



**ANTERIOR APPROACH FOR TOTAL HIP REPLACEMENT
ST. JOHNS HEALTH CENTER
SANTA MONICA, CALIFORNIA
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NARRATOR: Welcome to St. John's Health Center in Santa Monica, California. Over the next hour you'll see an anterior approach for total hip replacement, brought to you by DePuy Orthopedics, Incorporated. This approach to hip replacement surgery allows the surgeon to replace the hip without detachment of muscle from the pelvis or femur during surgery. An advanced surgical table is used to help enhance access to the hip. The anterior approach may allow for patient benefits including accelerated rehabilitation, lower risk of dislocation, more accurate leg length and a smaller incisions compared to traditional hip replacement techniques.

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OR-Live and DePuy Orthopedics Incorporated make 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.

00:01:11

J. BOHANNON MASON, MD: Good afternoon. I'm Dr. Bo Mason from Charlotte, North Carolina. Welcome to OR-Live. We're here at the St. John's Health Center in San...Santa Monica, California. I'm going to be watching today Dr. Joel Matta perform an anterior approach. Dr. Matta is a well recognized expert in the...in the field of pelvic reconstructive surgery, but has been a real pioneer in the development of the anterior surgical approach and has extensive experience with over thirteen hundred cases using this procedure. So, Joel, with that if we could...if you introduce our patient for the day?

00:01:52

JOEL M. MATTA, MD: Thank you very much, Bo. We're going to be operating a very nice woman. She's sixty-four years old. She's a Southern California resident. She's very healthy and active and wants to continue a healthy active lifestyle. And I've told her she'll, in all likelihood be able to do that after this surgery. We have her x-ray over here---

00:02:15

J. BOHANNON MASON, MD: Yeah, if we could take a look at that.

00:02:15

JOEL M. MATTA, MD: ---on the x-ray board. Can you see that now, Bo?

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J. BOHANNON MASON, MD: Now we're going to come over to the x-rays, if we could please.

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JOEL M. MATTA, MD: And we have....We're going to be on operating her left. We're going to be using the DePuy Corail Stem.

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J. BOHANNON MASON, MD: If we could zoom....zoom in just a little bit on that, that would be wonderful.

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JOEL M. MATTA, MD: Okay. So we're going to be...Why don't we concentrate on the left hip over here where pointing. We're going to be using the DePuy Corail Stem. We can see she has degenerative arthritis, a complete loss of the superior joint space. There's an osteophyte on her femoral head. There's not a lot of secondary change. And she, like a lot of patients now since hip replacement I think is really an easier, a quicker recovery, are choosing to get it done sooner and not putting it off, as she doesn't have to look at such a long recovery period.

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Probably we're going to be using the lower neck angle, the KLA, because it matches her anatomy. And we're going to be using probably the 1.5 neck and put the center of rotation here. The neck cut is going to be right in this area, so we can get an idea from the template. So we're going to be using the x-ray during surgery to make some checks as we go along. But still we're going through the normal templating, the normal planning that we would with the surgical procedure.

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We've templated probably somewhere like a forty-eight of fifty millimeter cup. We're going to be using a hard surface bearing because she is healthy and very active; interested in the longest potential wear. Okay, we're going to go ahead and begin the surgery.

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J. BOHANNON MASON, MD: Joel, if you could take a second and kind of get our audience oriented to...to the table and...and maybe a little bit to the prep that you use for this, because it's a little bit different than your standard posterior or posterior lateral approach to the hip.

00:04:06

JOEL M. MATTA, MD: Yeah. We're going to be using the OSI hana table. The original table for this procedure was a [Juday?] Table in France, but we now have an American made table that, actually, we've been able to make some improvements for the procedure.

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The patient is supine on the table. Both feet are in attached foot boots on the table that are going to manipulate that legs during...during surgery. And, in addition to the table that we didn't have on the older tables, so we have this motorized jack. So the table actually manipulates the leg outside the wound. You're getting a view of the foot of the table where the leg is manipulated, but also there's this bracket that a hook is attached to. The hook goes inside the wound, so it's actually a simple robotic function that the table has. And the motorized hook is going to operate inside the table to raise and lower the femur to enhance the access.

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So with the anterior approach, the acetabular access is easy. The femoral access has always been the bugaboo with this approach; probably why it hasn't been more widely adopted because femoral access is more difficult. But it's really the orthopedic table that's going to allow consistent femoral access by putting the leg in the correct position, and also with the robotic hook that will raise the proximal femur.

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We've drawn out an incision line here. This is a drawing of the iliac crest. Here was an incision line that I drew. We've drawn out a nine centimeter incision, about a three and a half inch incision, which is a cosmetic length. Plus, it will give us actually an excellent view during the procedure.

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The incision starts about three centimeters lateral to the anterior superior spine, about a centimeter distal. It proceeds...This would be parallel to the femur. This is a left hip, with the foot to the left, the head to the right. The foot is where my left hand is here. But the incision goes a little bit oblique to the long access, so it goes parallel to the fibers of the tensor fasciae latae muscle.

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J. BOHANNON MASON, MD: So the interval that you're going to be exploring here is the whole Smith-Peterson interval of the...the inferior aspect of the Smith-Peterson interval, correct?

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JOEL M. MATTA, MD: Right. Yeah. This is classic approach to the hip. I think this interval...this short Smith-Peterson approach was actually described in the 1890's by a German surgeon named [Houghter?]. And...was...So the...the approach has been known for a long time. But it hasn't been so popular for hip replacement, probably because of past difficulties with access to the...to the femur. But we're going to show you how with the current technology we can get excellent femoral access.

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J. BOHANNON MASON, MD: It's a...It's an interesting point. This is actually a inner musc...intermuscular and an inner nervous plane into the hip.

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JOEL M. MATTA, MD: Yes, it is. Right. I think it's...To me it's the ideal interval, because it's intermuscular, it's inner nervous and we don't need to detach the muscle from the bone. So the patient can get a quicker recovery of muscle function, because the muscle attachments haven't been disrupted. Additionally, the patient has an immediate stability. So postoperatively, the patient won't have any dislocation precautions. They can move the hip freely even from the beginning. With the implants we use the Corail stem pinnacle cup. They can be immediately weight bearing.

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Now you see that fat layer is relatively thin in this area. This is not an obese patient. But even so, even in obese patients there's rarely more than about two, three centimeters of fat in this area. So...

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J. BOHANNON MASON, MD: Joel, a lot of people that have used this interval for other... other surgical approaches have had difficulty with the femoral cutaneous nerve. Can you... can you discuss that point a little bit?

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JOEL M. MATTA, MD: Yeah. Thanks for bringing it up. And as you see that we're beginning lateral to the anterior superior spine and...and the nerve starts just medial to the anterior superior spine so we're going to begin a little bit lateral to it. And also, we're going to enter the fascia lata. And we enter here, you see the translucent portion of the fascia lata so it's going to be anterior to the iliotibial band.

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We can go as far posterior as the iliotibial band where we cut the fasciae latae, but if we go... split the iliotibial band then we're going to enter actually the Watson-Jones interval, which is not the plan for this.

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Now, oftentimes, we'll see this little...Can we zoom in a little bit. We'll see this little vascular perforator which gives us a nice...I'm just going to coagulate that, but will...it will give us a nice starting point.

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J. BOHANNON MASON, MD: And that's on the anterior margin of the...of the tensor fasciae...tensor fasciae latae there?

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JOEL M. MATTA, MD: Well, it's...it's actually toward the posterior border of the tensor fasciae latae muscle, but it's near the anterior border of the iliotibial band.

J. BOHANNON MASON, MD: All right.

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JOEL M. MATTA, MD: So what we want to do, in order to preserve the hip deltoid, is not split the iliotibial band. The hip deltoid, by that I refer to the common attachment of the tensor fasciae latae and the gluteus maximus to the iliotibial band. So we...we don't want to disturb that. We're anterior to the iliotibial band. I'm just cutting, really, the nonstructural part of the fascia lata over the tensor.

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J. BOHANNON MASON, MD: So, if you were to imagine how far back posterior from the anterior margin of the...of the tensor you are, what...what would be your average estimate there?

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JOEL M. MATTA, MD: Well, I think it's about three centimeters back, because the tensor comes from...the anterior portion of the tensor is at the anterior superior spine. We start the incisions three centimeters posterior from that.

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J. BOHANNON MASON, MD: Very good

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JOEL M. MATTA, MD: And now I'm going inside the tensor sheath...Could I have a Hibbs retractor, please? And we'll just pull...to give you a little better visualization, I'm just putting my finger bluntly around the tensor. And we can see I've gone to the medial border of that. And now I'll put my finger onto the anterior inferior iliac spine just by palpation. So mostly I'm letting my finger guide me. I can feel the anterior hip capsule. Now I put a Cobra retractor lateral to the hip capsule. And as we look here now, the origin of the rectus femoris is right here.

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J. BOHANNON MASON, MD: All right We can see that well.

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JOEL M. MATTA, MD: Okay. And this is the tensor fasciae latae muscle. I'm going to take this key elevator and put it just posterior to the origin of the tensor of the...excuse me, rectus femoris.

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J. BOHANNON MASON, MD: So you're right on top of the hip capsule at that juncture.

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JOEL M. MATTA, MD: Yeah. Right anterior to the hip capsule. Now I'm going to take another Cobra retractor and I'm going to slide it under the rectus. I'm also elevating a few fibers of the [iliopsoas?] as I do that. I'm going to just kind of tease the fascia lata a little bit off the tensor fascia lata distal and retract that. But now you can see here's the...Can I have a tonsil clamp, please? Here we have the anterior hip capsule right here.

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J. BOHANNON MASON, MD: Excellent.

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JOEL M. MATTA, MD: So this is...I always describe this as the easiest approach to the hip, actually, in which we have the capsule exposed in just a few minutes. We're going to get...enhance our exposure now by dissecting a little bit distally. And you can see this little vessel right here? That's the venous portion of the...

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J. BOHANNON MASON, MD: Lateral femoral circumflex.

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JOEL M. MATTA, MD: Yeah, the lateral femoral circumflex vessels. Okay. So now we can take...We're going to use this...[Aquamantis?] bipolar cautery here some during the procedure to cauterize both sides of the vessel. I'm going to cut the vessels here. Sometimes there's several branches. Once in a while we miss one. You can see a little cut end of the vessel here, can't you?

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J. BOHANNON MASON, MD: Um hmm.

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JOEL M. MATTA, MD: Okay, so we're going to just----

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J. BOHANNON MASON, MD: I think it's an important point for people who are looking at this approach to make sure you take your time at this step. That you can lose a lot of blood if you don't.

00:13:01

JOEL M. MATTA, MD: Yeah. There's a little fascial layer here further I'm going to cut, just to get a little more access to the capsule. Now, you're starting to see some fibers down here of the vastus lateralis muscle. There's another fascial band...Could I have an Army retractor? Do you have one? And we're going to just make...put in a couple extra retractors to help you see, but there's a little fascial band right in here, okay?

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J. BOHANNON MASON, MD: Um hmm.

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JOEL M. MATTA, MD: I think we can see it now. This little aponeurotic fascial band, which runs along the posterior part of the tensor. And if I just cut that, it gives me just a little more mobility of the tensor. So we have to be careful with the tensor all the time not to injure it. But you can see...Could we have a little bigger view on the field, please? Okay, there we go. You can see we're retracting the tensor. Now we're getting a good view.

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J. BOHANNON MASON, MD: So you...Here you've got the fat that's over the top of the anterior aspect of the neck, and you've got a retractor above the neck and a retractor below the neck.

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JOEL M. MATTA, MD: Yeah, right. Either superior or...We can take this out we put there. They have our surgical team here. I'm being assisted by Dr. Nick [Maas?], that's my fellow. Tanya is my physician assistant. Shaq is the scrub tech. And we have [Sahela?]; she's taking care of the x-ray. And Cassandra and Alvin are helping out as RNs in the room. But the typical team you can do this very well with is one surgical assistant, the x-ray tech, scrub tech and then the circulating nurse. The circulating nurse can operate the table.

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Okay, now that we have good capsular exposure, I'm going to cut the capsule parallel...Could you suction a little bit on that?...parallel to the anterior lateral neck. So I'm cutting into....

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J. BOHANNON MASON, MD: So on the...on a clock face, Joel, if you would tell us where that...where that cut is. Is it up at about eleven o'clock, twelve o'clock?

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JOEL M. MATTA, MD: Yeah. Right about eleven o'clock.

J. BOHANNON MASON, MD: Okay.

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JOEL M. MATTA, MD: I think that's good. I sort of think of if we think of the capsule as a lateral capsule, an anterior capsule, or you could call it the superior capsule, it's kind of where we'd have the junction between the lateral or superior capsule and the anterior capsule.

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J. BOHANNON MASON, MD: Excellent.

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JOEL M. MATTA, MD: So it's coming down to the...coming down to the base of the neck. Yes?

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J. BOHANNON MASON, MD: Do you come all the way to this intertrochanteric line there?
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JOEL M. MATTA, MD: Yes, we do. We...And one of the things I have to see is that lateral shoulder or saddle of the neck, if you will. The place where the lateral portion of the neck joins the tip of the greater trochanter.

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J. BOHANNON MASON, MD: Are there particular femoral anatomies that give you more trouble with this...this aspect of the surgery than others?

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JOEL M. MATTA, MD: Well, with this surgery sometimes femoral exposures, if you have a very short femoral neck, this can be more difficult. And the extreme cases, for instance, as a...an old Perthes or CDH set, an old CDH in which there was a necrosis. But usually a variety of neck anatomies can be acommonated...accommodated. A valgus neck, a varus neck. It's not any marked difficult...difficulties, I don't think, with the different neck anatomies.

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I'm going to put a suture tag in this anterior capsule, the lateral edge of it. We're going to use this to retract the capsule, so I'm doing a capsulotomy. I'm not doing a capsulectomy and taking the whole capsule out. And so this is the anterior one. I've already started taking it off the base of the neck a little bit. I'm going to put this around the anterior neck. Okay, we can start to see the neck now. I think you can...you can zoom in a little bit. Yeah, that's probably better. Okay.

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Okay. So we're seeing a little bit across the base of the neck. I'm going to take the cautery knife here, the Bovie, and detach a little more capsule from the intertrochanteric line area. I'm getting a little bleeder here from the surface of the base of the neck. I'll see if I can quiet that down, but...that looks better.

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J. BOHANNON MASON, MD: That's that perforating vessel that...

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JOEL M. MATTA, MD: Yeah, it's a little perforating vessel on the anterior neck, which I'm sure you see when you do this procedure also.

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J. BOHANNON MASON, MD: Well, Joel, you're trying to just get a little bit more exposure inferiorly for visualization, for mobilization? What's...what's the...what's the purpose?

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JOEL M. MATTA, MD: Yeah. We...we need to detach the anterior capsule from the base of the neck in order to get visualization and also mobility of the femur for access for placing the femoral component later in the procedure. Now I'm putting a tag suture into this lateral capsule area. Okay. So this is going to go around the lateral portion of the head. Now I think we're starting to see...you can see the head up here.

J. BOHANNON MASON, MD: Um hmm.

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JOEL M. MATTA, MD: We can see the labrum. It's going to be right in this area. We're going to have to...We'll get another retractor. Could we have a small Homan? I just like to slide this... the tip of the small Homan under the anterior capsule, and I try to get it over the anterior rim. Sometimes I think it will sit on the head, but that...

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J. BOHANNON MASON, MD: So that's...you're trying there also to get the ...the rectus pulled back?

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JOEL M. MATTA, MD: Yeah. Some of the rectus is being...Can I have the pickups, please? Thank you. So as we look at here we can see the labrum now, okay?

J. BOHANNON MASON, MD: Yeah.

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JOEL M. MATTA, MD: And so what we want to see is actually the bony rim of...of the acetabulum. And...

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J. BOHANNON MASON, MD: If there's a chance, we could drop our camera angle down just a little bit to look...

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JOEL M. MATTA, MD: Could we turn on the arthroscopy camera, please?

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J. BOHANNON MASON, MD: There we go.

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JOEL M. MATTA, MD: We're going to turn on a laparoscopic camera and we're going to get a... just kind of like a direct view into the wound, and we'll see how that looks.

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J. BOHANNON MASON, MD: That's good.

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JOEL M. MATTA, MD: This is going to be a zero degree angle neck, so....

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J. BOHANNON MASON, MD: Yeah, we can see through the large picture actually pretty well.

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JOEL M. MATTA, MD: Okay. So there's the arthroscopic one. So here's the rim of the acetabulum and here's the head. Could we have some traction, Cassandra? So she's going to count...

CASSANDRA: One, two, three.

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JOEL M. MATTA, MD: Okay. Three turns of traction. You see we have a little gap.

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J. BOHANNON MASON, MD: A separation there then.

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JOEL M. MATTA, MD: Yeah. Okay. And do you have the skid here? We're going to take a look and see if the skid will slide in here now, the femoral skid.

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J. BOHANNON MASON, MD: Now you're going to...you're going to actually dislocate this hip at this juncture, is that correct?

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JOEL M. MATTA, MD: Yeah. In just a second. I just kind of was freeing up the...the head from...the head from roof. So first the skid goes between the head and the roof. Okay, take two turns of traction off, please. We can go...we can go back to the overhead camera, I think. Okay?

J. BOHANNON MASON, MD: Um hmm.

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JOEL M. MATTA, MD: So if we look at that, I'm going to slide around the head medial. I'm going to go between the head and the anterior rim. Okay. Now we can see this is round. We're okay now. Could I have the corkscrew, please? Okay, now I have a femoral head corkscrew. Could we get a little bigger picture, please? So we have this...So we have that on a motor. Bigger picture. Can you get a big...bigger picture?

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On the overhead, that's good. Okay. So we have...This has gone into the anterior head. You can move your hand Tanya. So I have this. Now we're going to unlock the rotation on the table so we don't put any torque on the leg. I'm simply going to pull the head out, you see, to dislocate. Okay?

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J. BOHANNON MASON, MD: Excellent. Excellent
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JOEL M. MATTA, MD: Okay. So now....

J. BOHANNON MASON, MD: And Joel, in your---
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JOEL M. MATTA, MD: Can we externally rotate a little more, Cassandra? External and lock it. Okay, good.

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J. BOHANNON MASON, MD: So you have three turns of traction there and then external rotation.

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JOEL M. MATTA, MD: Yeah, we took off some traction, actually, now. Didn't we? Yeah. Okay. Take two turns off. Usually we have....Yeah, we did. Okay. One on then? Okay. So usually what we'll do, we'll put on about three turns of traction initially...Can we go back? Initially to put the skid between the head and the roof of the acetabulum. Why don't we look at the overhead camera. It might be good. So, we'll put about three turns of traction to put a skid between the head and the roof.

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J. BOHANNON MASON, MD: Um hmm.

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JOEL M. MATTA, MD: Then I'll take off a couple turns and then I'll...I'll put the skid around medially and dislocate it. Okay? So now we're going to expose the lesser trochanter and I'm going to protect...This is the vastus lateralis origin. I'm sliding the small Homan under it. I'm going to lift this up. You may not be able to see the...the lesser trochanter from your angle, but...but here's some capsule on the medial neck. You can see that...

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J. BOHANNON MASON, MD: We've got a good look at the capsule there and can see that you're coming down onto the neck.

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JOEL M. MATTA, MD: Yeah, I'm coming down distally on the neck right here. I'm going a little bit out of the side to field the view. I'm going kind of underneath the vastus and from where I am...Do you have the arthroscopic camera again? Here, give it to me, Nick..

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J. BOHANNON MASON, MD: If you can show us the...I'm sure you can see the lesser trochanter.

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JOEL M. MATTA, MD: Okay. Can we see that now?

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J. BOHANNON MASON, MD: Oh, that's a very nice view.

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JOEL M. MATTA, MD: Yeah. SO right down here is the lesser trochanter. You see?

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J. BOHANNON MASON, MD: Excellent.

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JOEL M. MATTA, MD: Okay, so we can see that down in...in there. And we have...there's just a tiny bit of bleeding going on down there. I'm trying to use this bipolar again just to try to...This is kind of...You get some sneaky bleeders around this inferior neck where you've detached a little capsule from the neck. But what we're doing here now, really, is we're just kind of setting up the femur for our later...later work on that by getting some mobility.

Okay, internally rotate please. Okay. And can I have a Cobra? Okay. So now we've put the head back. You can see the head and neck. We're going to get ready to cut the neck, okay?

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J. BOHANNON MASON, MD: How do you make this determination about your neck cut, neck resection level?

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JOEL M. MATTA, MD: Well, we've gone...What we've done is we're going off her template, the preoperative template. And we can see on the preoperative template that most often the lateral portion of the neck cut comes here near the lateral shoulder of the neck, where it joins the great...greater trochanter.

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J. BOHANNON MASON, MD: Okay.

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JOEL M. MATTA, MD: So I'll use that...usually as my indicator for the neck cut. Okay, now we're going to use this Homan to protect the tensor so the side of the saw doesn't [inaudible]. Okay. And I'm aiming in a medial direction, because I don't want the excursion of the saw to contact the greater trochanter and possibly damage the greater [inaudible].

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J. BOHANNON MASON, MD: So you'll complete that with an osteotome, or...

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JOEL M. MATTA, MD: Yeah. So I have an osteotome coming in here. The blade is parallel to the long axis of the body and it's going to get this little bridge of bone between the trochanter and the base of the neck. Okay. And so...Can we have a suction in here? So I'm going to cut that.

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J. BOHANNON MASON, MD: And just a reminder to our audience, you're...you're at neutral rotation at this time.

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JOEL M. MATTA, MD: Neutral rotation. And so I'm tapping on the posterior cortex. There, now we can see the head move a little bit. So we've done that. I'm going to turn...rotate the head so I can bring out the round part first. I don't want to tear any of the muscle tissue with the sharp neck edges as I bring out the head. Here's the head of the femur we have with the neck cut, okay? So here's her area where there's no cartilage on that, the top of the head.

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J. BOHANNON MASON, MD: Hmm. Yeah.

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JOEL M. MATTA, MD: All right. Now we're going to externally rotate the hip about forty-five degrees. Okay, I'm going to put a retractor...We're pulling up...Tanya's pulling up on the anterior hip capsule. I'm putting this retractor over the inferior part of the anterior rim. We're going to---

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J. BOHANNON MASON, MD: And that's just a bent Homan you have going in there?

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JOEL M. MATTA, MD: It's a bent Homan. Now we're going to put a Cobra retractor, kind of over the mid-portion of the posterior rim. So the tip goes outside the labrum but inside the capsule.

J. BOHANNON MASON, MD: All right.

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JOEL M. MATTA, MD: Now we're going to go back to that arthroscopic view. So you can see we're just going to use the hand held camera here in the wound, the sterile camera, so you can see along with us what it looks like. Could...We're going to...Okay, so here's our acetabular view. Maybe...Yeah, back away just a little bit, Nick. Good. Okay, we can see the acetabulum. This is going to be a band of capsule. Can we show that a little bit. Come

a little bit here. So we have a band of inferior capsule, which is always a little bit in the way.

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J. BOHANNON MASON, MD: And that's tense because your femur is pushed posteriorly.

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JOEL M. MATTA, MD: It probably is, yeah. So I'm going to cut this transversely, just to make a little release. You could excise some of it if you wanted to. It looks like we got a little bit of...

Do you want to keep showing that camera, Nick. Okay. So now...Okay, let me have the knife and pickups. Now we have some residual labrum. I'm going to come in here, I'm going to cut off...

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J. BOHANNON MASON, MD: It certainly, as you're doing this approach for the first...first time, taking a look at the acetabulum with the patient in a...in a supine position is a little different.

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JOEL M. MATTA, MD: It is, definitely. Right.

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J. BOHANNON MASON, MD: Are there any tricks that you would share with us with regard to how you position your reamers when you...when you do get in there?

JOEL M. MATTA, MD: Yeah.

J. BOHANNON MASON, MD: That would be nice when you get to that point.

00:28:36

JOEL M. MATTA, MD: Yeah. I will show you that as we get going with the reamers. The main thing is to go a little bit anterior to posterior. And...But, if you consider the history of hip replacement, it began with both [Juday?] and Charnley in the supine position. And they put the patient supine so they knew where the pelvis was. I think people went away from Charnley's approach because of problems with the trochanteric osteotomy. And they went posterior, but then they had to put the patient lateral and it's really a disadvantage to have the patient lateral. It's actually more disorienting, I think. And it's....

00:29:14

J. BOHANNON MASON, MD: There may be more pelvic motion as well.

00:29:16

JOEL M. MATTA, MD: There's more pelvic motion. It's harder to get the acetabular component in right. So, once you reintroduce...Can I have the pickups? Reintroduce yourself to the supine position, it really becomes easier to get the parts in correctly. To get the leg length right, the acetabulum in right. Okay. So I will...normally here we're going to take our reamer coming in. As you can see, we've got very good visualization of the acetabulum. Come up here. We can see the...Come in a little closer then, Nick. We can see the reamer in the acetabulum.

00:29:50

I'm going to aim...I'm aiming a little anterior to posterior. A little proximal. Not very proximal. I'm just going to take it out and see how deep I am. We should go a little more. We have that... still that fat in the acetabular fossa. Now we're getting down there a little bit better, to the floor of the acetabulum.

00:30:18

J. BOHANNON MASON, MD: These first...these first reamings you're doing without... without any [unintelligible], just under direct visualization....

00:30:24

JOEL M. MATTA, MD: Yeah.

00:30:25

J. BOHANNON MASON, MD: Joel, how can you determine the thickness of your posterior column or anterior column when you...with an approach that...that doesn't really take down the capsule posteriorly? Do you ever...have you ever run into any issues with that?

00:30:38

JOEL M. MATTA, MD: The post...the anterior seems a little more in danger, you know. You can...you can actually...you can cut off the labrum or detach the capsule if you want and feel around the back if you need to. But we haven't even started to ream the rim yet. You see, here's our reaming medially.

J. BOHANNON MASON, MD: Um hmm.

00:30:55

JOEL M. MATTA, MD: And the anterior thickness is actually more in danger and easier to feel. But, we're going to change to...We started with a small reamer, just forty-two. We're going to start going up here now. We have a...What do we have Shaq? Forty-four, okay. Okay. So I just wanted to get...Medial, we're going to...One of the things I'm going to look for as we go along, sometimes you trigger some bleeding from the obturator portion of the vessel. This looks pretty dry here, except for the bone.

00:31:38

Okay. Now I'm going to...Do we have the six? Forty-six. Okay. So we may be using a...a forty-eight or fifty cup. At this point, I'm going to make a check with the image intensifier.

00:31:58

J. BOHANNON MASON, MD: So you believe...You're...you're one or two sizes below what you feel like your implant----

00:32:02

JOEL M. MATTA, MD: Right. Right. And I like to see how deep I'm reaming. Can we have a little bigger view? Nick, could you hold the reamer a second? So I can feel the anterior superior spine. She feels quite level, but I'll make a check...I'm going to raise the table a little bit, please? Doctor [Goh?]. Doctor, go up a little bit. Okay. Dr. [Goh?] is our anesthesiologist. X-ray.

00:32:27

Now, get in a position you can see the x-ray for our hand held camera. Hand held cameraman. Get where you can see the x-ray screen. Okay. So we're going to...I'm going to check now to see that the pelvis is level. And this is all part of getting our cup in as accurate as possible. In and out toward me a little bit, [Sahela?].

00:32:54

J. BOHANNON MASON, MD: Well, this is---

00:32:54

JOEL M. MATTA, MD MD: Okay. Lower the table just a little, Adam. Good.

00:32:57

J. BOHANNON MASON, MD: Now it's in just another area where this differs from a standard hip replacement surgery.

00:33:03

JOEL M. MATTA, MD: Yeah. I guess I...Now we can see...Okay, rotate the picture a little clockwise. A little more. A little clockwise. Okay. So we're going to make the pelvis look level. What I want to do is get this cup in as accurate as possible. In and out toward you just a little. [Sahela?]. Okay. Good. x-ray. Now we can see the coccyx is pointing almost right at the symphysis. Adam, could you tilt the table away from me just slightly, just a tiny bit?

00:33:40

J. BOHANNON MASON, MD: So you're looking here to try to make sure the obturator foramen is identical?

00:33:45

JOEL M. MATTA, MD: Yeah. We're going to make them...And we see the coccyx pointed to the symphysis, so we have the pelvis level. Okay, can I take a look here, Nick? Okay.

Now the... We're going to...In and out toward me. We can look...x-ray. Okay. Now we can see our...our reaming here, if you want to. X-ray. Okay. X-ray. X-ray. Okay.

00:34:16

So this is...You can do this or not do this, as you wish. The...actually----

00:34:23

J. BOHANNON MASON, MD: It gives you a very good accurate position of where...where you're reaming.

00:34:26

JOEL M. MATTA, MD: Yeah. Probably on a standard anatomy case like this, it's not so critical. But if we are going to do something like a CDH, something with acetabular problems, this can be very useful to see where the...the reaming is.

00:34:44

J. BOHANNON MASON, MD: Reconstruct your...your true acetabulum.

00:34:47

JOEL M. MATTA, MD: Yeah. That was a forty-six reamer we're putting....One of the things I like to do is...is make sure we have...Let's...let's have the forty-eight and we'll have a forty-eight cup. I want to make sure that the cup is going to be inside the rim of the acetabulum so I don't get, for instance, the iliopsoas tendon impingement. X-ray.

00:35:12

J. BOHANNON MASON, MD: Um hmm. Anteriorly.

00:35:16

JOEL M. MATTA, MD: Okay. X-ray.

00:35:18

J. BOHANNON MASON, MD: So you're going to...you're going to ream line to line here.

00:35:21

JOEL M. MATTA, MD: Right. And just...I'm not reaming very much. You see, I'm just feeling to where the resistance breaks free. X-ray. X-ray. And make sure it's seated. So, I think we're... we're pretty well down here. I don't want to really ream more.

00:35:39

J. BOHANNON MASON, MD: Talk to me about your cup selection. What...what do you plan to put in and what type of cut do you...are you going to use? Are you going to use screws?

00:35:47

JOEL M. MATTA, MD: I'm not going to use screws. You know, this is...this is a DePuy Pentacle Cup. This particular one we're going to have a metal insert. And we're going to have a twenty-eight millimeter liner. So she has a relatively small external diameter to her acetabulum. The...

00:36:16

J. BOHANNON MASON, MD: Say, one of the things I really like here, Joel, is that you're able to use a straight reamer, for straight inline, good control.

00:36:23

JOEL M. MATTA, MD: Okay. Could we just have the overhead picture a second. Yeah, we can use a straight reamer. So here's our cup. We're going to use a curved insertion handle. And, so I have it tightened on there. Not too tight. I'm going to...okay. Okay, now we're going to...One of the things we'll...we'll see on this is that this insertion handle is a little more parallel to the patient, a little more parallel to the floor than you might think initially.

00:36:55

X-ray. And now we can see maybe I have it a little too horizontal. I overdid that what I said I was doing. X-ray.

00:37:02

J. BOHANNON MASON, MD: And you're shooting...shooting for about forty-five degrees.

00:37:06

JOEL M. MATTA, MD: Yeah. I go for forty, forty-five degrees inclination.

00:37:09

J. BOHANNON MASON, MD: Any difference in the anteversion that you're going to add with an anterior approach versus a posterior approach?

00:37:14

JOEL M. MATTA, MD: Well, I usually go for about twenty, twenty-five degrees, something like that.

00:37:18

J. BOHANNON MASON, MD: And you judge that strictly from the radiographic appearance of the opening, or...?

00:37:22

JOEL M. MATTA, MD: That's correct. X-ray. So we're going to look at the formation, the ellipse that the cup...x-ray. So you can see even with this line to line there's still a fair amount of resistance to the...x-ray. Okay. So you can see it's just kind of going down. I'm trying to get the orientation good before I do the final seating. Side to side just a little bit. Side to side on the x-ray. Okay, good.

00:37:58

J. BOHANNON MASON, MD: Yeah, with the...the newer cups that they also have with the---

00:38:02

JOEL M. MATTA, MD: X-ray. Yes?

00:38:03

J. BOHANNON MASON, MD: ----with the gription, what's with the...the porous coating that's...has a little bit higher frictional coefficient you can really get some grab with those cups.

00:38:13

JOEL M. MATTA, MD: Yeah, this one really does. X-ray. So I've got a heavy hammer. I'm hitting it pretty hard, really, to get it in. But I like that position. I like the...and I think it's well seated. Sometimes there could be a...a little bit of gap right at the apex of the cup, but I don't worry about that.

00:38:32

J. BOHANNON MASON, MD: No. No, that's----

00:38:33

JOEL M. MATTA, MD: I think that's fine, because when we see the patient at follow-up it'll be ingrown. So I'm going to loosen this now. I'll just take the handle off. X-ray. Save that for the record, because the problem is once we get the metal liner in you won't see the ellipse or the anteversion, so we make a record of this. Okay, take the image out.

00:38:57

And why don't we...We have our overhead view. I'm putting in the acetabular retractors. And probably the arthroscopic camera would be nice now. Take a look at the acetabulum. You may have to...There we...Okay, good. We're taking this bolt, this short bolt off, which is used for insertion here.

00:39:31

J. BOHANNON MASON, MD: We've got to get you the newer one of those, Joel.

00:39:32

JOEL M. MATTA, MD: Okay. Get me up to speed here, okay. Okay, so there is a...What you're seeing, Bo, that we have a...there's a newer curved insertion handle available that...

00:39:47

J. BOHANNON MASON, MD: That take...makes the [cocher?] obsolete.

00:39:49

JOEL M. MATTA, MD: Makes the what?

00:39:51

J. BOHANNON MASON, MD: The [cocher?] obsolete.

00:39:52

JOEL M. MATTA, MD: All right Good. I'm...I'm happy to get rid of it. Okay, let's...let's relax that a little bit. Okay. Can we have a little suction. Okay, we're going to be putting in now... Nick, could you give us another view with the...Okay, do you have the liner now? Okay, sometimes this...We have to be certain the liner is aligned, so to speak.

00:40:34

J. BOHANNON MASON, MD: Yeah, it's trying to...trying to impact some of those things when they're slightly canted can make your day long.

00:40:40

JOEL M. MATTA, MD MD: Can I have the tonsil clamp, please? Yeah, it can be. It's my motor skills exam for the case here. So a combination, usually manipulating with a little clamp. Do you want to take a look again, Nick? A little clamp here in the---

00:41:00

J. BOHANNON MASON, MD: Joel, while you're doing that, talk to us a little bit about how big of a transition you think it is for...for surgeons to switch from a posterior to an anterior approach.

00:41:09

JOEL M. MATTA, MD: Well, yeah. Most of the surgeons doing anterior approach now did come...do come from a posterior approach, because posterior approach is the most popular, I would say, worldwide, US, Western Europe and probably other parts of the world too. So, it can be a significant change for people. I guess...you're looking at the hip from a different angle. Simple thing...It is relatively simple, like just getting the neck cut from anterior correct can be something to learn. But I think it is very learnable. I mean even after about ten cases a lot of these surgeons are doing quite well with the anterior approach.

00:41:53

Could we get another picture through the laparoscopic camera just to show the cup? Okay, here we are.

00:41:59

J. BOHANNON MASON, MD: Excellent.

00:42:00

JOEL M. MATTA, MD: So it's fully seated. We can see that it's...it's down below the rim of the acetabulum, so we won't get that iliopsoas tendon impingement, okay?

00:42:08

J. BOHANNON MASON, MD: That twenty-eight millimeter hard bearing.

00:42:10

JOEL M. MATTA, MD: That's what we're using here. Okay. And it's just according to her size, but the dislocation rate has been very low; two-tenths of one percent, over thirteen hundred cases. So, only three dislocations. No recurrent dislocations, so I'm not----

00:42:27

J. BOHANNON MASON, MD: And compares rather favorably to Phillip's Paper of 3.9 in the Medicare database for a posterior approach.

00:42:34

JOEL M. MATTA, MD: Yeah. So it's about one-twentieth of what was reported on the Medicare database as far as...and we have no recurrent dislocators. So that...or, no revisions for dislocation, so far anyway. So, I don't get so wound up about having to get the biggest possible head in. Here's the hook that's going to go behind the femur to help with the exposure.

00:42:55

J. BOHANNON MASON, MD: A left and a right?

00:42:57

JOEL M. MATTA, MD: A left and a right. So internally rotate. So we're going to internally rotate. This is kind of an offset hook for the left hip. I'm going to palpate....The hip's in neutral rotation. I palpate the vastus tubercle. It goes just distal to it. Just going around the posterior femur. Unlock the gross traction now. Now we have no traction at all for the

rest of the case. We'll externally rotate. Externally rotating the hip. That's a nice shot. Okay., lock that please.

00:43:25

J. BOHANNON MASON, MD: How far do you have that externally rotated at that juncture?

00:43:27

JOEL M. MATTA, MD: Well, we have the femur ninety degrees out. I can feel the kneecap pointing straight to the side. And then the foot is actually pointed down a little bit toward the floor, because of knee ligament, ankle ligament laxity. Okay, now we're going to extend and adduct the extremity by...Cassandra is going to drop the spar all the way to the floor, slide it under the other side. Now we can...Can you see that, the little bigger picture down at the end?

00:43:53

J. BOHANNON MASON, MD: Yeah, it's an excellent view.

00:43:54

JOEL M. MATTA, MD: Okay. So this is going to be to extend and adduct the hip. Now if we go back to the overhead, we can show that I'm going to put a retractor...this Cobra retractor along the posterior cortex of the femur, which is medial away from me.

J. BOHANNON MASON, MD: Um hmm.

00:44:14

JOEL M. MATTA, MD: We're going to take another retractor over the tip of the greater troch, which is going to go outside the hip capsule. And then I'm going to put the hook in this....Little bigger picture, please. Bigger picture. Bigger. Okay, there. The hook is going to go...lock into this bracket attached to the table. And I'm stepping on the foot pedal, so the motor is raising this up.

00:44:40

J. BOHANNON MASON, MD: Tell me about...tell me about trochanteric fractures. Tell me about how much pressure you want to put on that hook as you bring it up.

00:44:47

JOEL M. MATTA, MD: Well, we want to...Yeah. We don't want to....This hook has no feeling. It's a strong jack. We could evulse the trochanter with too much pressure, so I always want to be able to lift it a little bit higher manually than the hook is holding it. So think of the hook as something that just holds the femur in position; not as something that's really putting a strong traction on it. Can we have a knife and pickups. We have a little residual bone here from the neck cut. Just yell at me if my head gets in the way here.

00:45:16

J. BOHANNON MASON, MD: All right. We've got a beautiful picture. If we could come down just a little bit. There we go.

00:45:18

JOEL M. MATTA, MD: Yeah, let's zoom in a little bit now. That's a good idea. Thank you. Okay, so we're going to...Here's a little just residual bone laying around here from the neck cut. But we're going...working on getting our femoral exposure. So, I'll just point with the knife here. Here's the calcar. Here's the anterior cortex. Here's the posterior cortex. So the calcar points anterior up now, because the femur's externally rotated, probably about eighty degrees. Not quite ninety. Right here...Do you have enough light to see this, this lateral capsule right there?

00:45:56

J. BOHANNON MASON, MD: Yeah. If you could...Maybe if we could get the other camera to take a look at that, that would be wonderful.

00:46:01

JOEL M. MATTA, MD: Okay. So, let's just focus the light in here a little too. Okay. So right here is the lateral capsule. Get the suction back in there. Okay, here's the lateral capsule...

J. BOHANNON MASON, MD: Um hmm.

00:46:17

JOEL M. MATTA, MD: ...attached to the inside of the greater troch.

J. BOHANNON MASON, MD: Okay.

00:46:20

JOEL M. MATTA, MD: I think the overhead camera is going to be better, actually.

00:46:22

J. BOHANNON MASON, MD: Yeah, I think it is, actually.

00:46:24

JOEL M. MATTA, MD: Okay. Here is...The overhead camera, please. Okay. Here's the lateral capsule attached to the inside of the trochanter. And I'm going to...You see, I'm starting to detach it from the inside of the trochanter.

00:46:38

J. BOHANNON MASON, MD: Now you're coming into the...into the piriformis fossa

00:46:43

JOEL M. MATTA, MD: Yeah. It's...Yes, it is. Okay, so...Could I have a...I'm going to pull a little tension here. You can see the...This retractor here perforated into the minimus muscle a little bit. So I'm going to change that in just a second after I detach the capsule. Sometimes there's some residual retinacular vessels here.

00:47:10

J. BOHANNON MASON, MD: Can you actually visualize the piriformis here?

00:47:13

JOEL M. MATTA, MD: Yeah. Just give me a second here and we'll see what we can see as far as the tendons, okay?

J. BOHANNON MASON, MD: All right.

00:47:19

JOEL M. MATTA, MD: So, I'm going to put this a little closer to the tip now. So if we look at the tip...Can I have a tonsil clamp please? The piriformis and obturator internus tendons come from the anterior part of the greater trochanter. And usually the piriformis tendon is right in here, the origin. It's...it's heading superior from the anterior greater troch. And the obturator internus tendon goes in this direction, there.

00:47:49

The obturator externus, which is the most important anti-dislocator, is typically down right about this region back here. I don't have a good view of that because it's underneath the obturator internus. Could I have a ronger? Is that...Can you see those?

00:48:04

J. BOHANNON MASON, MD: Yeah, we can see those well. And I guess I'd be interested if you could say...You know, this is a wonderful exposure, but say you have a very tight exposure.

JOEL M. MATTA, MD: Right.

00:48:14

J. BOHANNON MASON, MD: What...Tell...Tell us...Go through some of the tricks, if you will.

00:48:16

JOEL M. MATTA, MD: Yeah. Yeah. The first thing I did, I just did for...to get exposure is to release the anterior portion of the hip capsule, okay? I mean, the lateral portion of the hip capsule from the inside of the greater troch. This...this woman has a little bit of a varus femoral neck and it's also...the trochanter is in a little bit of a varus position. Could I have a knife, please, and pickups?

00:48:44

Now we have some fibers here that are capsule, maybe some beginning of the obturator internus tendon right here. You see I'm cutting that?

J. BOHANNON MASON, MD: Um hmm. Yep.

00:48:55

JOEL M. MATTA, MD: And so, I want to see more of the inside of the greater troch, okay? So I'm going to make a cut along the inside of the greater troch. This is the inner...the inner surface of the greater troch here.

J. BOHANNON MASON, MD: All right.

00:49:09

JOEL M. MATTA, MD: But as I see that, that....that allows me more mobility so I can pull the femur. You see it came a little lateral?

00:49:18

J. BOHANNON MASON, MD: Oh, very good. Very good.

00:49:19

JOEL M. MATTA, MD: Okay. Now you see, here's the piriformis up here. Do you see that?

00:49:23

J. BOHANNON MASON, MD: Yeah, we've got a good view of that.

00:49:24

JOEL M. MATTA, MD: See the piriformis right on top of the trochanter? So what I think...I've got to release part of the capsule and part of obturator internus tendon. The obturator externus is coming into view right there. Do you see that? Here's the obturator externus.

00:49:41

J. BOHANNON MASON, MD: We see that, yeah.

00:49:43

JOEL M. MATTA, MD: Now, I like...I value that as having the most medial pull on the femur. Now here's some standard total hip stuff. You'd use a box osteotome. Or, you may use it, but I'm using a rongeur to get more lateral on the inside of the trochanter. We want to have our stem not in varus, of course. Sometimes a little varus on the Corail is fine, actually. I mean, a little variability in alignment, as long as it's stable. But you---

00:50:15

J. BOHANNON MASON, MD: Talk to me...You...You've used a number of stems in your experience with the anterior approach. You said along the Corail?

00:50:22

JOEL M. MATTA, MD: Yeah. I like the Corail...Is this the eight broach? Okay. As we began, we can...Can we have a little bigger view? We have a nice offset broach handle. So as it goes in, this will clear the pelvis in the anterior soft tissues, the handle will. The other thing is that there's a number of stems like this, like the trilock and this, they have a little recessed lateral shoulder. Also, this blunt tip broach is nice. Sometimes as you begin, particularly it's hard to perceive exactly which way the femoral canal is going, but this will tend to ride on the inner cortex and not perforate so it's a nice beginning.

00:51:02

J. BOHANNON MASON, MD: Excellent.

00:51:02

JOEL M. MATTA, MD: We're going to use a little different retractor here now with a concave inner surface in order to enhance the broach insertion. I'm going to start...Where the broach starts, if you zoom in a little bit now, please. Can we zoom in. Okay. We're going to look here at...Can I have a Homan, please? I'm going to put in a retractor we usually don't use, but I want you to see a little better.

00:51:30

Okay, here's the...Now we can see the calcar, right? I can see the lesser troch right down here. We probably have a little bit of a long neck cut, according to the template, but you see how the broach starts near the calcar?

J. BOHANNON MASON, MD: Yeah.

00:51:43

JOEL M. MATTA, MD: Because we don't want to perforate. And then it's going to...I'm just pushing now. I haven't hit it yet. This is the first broach and we're going to bring this

in...the proper rotation is for the plane of the broach...the plane of the broach to be parallel to the posterior cortex. Okay. And you see the posterior cortex right there. So this is going to kind of ride along the surface of the posterior cortex, go down and we templated a ten. Okay. And we'll try the...

00:52:19

J. BOHANNON MASON, MD: So this is a...this is a compaction broaching system. There's...

00:52:23

JOEL M. MATTA, MD: Correct. Yeah, cancellous bone compaction, so we're not removing cancellous bone, but simply impacting it. Now, we're just going off...This is like a normal total hip. We're going off her pre-op template. Pre-op template, this upper surface of the broach is a little below the tip of the greater troch. That's what we see here, okay? So we're going to do a trial reduction at this point. We templated the KLA neck, which has a little bit of a varus to it..

00:53:00

Could I have the hammer, please. I'll just tap this on in place here. Okay. Now we're going to... We templated the plus 1.5 head as her head length, so we're just going off her pre-op template now.

00:53:15

J. BOHANNON MASON, MD: So now you have a nine in there and you're slightly counter-sunk.

00:53:17

JOEL M. MATTA, MD: We have a ten, don't we Sahela?

J. BOHANNON MASON, MD: You've got a ten in there?

00:53:20

JOEL M. MATTA, MD: Okay. We have a ten broach. We're kind of down there. I haven't planed the calcar yet because we might find out we're too short and want to go up a broach size. Okay, now I'm going to lower...I'm lowering the hook. SO this bracket is going down. We're lowering the femur down into the wound a little bit. Can we have a little bigger view.

00:53:40

J. BOHANNON MASON, MD: And it's important, you don't have any traction on at this juncture.

00:53:43

JOEL M. MATTA, MD: No, we don't.

J. BOHANNON MASON, MD: It's just...just the weight of the leg.

00:53:44

JOEL M. MATTA, MD: We don't have any traction when it's extended. We take that...Okay, now flex the hip. Okay, flex the hip. We're bringing that up. Good. Okay. Now, could we have a hips retractor? Okay. So what Cassandra is going to do now is she's just going to reduce the hip just by pulling on it and internally rotate...Can you reduce it, Cassandra? Just pull down there, okay. Okay, the hip is reduced now. Okay? Very easy. Okay, we'll lock the rotation.

00:54:19

Now we're going to use the x-ray. I'd like...This is just your intraoperative x-ray check to see if your leg lengths are correct. And we're talking about x-ray exposure issues. The main thing when you get these like check x-rays, just stand back. Over a meter away there's very little radiation. So try to just stand back from the field. And usually the total image time for a case for me is about ten seconds, so it's not really like a femoral nailing, or something, where you get two minutes of C-arm exposure.

00:54:52

Okay. X-ray. We're going to look...Hand held on there. We're going to look at the right hip now side to side. Rotate a little clockwise. A little more.

00:55:04

J. BOHANNON MASON, MD: You're coming back down again to level your pelvis.

00:55:06

JOEL M. MATTA, MD: Unlock the rotation. Okay. All right. Okay. X-ray again. Okay. So now we...we can see the...We're going to use that right hip as a control. Let's see, it might be a little bit abducted. Why don't you abduct the left side a little bit. Okay, good. And then adduct Alpha Diva. Right side. Just...good, there we go.

00:55:37

J. BOHANNON MASON, MD: It's been a pretty dry surgery, Joel. How...Do you...How much blood do you typically lose in one of your....

00:55:42

JOEL M. MATTA, MD: Well, I think, you know, for the entire series the average is 325 cc's.

J. BOHANNON MASON, MD: Yeah, that's excellent.

00:55:47

JOEL M. MATTA, MD: But that's the average over the thirteen hundred cases. Okay. We can get some...There may a little oozing here at the end too, but it's been pretty dry so far. Okay, so put that picture on the right and print it, please. So we're going to print this image. Okay, bring the image toward me now. Okay. Now we're going to make our comparison shot. X-ray. Okay, so now we can see both hips. Okay, now unlock the rotation here. Okay, good. We're trying to get comparable rotation. X-ray. Okay.

00:56:24

J. BOHANNON MASON, MD: You can see how that---

00:56:25

JOEL M. MATTA, MD: Rotate it a little bit clockwise.

00:56:28

J. BOHANNON MASON, MD: You can see how that broach has a trochanteric relief, which really is...is helpful for...for this type of approach.

00:56:35

JOEL M. MATTA, MD: Okay. Abduct it just a little bit, Cassandra. Alpha Babe. Okay. Good, there we go. X-ray. That's how we...Okay. So what do you think?

00:56:52 J. BOHANNON MASON, MD: Looks...Tip to center...Tip to center looks pretty close from---

00:56:55

JOEL M. MATTA, MD: I think we're pretty close. It's going to be hard for me to tell what's longer or shorter from here. So we just got that going from the templates. And I think what we're talking about here is that with standard hip replacement you can do this with the...you know, templating, with feeling tissue tension, but we're going to try to get a little more accurate with the x-ray. Okay, in and out toward me. Print that one there. Can you print that before you...Okay, so we're going to print both these pictures. Now in and out toward me. Side to side. X-ray.

00:57:30

Okay, so there's our stem. We might go up one stem size, okay? Side to side.

00:57:35

J. BOHANNON MASON, MD: When you look at that broach within the femur, what do you...what are you using to judge the size of that, Joel?

00:57:42

JOEL M. MATTA, MD: The size is primarily by feel with the Corail. In and out towards you just a little. X-ray. But, you know, we can see...Just kind of experience, it normally does not fill the canal because it's cancellous impaction. But I get the feeling, because we didn't have a lot of resistance, we may be going with an eleven on her. But we're just going to...Right now I'm going to check the length. So, on the x-ray I want you to...the hand held camera. Take a look at the x-ray view box over here.

00:58:13

Okay. So we've got two prints now I've put in gloves, over my surgical gloves. So, we're going to...Here's her right hip. I'm just going to invert this. I'm going to flip this over. Are

you getting a good view on that? Okay. Zoom in a little bit, please. Can we zoom in more? Okay. Now we have the other hip that we...that we templated. I'm going to just over-lie these x-ray prints. And...

00:58:36

J. BOHANNON MASON, MD: Your offset looks great there.

00:58:37

JOEL M. MATTA, MD: Yeah. The offset is...Yeah, it's almost...Here's one of the things we can do too is that...Let's see here, do you have the marking pen? Okay. So we take a marking pen, and one of the...some of the keys...one of the keys I go off sometime is a teardrop on each hip. So I'll draw the teardrop. Let's see what we have when we over-lie it here now, okay. Teardrop looks pretty close. Okay?

00:59:09

So we can see that we're probably...from the teardrop...Yeah. I'm going to line up the pelvic landmarks this time and see how the femur looks. Line up to teardrop. The femur looks pretty good. It might be just a little bit long, you see?

J. BOHANNON MASON, MD: Um hmm.

00:59:32

JOEL M. MATTA, MD: See how we're a little long. We're on the shortest neck, so probably what we're going to do is sink the broach down a little bit and we may even still go to the next size broach on this one. But, can you see those landmarks pretty well?

00:59:44

J. BOHANNON MASON, MD: Yeah, we can see those very well.

00:59:45

JOEL M. MATTA, MD: Yeah. Okay. So we're very close now. I mean, we're maybe...it looks like about four or five millimeters long but, you know, we can...we can get it better. And I think sometimes patients have a more accurate perception of leg length discrepancies than we expect they will, so I try to get it as accurate as I can. All right, take the image, please.

01:00:12

J. BOHANNON MASON, MD: And it...certainly increasing the offset magnifies that difference in the patient's perceived...

01:00:17

JOEL M. MATTA, MD: Absolutely. I agree with you, yes. Can we dislocate the hip, please? So she's just going to pull and rotate. Okay, it's dislocated. All right. Now we can look at the overhead. Extend and adduct. She's dropping it down. Going to adduct it.

01:00:34

J. BOHANNON MASON, MD: Some people talk about putting the...the table and slide from delenberg to assist with that. Is that something that---

01:00:40

JOEL M. MATTA, MD: Yeah. I think...Yeah, it seems like I end up doing that very uncommonly. We may do it for...I think we were talking about earlier though that how some of the big muscular males that...particularly big muscular males that are also obese can be very difficult. It's a consideration, ones like that...[Ava?] retractor, please. Usually I don't have to do it, but... Okay, could we have the planer please? Okay, we're going to plane this down.

01:01:30

Okay. May I have the broach handle. Now we're going to sink this in a little bit, because we think we're a little bit long. Okay. We're down about four millimeters, which isn't too bad here.

01:01:54

J. BOHANNON MASON, MD: Are you making an effort to change that varus position slightly, or...?

01:01:58

JOEL M. MATTA, MD: I'm going to do that a little bit. It's not too important. Let me have the eleven, please.

01:02:06

J. BOHANNON MASON, MD: To jump between sizes, how much do you have to countersink your broach to be...to feel comfortable going to the next size up?

01:02:15

JOEL M. MATTA, MD: That's a good question. I don't have a number. You can get it down three, four millimeters you can probably go. But...but I also want to countersink this little bigger one too. But this is where I have to be a little careful as we're getting down further with this one. Okay.

01:02:49

Okay. That's pretty good. Let's try the KLA neck. Okay.

01:02:59

J. BOHANNON MASON, MD: KLA is your 125 degree high offset neck.

01:03:03

JOEL M. MATTA, MD: Right. Actually, taking out a varus makes a slight offset decrease too, you know. Okay, so that was just an adjustment there. Okay, flex the hip, please. Okay, can you reduce it, Cassandra? Okay, good. Okay. Unlock the rotation. Okay, good. Just about the same abduction we had?

CASSANDRA: Yes.

01:03:34

JOEL M. MATTA, MD: Okay. Bring in the image.

01:03:35

J. BOHANNON MASON, MD: Joel, there's some people around the country that are doing this without the table. Can you talk a bit....

01:03:40

JOEL M. MATTA, MD: Yeah. I think there's...To me the table is the key instrument that enhances the exposure of the femur and makes it easier on the soft tissues. X-ray. So could I do it without the table? Probably so. Could I do it with one arm tied behind my back? Probably so. But, you know, the question is kind of why if you have something that makes it much easier. Easier to get the procedure done. Easier to get the...A little abduction Alpha Babe. Easier to get the procedure done...Thank you. And also makes less stress on the soft tissue due to retractors. X-ray.

01:04:18

J. BOHANNON MASON, MD: Very controlled environment, isn't it?

01:04:20

JOEL M. MATTA, MD: Yeah. I think we should utilize it. And I think it's also a help, here we can hold in position both hips perfectly.

01:04:30

J. BOHANNON MASON, MD: How much time do you think it adds to the---

JOEL M. MATTA, MD: And that's...what?

01:04:32

J. BOHANNON MASON, MD: How much time does it think...do you think it adds to your surgical procedure?

01:04:36

JOEL M. MATTA, MD: What? Getting used to the...?

01:04:37

J. BOHANNON MASON, MD: The use of the table. No, the table itself.

01:04:38

JOEL M. MATTA, MD: Oh, the table doesn't add any time. It's an easier, quicker setup because you don't have to prep and drape the whole leg. The patient's supine. So the setup, I think it makes it quicker to do it with the table. The...You know, the...getting these...Print that please. Getting these x-ray checks intraoperatively adds a little time, but

to me it takes a lot less time than talking for hours to the patient afterwards about why their leg length isn't exactly the same. So....

01:05:07

J. BOHANNON MASON, MD: The...the learning curve on something like this, what do you think it's going to take the average surgeon to be able to become comfortable with...with the approach, with the table, with all the nuances that go on with an anterior surgical hip procedure?

01:05:26

JOEL M. MATTA, MD: Well, I think that the...Is she printing that? Okay. Okay, I think the... You know, I mean, most surgeons that do total hip commonly get fairly comfortable with this within about ten cases. And they aren't, you know, as fast as they will be or as comfortable as they will be later on, but they're...they're fairly comfortable. And it's easier to get...much easier to get comfortable with anterior approach, I think, with the table than without the orthopedic table.

01:05:56

Now we've got a nice thing. You seem, here's our teardrop lines up. Can you see that?

J. BOHANNON MASON, MD: Yeah, it looks very nice.

01:06:03

JOEL M. MATTA, MD: Am I blocking the camera here? Okay. Okay, so we have the...Let me just take a...I have to...I'll line up the pelvic landmarks. I just want to make a couple of double checks here and make sure I'm very satisfied with the anatomy. But, I know we're doing a webcast and a little bit of a timeframe, but I want to get this patient exactly right. So...I think everything looks really good.

01:06:36

So, we're going to go with these final parts. So we have the Corail. Do we have an eleven? Check. Okay, we have an eleven KLA. And then we have a plus one, twenty-eight millimeter metal on metal heads. So, this is what we're going with. Please take...take the image out. We ended up with a little more...sometimes a little more fill on the canal than we do in some cases.

01:07:05

Are we dislocated, Cassandra? Okay, good. And then extend and adduct, please. Okay, we're going to go back to our retractor. We're going to use this collared stem. Another way that surgeons can really get familiar with this approach if they don't have a high volume hip practice is by doing femoral neck either hemi-prosthesis or femoral neck fractures. Doing for femoral neck fractures, either hemi's or total hips. And they may have a higher volume of that because you can use the same approach and I think the patient will get the same benefits of a rapid recovery, less pain afterwards.

01:07:55

J. BOHANNON MASON, MD: That was one of the questions that I think people were interested in. Now that would be the ability to use larger heads with an exposure like this.

01:08:03

JOEL M. MATTA, MD: Yeah. Absolutely. I do that very frequently. We'll use the DePuy ASR, which is essentially anatomic size head. Or, we'll use thirty-six heads. Sometimes getting the head on the trunnion is...you know, you have to manipulate the femur a little bit just to get the access to get it on. But...okay.

01:08:27

I'm going to just countersink the broach a little bit, because sometimes with the collar the coding on the underside of the collar can make the actual stem slightly longer than the trial. So I'm just countersinking it down about two millimeters. I'm going to re-plane the calcar.

01:08:55

J. BOHANNON MASON, MD: Joel, I realize my...my discussion slows you up a little bit and we're...with a live broadcast, etcetera, but what...what's the time...How long does it usually take you to...to do one of these cases, get them done?

01:09:05

JOEL M. MATTA, MD: Usually...usually the parts are in...by about fifty minutes we have the parts in. And so just kind of going ahead without the...Suction...the discussion we have. So we're going to---

01:09:17

J. BOHANNON MASON, MD: Can you show us that prosthesis for just a second. We've got the...

JOEL M. MATTA, MD: I'm sorry.

01:09:20

J. BOHANNON MASON, MD: ---the Corail stem that's going in.

01:09:22

JOEL M. MATTA, MD: Here's the Corail stem right here. It's a HA-coated collared. It's been used for twenty-one years, so the surgeon adopting it can at least be confident there's an excellent long term record with this. So I'm just going to pound this down. Okay, now the suction. Okay, let me have the real head, please. Okay.

01:09:55

J. BOHANNON MASON, MD: All right.

01:09:55

JOEL M. MATTA, MD: Okay, the real head. We're going to put it on here.

J. BOHANNON MASON, MD: Excellent.

01:10:02

JOEL M. MATTA, MD: Okay. If we can have the impactor. Okay. Okay. Now we're going to...

01:10:14

J. BOHANNON MASON, MD: Now comes the interesting part. Everyone wants to know how you check for stability in a...in a case like this.

01:10:20

JOEL M. MATTA, MD: Oh, I usually don't. But you can if you want.

01:10:23

J. BOHANNON MASON, MD: All right. For those of us who are interested in...in wanting to...to test stability....

01:10:27

JOEL M. MATTA, MD: Okay. We're going to lower the hook down. Okay. Can we flex the hip now? Okay. Now, why don't we take...We're going to go to the arthroscopic camera a second. You've been watching what Cassandra does for the hip dislocation. We're going to show you in the...in the wound what the relocation looks like. Could we have a little internal rotation, please? This...Good. Okay. Now we have the suction. Can you see the head and the cup?

01:11:04

J. BOHANNON MASON, MD: I...You've got a very good picture of that.

01:11:06

JOEL M. MATTA, MD: Okay. Now, can you reduce it, Cassandra? Okay. Why did you stop showing that...We're trying to show in the wound, okay? Can you dislocate it, please? Okay. All right. Relocate it. Okay, good. Very good. Okay.

01:11:22

J. BOHANNON MASON, MD: Unbelievably controlled. Very nice.

01:11:24

JOEL M. MATTA, MD: Okay. Now just a second. The hip is fully extended, so keep showing the arthroscopic view, please. Okay, externally rotate. So she's going to external...The foot is straight out to the side now. Okay, the foot's straight to the side, so we have stability. Okay. Internal. Okay, lock it. Okay.

01:11:46

Now if you want to really move the hip around...I don't usually do it. We can...Let's hold on to this. And, Cassandra, can you unlock the foot from the table? So she's going to unlock the foot from the table.

CASSANDRA: Unlocked.

01:12:04

JOEL M. MATTA, MD: Okay. So we just...You have to unlock the black burr. Okay. Do you have the thumbscrew unlocked?

01:12:13

CASSANDRA: Everything is unlocked. It's just sticking there.

01:12:18

JOEL M. MATTA, MD: Okay. So I unhook the foot boot from the table. Now if we want, you see we can bend the hip up. I don't think we're getting a very good view of that.

Look...look at the whole table here. Show the whole...Show me. Everything going. See, I'm bending the hip. I'm just grabbing the...the leg here like this. We can bend the hip. We can rotate it. Okay. If you want to check posterior instability or palpate in the wound while you do it. We'll hook the foot up again. So there's no traction and the foot is on a free slide.

01:12:53

J. BOHANNON MASON, MD: Now are you under skeletal muscle relaxation, or not?

01:12:56

JOEL M. MATTA, MD: Yes, we are. So it's easy to check tension if you want. But, I mean, the point is...I don't want to change anything. I can see the leg length is right, so I'm not going to go off tissue tension as an indicator for length. Because we have the final answer, the x-ray. Okay?

01:13:14

J. BOHANNON MASON, MD: That looks beautiful.

01:13:16

JOEL M. MATTA, MD: Okay. So, here's...Can we have the x-ray, please?

01:13:27

J. BOHANNON MASON, MD: And, Joel, today's been a...a good day. Tell me what happens when you...when you end up with a calcar crack or a...say a...say end up with a distal femoral fracture? How...how are you going to handle that situation?

01:13:44

JOEL M. MATTA, MD: Well, a calcar crack is very easy to approach. We can just put a wire above the lesser troch if we want, or just used a collared stem. There don't...There doesn't seem to be problems further down the shaft with this stem. Using some other stems that have a broad distal portion, if you split the shaft you can just extend the incision further down and expose the shaft by reflecting the vastus lateralis anterior. Okay?

01:14:11

J. BOHANNON MASON, MD: Great.

01:14:12

JOEL M. MATTA, MD: So we're going to close. We're just going to take the image out. Print that. We're going to close by...We're going to tie these two capsular sutures together. We're going to close the fascia. We're going to tie these together, irrigate it out, close the fascia subcutaneous and skin, we're done. Okay?

01:14:29

J. BOHANNON MASON, MD: Very well done. Very well done.

01:14:31

JOEL M. MATTA, MD: Okay, thank you, Bo. Bo, are you going to say a few words to the---

01:14:37

J. BOHANNON MASON, MD: Yeah, I think we've got---

JOEL M. MATTA, MD: ---group now to wrap it up?

01:14:39

J. BOHANNON MASON, MD: We've got some of the new instruments that are...are available. This double offset...soon to be available double offset broach handle, which can make handling some of the...the more obese patients easier. And in addition, an offset impactor handle. Here is a captured calcar reamer, just to try to protect some of the soft tissue.

01:15:09

And for surgeons that are used to posterior approach and finding their canal, this is a little canal finder that can be helpful to begin coming around into the calcar and...and beginning that...the orientation process for... for placement of the...of the femoral broach.

01:15:33

Joel, if you've got a...a second and can come out and join us, we'll...So, I don't know if we still have audio with you, Joel. Can you still hear me?

01:15:45

JOEL M. MATTA, MD: Yeah. I just came back on. Sorry Bo. Okay.

01:15:47

J. BOHANNON MASON, MD: Okay. Very good. So what...If...if you look at what contraindications, or relative contraindications would you have for a patient looking at a direct anterior approach?

01:16:03

JOEL M. MATTA, MD: Excuse me. Let me take off the mask. For patients with anterior approach, probably the ones that I've had the...I have had difficulties with, is I've had some patients that I've had that had a previous acetabular fracture, particularly in operative treatment. And some of the patients have some heterotopic ossification in different areas; and with that it can be very hard to get access with some heterotopic ossification.

01:16:32

And, probably the hardest cases, I think we already mentioned, can be large muscular males, particularly if they're also obese. But, I use it...I've used it since 1996 for a consecutive unselected series of over thirteen hundred fifty primaries. And by primary I mean hips that have not been previously operated but have primary arthritis.

01:16:58

J. BOHANNON MASON, MD: Right.

01:16:59

JOEL M. MATTA, MD: So, some of the previously operated one, stuff like that, I have in another database. But, the consecutive series is of the primary hip since 1996.

01:17:09

J. BOHANNON MASON, MD: Have you seen any applicability in a revision setting?

01:17:12

JOEL M. MATTA, MD: Yeah. Certainly there's some applicability in a revision setting. Particularly for the...some of the acetabular revisions. For a surgeon who is considering trying a revision with this, probably the easiest one is the poly and head change. And I will do this even if they've had a previous posterior approach. I've had some people that have a recurrent posterior dislocation problem, for instance, after a posterior approach. And then I've gone from anterior and changed the cup from anterior, a new position, to solve the posterior dislocation problem.

01:17:46

Sometimes if you have a very well ingrown stem, you know, that's been in there for years...

J. BOHANNON MASON, MD: Yeah.

01:17:54

JOEL M. MATTA, MD: ...and you know you aren't going to be able to get that out to revise the...a cup, an anterior approach is a good way to do it. I think it's easier to get the femur out of the way from anterior. And also, the problem is if you go from posterior and you revise the cup and leave the stem in, very often you mobilize the femur so much you end up with a dislocation problem post-op.

01:18:13

J. BOHANNON MASON, MD: Yeah. Dislocation issue, yeah. Yean, I think that's true.
01:18:16

JOEL M. MATTA, MD: Yeah. And it's actually an extensile exposure to the pelvis, so you can sometimes do some real good...difficult acetabular problems from the front. Extending the incision along the iliac crest with the Smith-Peterson---
01:18:29

J. BOHANNON MASON, MD: Taking down part of the tensor.
01:18:31

JOEL M. MATTA, MD: Yeah. Part of the tensor. First you can go inside the pelvis to take a cup out that's incarcerated inside the pelvis. Then you can go around the outside of the ileum to...to rebuild the acetabulum.
01:18:42

J. BOHANNON MASON, MD: That's excellent. Well, for...for a surgeon, again, who is thinking about playing with the idea of...of moving from say posterior or direct lateral to...to a direct anterior approach, what would...what would be your sort of parting words for that particular surgeon? What would you tell him are the advantages of this approach versus the advantages of...of the approach that he's currently using?
01:19:08

JOEL M. MATTA, MD: Well, the...what's really driven this from the beginning, I think is the response of the patients. And if you talk to patients that have had previous posterior or lateral approach, even a mini-posterior approach, and then you do an anterior approach total hip on them, it's....Very often I've heard the words of patients just say, this is night and day.

J. BOHANNON MASON, MD: Yeah.
01:19:28

JOEL M. MATTA, MD: It's completely different than the other hip I had. And, why didn't you do this the first time, Doctor, on this order. So, first of all, the patients are very happy with it. Then I think there's some satisfaction the surgeon gets. You can leave the operating room. You've seen everything. You know the cup is in right, you know the leg length is right. And then the worries about a leg length discrepancy, plus worries about dislocation start going out of your mind primarily, and you leave the operating room comfortable.
01:20:01

So I think, first of all, the patients have driven this. They've built a whole lot of surgeons practices from moderate sized to big hip practices; at least the number of surgeons that I know of. And additionally, the...I think the surgeon feels very comfortable with it. It's a...it's a satisfying technique.
01:20:20

J. BOHANNON MASON, MD: Yeah. There's quite...quite a lot...It's an exciting technique for somebody who...who has just started using it and becoming comfortable with it. I think I've....I've seen some of those same...same benefits from...from the patients and really kind of look forward to studying that a little bit more. Put some science to some of those differences between what I'm accustomed to seeing with my patients and what the...what the anterior approach provides.
01:20:44

JOEL M. MATTA, MD: Yeah. I think along that...along that line, Bo, I mean, it's...You know, I've talked a lot about...I've published my results, I present my results, but it's really the results of other surgeons that's going to drive whether this continues to grow, whether this thing stays. And so, I'm always delighted when a surgeon like you is getting involved, and particularly with your background and experience, to get your impressions. And, that will be really the determinant how this stuff goes forward.
01:21:16

J. BOHANNON MASON, MD: Well, Joel, you did a spectacular job.

01:21:18

JOEL M. MATTA, MD: Thank you very much, Bo.

01:21:18

J. BOHANNON MASON, MD: It was a pleasure to watch.

JOEL M. MATTA, MD: It was fun.

01:21:20

J. BOHANNON MASON, MD: We enjoyed it. and for anyone who is interested in finding out more information about the anterior approach, you can go to the OR-Live website and reference. We have teaching centers...DePuy has some teaching centers that they have set up coming up over the next several months, so good luck. Ask question. And than you again.

01:21:39

JOEL M. MATTA, MD: And thank you for joining us.

J. BOHANNON MASON, MD: Good day.

01:21:45

NARRATOR: Thank you for watching the anterior approach for total hip replacement from St. John's Health Center in Santa Monica, California. OR-Live and DePuy Orthopedics make 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.

01:22:03

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01:22:27

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