMBARDI, M.D.

In that short amount of time when Dr. Dowling was reviewing the procedure, Dr. Goldman and I have finished the closure. Once again, decreased OR time, decreased time of the patient being exposed, decreased blood loss, decreased chance of getting an infection. The number of little pluses that go along with having this procedure done.

Bill, any more questions?

WILLIAM DOWLING, M.D.

Not at this time. I just wanted to remind everybody that the archive will be available at our website, WEBCAST@AHSYS.ORG, or, as we commented, you can use the email button. The archived version will also be available at the Atlantic Health System website, which is WWW.ATLANTICHEALTH.ORG. There will be a location for the webcast and the archived version probably within the next week or so will be available.

I wanted to thank you all for joining us here today. It’s been an interesting experience for us all. I think that you’ve seen a couple of superb surgeons make a relatively complex operation look like it was very, very simple to perform. My congratulations to them for their skill. We would recommend as well that you refer this website program to your friends or send a link to the website for their benefit. At this time, I think we’re pretty close to saying so long from the operating room at Morristown Memorial Hospital. Thank you all.

PAUL LOMBARDI, M.D.

We’d just like to thank the audience for coming today and joining us. I’d like to thank my team, who did a spectacular job in getting this done, and Dr. Goldman, as well, for assisting. Please come to the site and link it to your friends. Thank you.

NARRATOR

This has been a minimally invasive total hip replacement performed live at Morristown Memorial Hospital in Morristown, NJ. For more information, to make a referral, or to make an appointment, click on the buttons below.