OUTPATIENT TOTAL HIP REPLACEMENT

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Since you have progressed to the point of serious consideration of total hip replacement, there is a great deal of information that is important for you to understand. Prior to making your final decision and ultimately having your total hip replacement, it is important that you understand everything about the procedure and have realistic expectations about the results. You should understand why you are having problems with your hip and when you should make the decision to have hip replacement surgery. These expectations along with the possible complications of the procedure will allow you to decide when to proceed ahead with the operation. I also want you to understand clearly what is expected of you prior to your admission to the surgery center, during your procedure, and in the rehabilitation period after your discharge. I will try to summarize all this information for you. Certainly, if you have any questions, please feel free to contact me.

RATIONALE AND INDICATION

Total hip replacement for disorders of the hip joint has been performed for over 50 years. A rapid evolution in prosthetic design and surgical technique has occurred in the last fifteen years. The great majority of the operations are done for arthritic conditions of the hip. There are many different causes of arthritis, all of which cause a deterioration of the hip joint. The forms of arthritis include osteoarthritis, rheumatoid arthritis, ankylosing spondylitis, traumatic arthritis (related to injury), avascular necrosis or loss of blood supply to the hip joint, and arthritis secondary to congenital or developmental problems such as congenital dislocation of the hip, Perthes disease or slipped capital epiphysis. The hip joint is a ball and socket joint which moves on a very smooth surface called the articular cartilage. The articular cartilage is worn away by the arthritis process to the point that the hip joint becomes painful. The process is usually gradual and may progress for months or even years before becoming severe. As it becomes more severe, you will experience more pain and more limited function. There are many types of arthritis that cause this deterioration

of the hip joint.

A second category of causes requiring total hip replacement are those of failed previous hip surgeries. The most common is a previous hip replacement that now has failed either through loosening of the components from bone or wear of the polyethylene liner. This is called a revision total hip replacement while the initial hip replacement is called a primary total hip replacement. The third common cause for total hip replacement is in cases of fracture of the hip. Many hip fractures are managed by pin or screw fixation; but in some circumstances where the damage is quite severe, a hip replacement is required because the bone itself will not heal.

In the early stages of hip disease, the pain and loss of function may be improved by conservative means of treatment including non-steroidal anti-inflammatory agents, intra-articular injection of steroids, the use of a cane or crutches, and restriction of activity. Weight loss, if possible, can also significantly reduce the level of pain. For many medical reasons, it is best to reach and maintain your optimal weight. This weight loss is difficult and sometimes impossible with severe disease as you cannot exercise or walk very far.

At some point, the arthritic process will increase in severity and patients will have increasing pain and decreasing function which is no longer managed by conservative measures. Many patients wish to consider hip replacement at this time. The decision to perform the total hip replacement is usually based entirely on the patient's complaints. It is rare when the surgery is done on an emergent basis except in the case of fracture. There are, however, some cases where the arthritic process is so severe that it wears away or erodes the bone. Once this erosion occurs, the operation must be done in a reasonable period of time to prevent loss of bone which may compromise the optimal results.

SURGERY

The hip is a ball and socket joint that remains connected or reduced by a thin capsule and muscle tension. The ball is the femoral head of the upper end of the femur, or thigh bone. The socket is the acetabulum which is part of the pelvic bone. A hip arthropathy replaces these abnormal or worn surfaces. The femoral head is removed and replaced by a metallic head. The acetabulum is removed and replaced by a plastic in metal socket which is made of a high-density polyethylene. The metal is a strong alloy of either titanium or a combination of chromium and cobalt. A new capsule or lining forms around the joint to maintain the ball inside the socket.

A controversy that previously existed in the total hip replacement is the method of fixation of the prosthesis to the patient. Two options are available. One is the use of commercially pure acrylic bone cement called methyl-methacrylate. Early use was quite crude, and the cement fixation was actually quite weak. It was typically used in patients who were older or had very weak or osteoporotic bone. This type of fixation had been thought superior for many years but evolution in surgical technique and implants has changed this practice significantly. Current literature supports the use of a newer type of fixation which involves the patient's bone growing into a roughened or porous surface of the total hip implants. It is my belief that this type of fixation is superior, with better long-term longevity, in the majority of patients, regardless of age, bone type or gender. It is an extremely rare occasion that I would choose the use of methyl-methacrylate over bone ingrowth fixation.

A second controversial issue is that of alternative bearing surfaces, or all metal or ceramic total hip replacements. These surfaces may have some potential advantages but also have some potential pitfalls including stability, breakage and carcinogenesis.

EXPECTATIONS

Total hip replacement is very successful in terms of its main goal which is pain relief. Approximately 90 percent of people have near complete pain relief. The additional 10 percent of patients may have mild and intermittent discomfort if they overuse the hip or become too active. The same high percentage of people no longer have a limp after the surgical procedure. A limp may occur or persist even though pain relief occurs. This occurs in situations where the muscles around the hip are very weak or in cases where the postoperative exercises are not performed. Most patients do not require any assistive devices to walk, although in some cases, patients choose to use a single prong cane for safety or balance reasons. You are usually able to increase your activity level dramatically after surgery. Patients are encouraged to walk, hike, ride a bicycle or exercycle, swim and even play golf or doubles tennis. Sports that cause significant impact or twisting such as running, singles tennis or downhill skiing are not ideal.

A frequent complaint of patients in addition to pain and limp is that of shortening of the leg. This occurs as the arthritic process wears away the articular cartilage and, in some cases, even the bone itself. At the time of surgery, the leg can usually be lengthened to a point where the legs seem to be equal. But you must understand this is a secondary goal and the most important goal is pain relief and stability. Leg length discrepancy has become less common with the development of more versatile implant systems.

The final critical issue is how long the hip replacement will last. At this point we have very good information that suggests an ingrowth/non-cemented total hip replacement will last approximately twenty-five to thirty years. After many years of use and walking, the hip prosthesis can loosen from the bone or the plastic can wear out. If this occurs, and pain is present, it may be necessary to revise or re-do the hip replacement. This technically can be accomplished successfully but obviously it is best to have the initial hip replacement last as long as possible.

COMPLICATIONS

The results of total hip replacements are excellent. Therefore, there must be some reason that prevents us from performing hip replacements except in patients with significant arthritis. Complications are rare but nonetheless exist. These complications include infection, blood clot formation or thrombophlebitis, dislocation of the prosthesis ball from the socket, nerve injury, fracture and other general complications. The issues especially important to address include infection, blood clot formation and dislocation.

The chance of infection in a total hip replacement is 1 out of 200 or 0.5%. This is a very low number but, nevertheless, can occur. If this occurs, it can be very difficult problem to treat and it is often necessary to have other surgeries to remove the infection. In some cases, removal of the implant for a temporary period is required. Obviously, the best way to treat the infection is to prevent it. The surgical team uses air exhaust systems which are operating room apparel, often called spacesuits. This prevents the operating room staff from breathing on the area of your hip operation. In addition, all patients receive preventive or prophylactic antibiotics for 24 hours. This combination of techniques should lower the chance of infection. Our hospital infection rate for all primary joint replacements last year was 0.2%.

Blood clot formation/thrombophlebitis or deep venous thrombosis is the formation of a blood clot in one of the deep veins of the lower leg. This is a common complication that occurs despite all methods of prevention. There are multiple ways to try to prevent this. Early mobilization decreases blood pooling your lower extremities. We put all patients on some type of blood thinner throughout the hospitalization, dependent upon your past medical history and the medications you take. The types of blood thinners we use include aspirin (taken twice a day), Eliquis, Xarelto or Lovebox. Finally, all patients also wear sequential compression TEDS which are devices placed on both feet that massage the leg to increase blood flow, to minimize the chance of clot formation. The best result, of course, is that

you do not form a blood clot. If you did form a blood clot, it is important to know about it because it can be adequately treated. If you form a blood clot and it is not treated, there is a chance the blood clot could break loose and embolize/or move to your heart or to your lung. This could potentially be fatal. Therefore, the safest approach is: 1) attempt to prevent DVT and 2) diagnose deep vein thrombosis prior to leaving the hospital. With this protocol the incidence of blood clots following hip replacement is 4 percent.

Prior to your surgery and after your outpatient total hip procedure you will be involved in an exercise program and instructed on the postoperative hip positions that you should avoid. If you bend your hip too far, bring your knees all the way to your chest, or turn your leg in too far, there is a chance that the ball can dislocate out of the socket. This should not occur if you use a reasonable amount of caution and follow the instructions. These restrictions should be maintained for life but are most critical during the first three months after surgery while the soft tissues about the hip are healing. If this does occur it usually requires an operation where you must open the hip replacement. This is a potential complication that should be preventable. The dislocation rate for a primary hip replacement is less than 0.2%.

Because incision sizes have become significantly smaller than they were in the past, total hip replacement rarely requires blood transfusion. Because it is rare that our patients require blood transfusion, we do not suggest pre-surgery blood donation by our patients. We now routinely use medication during surgery to decrease blood loss. The use of smaller incisions and intra-operative medications help avoid the concerns of hepatitis and AIDS transmission. The chance of this occurring is exceedingly small with the estimated incidence of hepatitis transmission being 1 in 4,000 blood transfusions and AIDS being 1 in 1,000,000 transfusions. In case of a fractured hip, I will be very cautious in using any other types of blood transfusions and will always discuss this with you first. If blood transfusion becomes necessary, the blood is very carefully screened and tested for these two problems.

Other complications that might occur are rare. They are potentially associated with any major surgery and anesthesia. The potential complications include death, heart attack, heart failure, stroke, pneumonia, lung congestion, gastrointestinal problems such as nausea, vomiting, diarrhea, constipation, urinary tract infections and decubitus or bedsores, etc.

The long-term complication involves failure of the implant, as discussed in the previous section. This may occur either by either loss of fixation or mechanical loosening of one or all of the implants or by wear of the plastic polyethylene surface. Modern hip replacements should last more than twenty years.

It is advisable to stay in good physical health, avoid excessive weight gain, avoid excessive impact activities as previously noted, and exercise frequently. Although revision surgery is usually very successful, hopefully it will never be required for most patients.

PREPARATATION FOR SURGERY

Once you have made your decision to proceed with scheduling total hip replacement, you should contact our Surgery Coordinator (Heather Wilhelm) at 910-295-0275. She will help you choose a surgery date and will also schedule you for a pre-surgery appointment with one of my advanced practice professionals Michelle (Shelley) Moore (PA-C), Savannah Chappell (PA-C) or Steve Balos (NP). This pre-surgery appointment is mandatory and extremely for surgery. The time you must wait for your surgery is variable depending on the surgery schedule and your other medical conditions. We will make every attempt to schedule the surgery at your convenience. The surgery scheduler can answer many questions about preparation for surgery, the pre-operative sequence of events, and insurance matters.

It is important to have a physical examination by your primary care physician/internist and/or cardiologist (if you have ANY cardiac history) prior to your total hip replacement surgery. Since this is a serious

operation, you should be in your best medical health with all medical problems under good control. If you have had a recent physical examination, it may not be necessary to have a new examination.

Once you have discussed your upcoming hip replacement with your primary care physician and/or cardiologist they will then mail or fax the results of your examination and tests results to our office. It is preferable that these documents are received by our office prior to your pre-surgery appointment with Michelle. Savannah or Steve. Additionally, we request that your dental health be at its optimum. We must ensure that you do not have any active oral/dental infection prior to joint replacement surgery, and therefore require that you see your dentist and undergo evaluation if you have any teeth in your mouth at all. Your dentist may also mail or fax the results of your examination to our office prior to your admission to the hospital.

We will provide you with a letter to give to your primary care provider/other medical providers detailing our plans to proceed with surgery. **It is your responsibility to make certain your pre-operative primary care physician, cardiology, and dental appointments are completed prior to surgery.**

As mentioned above, at the time that Heather schedules your hip replacement, you will also be scheduled for an in depth preoperative history and physical examination with my Physician's Assistant, Michelle Moore (Shelley), Savannah Chappell, PA-C or Steve Balos. This appointment typically occurs 3-4 weeks prior to your surgery date, and we do encourage you to bring a spouse, family member or friend with you to this appointment if you would like to involve them in your care. Michelle, Savannah and Steve will be involved in your whole hip replacement experience as they are also my operative assistants during surgery, they are involved in your hospital care and will also be seeing you during various clinic follow-up visits. At your pre-surgery appointment Michelle, Savannah and Steve will ensure that you are medically and surgically prepared for surgery, and that all your questions have been answered. You will understand what will happen just prior to surgery, during surgery, during your stay in the hospital, and after your discharge from the hospital. **You**

should bring copies of your medical and/or cardiac preoperative evaluation, test results from any tests done and dental evaluation to this appointment if they have not already been faxed to our office.

Upon arrival and check in at Pinehurst Surgical Clinic for your preoperative appointment, one of our nurses will accompany you to one of our examination rooms for an anticipated 45-60 minute appointment. During this appointment, please be prepared to complete specialized x-radiographs needed specifically for surgery planning purposes. Additionally, you will be accompanied to our on-site laboratory for routine laboratory tests of your blood. It is not necessary that you fast prior to your appointment as the laboratory testing that will be completed does not require so. You will also undergo an electrocardiogram at this time (please inform us if you have undergone EKG testing by any other provider within the past six months and bring a copy of this study with you to your appointment if you have). **It is important that you come to your history and physical examination with the actual bottles of medications you are taking on a regular basis, including those used on an as needed basis, both prescription and over the counter. We will be carefully documenting the dosages of the medications you take, including the time of day your medications are taken. Please do not bring a list of your medications, as we prefer the medications in their original bottles ensuring accuracy.**

I would also like you to compile a comprehensive list of all the medical providers you see including their name and contact information. This will allow us to keep all your medical providers updated with your progress before your hip replacement surgery, during your hospitalization and also during your recovery. Steve or Michelle will request this list at your pre-surgery appointment. At this appointment, Steve or Michelle will also provide you with individualized pre-surgery written instructions detailing any medications that need to be discontinued in preparation for surgery, medications that must be taken the morning of surgery and any other necessary instructions. She will also provide you with an application for a temporary handicapped license tag, which you might use for three to six months after your hip surgery.

As part of our preoperative education program, we do encourage all

patients scheduled for hip replacement to consider participating in a preoperative patient education class which is held at Pinehurst Surgical Clinic every other Thursday at 10am. Should you wish to register for this class please call Melinda Nance at (910) 215-2514.

Although the class is voluntary, we feel strongly that this is a very important part of preparing for your surgery. This is a very helpful time to bring members of your family as well so that everyone can understand what is required to get the best possible result from your surgery. Our preference is that you attend one class before your surgery date, if you are able. Michelle or Steve will provide you with a flyer detailing additional class information, they will also facilitate your class enrollment and even pre-register you for class should you have a date in mind.

PRESURGERY PHYSICAL THERAPY EDUCATION

I will also have our Pinehurst Surgical Clinic Physical Therapy department contact you for scheduling a pre-surgery Physical therapy appointment. During this appointment with our physical therapist, we will begin to educate you on the after-surgery self/home therapy program we use for our total hip patients (HOME MOBILITY PROGRAM). You will learn the positions to avoid for 3 months after surgery, and the exercises to work on daily once you are discharged from the hospital to home.

HOSPITALIZATION

Our Surgery Coordinator (Heather) will call you one business day prior to your surgery date and inform you of your arrival time to our surgery center. We do not assign surgery times for our patients as there are instances where certain surgeries may take longer than others. Instead, we will provide you with an arrival time to the surgery center.

It is likely that you will wait a period of time between your arrival to the surgery center and the start of your surgery. We advise that you bring a family member or friend to keep you company during this waiting period as well as some reading materials to help in passing the time. It is important

that we have current, accurate contact information for you to facilitate the provision of information in a timely manner.

You will find that the pre-medication process begins immediately upon hospital admission. We will be administering oral medications to prevent post-surgical nausea and pain. You will then be taken to the preoperative holding area in the operating room. This will allow for consultation with the anesthesiologist/nurse anesthetist and starting of the intravenous line. At this point a preoperative sedative will be given to you by your anesthesiologist/nurse anesthetist.

In almost all cases, a spinal anesthetic is administered. You will be numb from the waist down. Although you may prefer to be awake for the procedure, we will sedate you to the degree that you will continue to breathe. We will ensure that you are completely relaxed and that you will not remember anything about the operation. This is safer than a general anesthetic and your recovery is more rapid. General anesthetics are used in rare cases.

Primary total hip replacement surgery requires approximately one hour of surgery time. While you are in the operating room, your family will wait in the surgical waiting area or at home. As soon as the surgery is completed, I will contact them in person or by telephone. Our surgery center has two phases to the recovery process and your family member will be allowed to join you in phase II.

You will be in the recovery room for one to three hours until the effect of the spinal anesthesia effect is worn off. Once that occurs-your vital signs are stable and you have tolerated food and fluids well, our physical therapist will get you up for physical therapy. Assuming your pain is managed, you tolerate food and fluids and you complete physical therapies goals of walking and stair climbing we will begin the process of discharging you home.

You should expect that once home, you continue the physical therapy exercises and hip precautions you were instructed on before surgery at Pinehurst Surgical Clinic and during your surgery center stay.

Your therapy will be tailored to the type of operation that you received. Regardless of the type of fixation used for your surgery, most patients can be weight bearing as tolerated, which means you can put full weight on your leg the day of surgery. Should unexpected bone fracture occur during surgery, there is the possibility you will have limited weight bearing for a short period of time, although this is not typical. While you are walking in the hospital, you will initially be using a walker, but you can advance to the use of crutches or a cane once you can master the technique. It is your personal preference whether you go home on a walker or on crutches. Prior to the discharge from the surgery center our physical therapist will be certain that you understand very clearly your discharge exercise program and have all the assistive devices that will help you cope in the immediate postoperative period. You will be required to go home with the use of a walker for ambulation.

To prevent blood clot formation, you will be placed on some form of blood thinner, typically aspirin twice per day. We will also have you continue a blood thinner at home for approximately 4 weeks after surgery.

You will not have staples in your incision after hip replacement as we choose, rather, to sew your wound closed using absorbable suture. Your incision will be evaluated approximately seven to ten days after hospital discharge at your first follow-up clinic appointment. When you go home you may still have some clear, yellow drainage (serous drainage). This is not an indication of any type of infection but just a part of the healing process in the fat below the skin level. This may last from one to five days. You will be allowed to shower with an occlusive bandage once home.

When you are discharged from the surgery center you will have a prescription for narcotic pain medication, but you should be requiring less of the medication each day. You should moderate your activities to reduce the amount of stress that is put on the incision and muscles about the hip. This is the appropriate way to manage your pain after your discharge. It is common to have swelling in the leg, especially if you are becoming more active in your activities at home. The one type of swelling that can be worrisome is swelling in the entire leg starting at the ankle or foot level.

This is common when you sit for prolonged periods of time. If this occurs you need to spend less time sitting and more time lying down on the bed or couch with the leg elevated. If the swelling does not resolve significantly with this rest and elevation, you should contact me so that we might further evaluate this.

You should stay on your crutches, cane or walker for the entire first four weeks after the surgical procedure unless otherwise informed. I will only advance you to a single crutch or cane after you return to see me at your second postoperative visit six weeks following the surgery.

FOLLOW-UP

Once your hip is replaced, it is important to monitor closely the healing process in the first three to six months following the surgical procedure. It is also important to monitor the long-term fixation of the implant over a period of many years to be certain there is no adverse effect on the bone or any sign of loosening of the prosthesis. Therefore, the usual follow-up schedule involves your return to the office for examination and x-rays at the following times after the surgical procedure: two weeks, six weeks, six months, and one year. After the first year, you are seen on an annual or biennial basis (every two years). In some situations, because of difficulty of travel, I can make arrangements for you to be seen by your local family physician who can obtain x-rays and send those to me for evaluation. Unfortunately, this is not the ideal situation. I will try to be as flexible as possible because I know travel is often quite difficult and expensive.

PROPHYLACTIC ANTIBIOTICS

Patients with hip replacements can develop infections of the joint in special circumstances. Any infection you might acquire in any other part of your body could potentially spread to your replaced hip. As a result, antibiotics should be taken before colonoscopy, urologic, and dental procedures. An instruction sheet has been prepared and will be given to you in your educational packet.

COMMUNICATION WITH OUR OFFICE

I think it critically important to have excellent communication with each other, especially after surgery. My staff and I try to make every effort to be available for issues that may occur and to answer questions that need attention. We have been using a communication tool called Get Well Loop (Text and/or Email communication) that is specifically related to your hip replacement surgery. I find Get Well Loop to be a very important link between my patients, my advanced practice professions, and our administrative assistants. Use of Get-well loop allows my patients to communicate with myself and my team 24 hours per day/7 days per week without needing to speak with one of our on call medical providers who may not have ever met you. Get Well Loop is our preferred communication tool for all surgery patients.

I strongly encourage you or any family member who is interested in helping in your care to sign up for Get Well loop at any point in your journey toward total hip replacement surgery. Get Well loop delivers real time communication to you daily once you're signed up and allows multi-directional communication that is delivered to our cell phones and email on an ongoing basis beginning the day you are signed up thru 4 weeks after your hip replacement surgery is completed.

PROBLEMS OR QUESTIONS

If you have any concerns or questions about the scheduling or preoperative sequence of events, you should contact Heather Wilhelm at 910-295-0275. Heather can answer questions about surgical scheduling, any insurance concerns or preparation for surgery. Our staff can also help you after your discharge from the hospital with questions about your recovery and will forward any other specific questions to me or one of my advanced practice professionals, Steve, Savannah or Michelle. If we are not in the office at the time of your call, they will make certain that we will receive the message as soon as possible. Either Steve, Savannah, Michelle or I will return your phone call as soon as we are able.

I want you to understand completely your disease process and the proposed surgery. It is best that you clearly understand all the information about total hip replacement surgery. If you have any additional questions, please ask me when I see you prior to your admission to the hospital or at the time of your preoperative history and physical examination with Michelle. You may also contact Michelle via email at mmoore@pinehurstsurgical.com , Steve via email at sbalos@pinehurstsurgical.com or Savannah at schappell@pinehurstsurgical.com

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SUGGESTED ADDITIONAL INTERNET RESOURCES

- www.aahks.org
- https://www.nlm.nih.gov/medlineplus/
- www.aaos.org
- www.zimmerbiomet.com