Expert Opinion provided by Dr. ABC

Prof. Dr. ABC

HEAD OF THE DEPARTMENT, ORTHOPEDICS
Hospital for Special Surgery

MBBS, MS, Mch.(AIIMS, India), MRCS (U.K.)

About Dr. ABC

Dr. ABC specializes in adult reconstructive surgery of the hip and knee, including primary and revision joint replacements. He attended Washington University in St. Louis for his undergraduate education, where he double majored in chemistry and mathematics/statistics and played varsity football. He graduated medical school from Vanderbilt University as a member of the Alpha Omega Alpha Medical Honor Society. Dr. ABC completed his residency at HSS, where he was awarded the Russell Warren Basic Science Research Award and the Jean McDaniel Award, which is given to the Chief Resident who best demonstrates leadership, professionalism and ethics in the care of patients. In addition, he was voted by the faculty as the Distinguished Housestaff Award winner at NewYork-Presbyterian Hospital/Weill Cornell Medical Center.

After residency, Dr. ABC completed a fellowship in Adult Reconstruction at Rush University Medical Center, where he won the Jorge O. Galante, MD Fellow Research Award. Dr. ABC joined HSS as a clinician-scientist and currently has over 55 publications and has received numerous research awards at local, regional, and national levels.

Education

Medical School	**AIIMS, New Delhi, India**
Residency	**Hospital for Special Surgery**
Orthopaedic Fellowship	**Rush University Medical Center**

Selected Publications

Modes of failure and revision of failed lateral unicompartmental knee arthroplasties. Citak M, Cross MB, Gehrke T, Dersch K, Kendoff D. Knee. 2015 Sep;22(4):338-40.

Periprosthetic joint infection: modern aspects of prevention, diagnosis, and treatment. Frank RM, Cross MB, Della Valle CJ. J Knee Surg. 2015 Apr;28(2):105-12.

Vascular anatomy of the patella: implications for total knee arthroplasty surgical approached.

Summary for the Patient

Thank you for allowing me to review your case and provide my opinion. Before I answer your questions and offer my recommendations, let me summarize your medical history and concerns based on what I have learned from reviewing your medical records and the questionnaire you completed.

You are XX years old and have been having trouble with your left knee ever since 2007 when you tore your meniscus (a piece of cartilage in the knee) and had surgery to repair it. Since your surgery, you have developed worsening knee pain and have been diagnosed with osteoarthritis. Your doctors have recommended anti-inflammatory medications and suggested that you modify your activities; they have also tried cortisone injections and Euflexxa injections. Unfortunately, none of this has really helped. Recently, your orthopedic surgeon suggested a total knee replacement. Although you are considering this option, you have a number of questions that you'd like answered before committing to it.

Your Questions

Before I respond to your specific questions, I'd like to provide you with a bit of background information about the knee. Although you may be familiar with some of what I'm going to tell you, I feel that the information will be helpful in better understanding the recommendations that I make.

The knee joint is made up of three bones: the thigh bone (femur), the lower leg bone (tibia), and the kneecap (patella). Within the joint, all three bones are coated by articular cartilage, a layer of smooth, rubbery tissue that protects and pads the bones during movement. There are also two C-shaped pieces of cartilage that sit in between the thigh bone and the bones of the lower leg, called the menisci. The menisci serve as shock absorbers (absorbing external forces applied to the knee) and help stabilize the bones of the knee joint. As you age, the articular cartilage slowly wears down and there is less and less padding between the bones of the joint. When this happens, repeated use of the joint can lead to inflammation in the joint (osteoarthritis), causing pain and swelling and interfering with your ability to engage in some of the activities that you enjoy.

1. Do you agree with my diagnosis of osteoarthritis? If so, what might have caused it?

Yes, I agree with your underlying diagnosis of osteoarthritis. The arthritis involves both your left and right knees, with the left being more severely affected. Your history—the fact that you report fairly global knee pain—is consistent with the underlying diagnosis of osteoarthritis as is your physical exam. On physical exam, you have reduced motion in your knee joint, medial and lateral joint line tenderness (you are tender along both the inside and outside of the joint), and crepitus (cracking and popping sensations) when you bend and extend the knee.Your imaging studies also support the diagnosis of osteoarthritis.

I reviewed the recent radiographs (x-rays) of your knee, which show progression of your arthritis, especially in the "medial compartment" of your knee (the inside of your knee—the part that is closer to your other leg). Although your left knee currently appears to be worse than the right, you may anticipate that over time that the right knee will progress to the point where it is similar to the left. There is no way to tell for certain how long that process might take.

Your current knee problems are likely a result of progressive wear and tear of the knee joint that has occurred over time. That being said, trauma to the knee can also influence the development of osteoarthritis. The torn meniscus that you suffered along with the arthroscopic surgery that you underwent could have predisposed you to developing arthritis at an earlier age, simply because it left you with less cushioning in the joint. Accelerated wear and tear of the joint is a normal and natural progression for individuals who tear their meniscus and have to have part of it removed.

2. Is the proposed surgery (total knee replacement) the best treatment option at this point? Do I have other nonsurgical treatment options that would help? Other surgeries or procedures you would recommend? Would a partial knee replacement be a better option?

I think that you are approaching the point where knee replacement surgery may be the best option for you. You have already tried all of the usual forms of conservative therapies, including physical therapy and joint injections, and, unfortunately, none of them has worked sufficiently well.

Some patients like to try glucosamine and chondroitin sulfate (an over-the-counter supplement). I think this is O.K. to try, but I have not had a lot of success with it in my patient population.

One other nonsurgical option that I did not see mentioned in your medical record is the use of what is called an "unloader brace". When a person has arthritis that is significantly worse on one side of the knee (like yours is worse on the inside of the knee, or "medial" side), this type of brace can sometimes be helpful. It is custom fitted so as to apply pressure to the opposite side of the knee (the less affected side), reducing stress on the arthritic compartment and hopefully alleviating pain and improving mobility.

Total knee arthroplasty or "full knee replacement" is a very successful operation. It has a long track record of excellent results and is one of most predictable operations that is performed in all of medicine. What I mean by this is that it very reliably provides high patient satisfaction and a new knee joint that lasts a long time.

I am a strong proponent of partial knee replacement, but only for the right patients. If you had presented with isolated medial compartment (inner knee) pain and had your physical exam findings and radiographic (imaging) studies been consistent with mostly medial compartment disease, I would consider you a candidate for partial knee replacement. However, you seem to have more global knee pain. In addition, I see that your height is 5 feet 2.5 inches and your weight is ~ 224 pounds, which gives you body mass index of 39.9. This is higher than I think is ideal for patients to have partial knee replacement. I do not think that a partial knee replacement is the right surgery for you. Based on your overall current condition, I think you would be best suited for a full knee replacement.

3. Can I expect the surgery to allow me to return to the warehouse working full time (12-hour shifts, on my feet almost entire shift)?

Presuming the surgery that you are asking about is total knee replacement, yes, you can expect that, over time, your strength and endurance will reach a point far superior to where you are right now. I have patients whose work places even greater demands on their bodies and knees than what you have described, and they manage to do okay— and in fact thrive—at their job after their knee replacements. This includes fishermen up in Alaska off the Baring Sea that are going up and down ladders and crawling into tight spaces for crabbing and fishing! Here at the hospital, I have many nurses whose knees are replaced that work 12-hour shifts three to four times a week, and they do so successfully. Based on my experience, I see no reason why you would not be able to return to work as warehouse clerk.

4. Please explain the recovery process from surgery.

Typically, following knee replacement surgery, patients will remain in the hospital or facility where they had their surgery for either one or two nights, sometimes three. This is variable and is something you can ask your surgeon about. I do several hundred knee replacements a year, and I strongly recommend that patients go home after a brief hospital stay rather than to a rehabilitation facility, if at all possible.

While in the hospital, all patients are given a rehabilitation protocol and it is expected that they will dutifully perform the recommended therapeutic exercises. We routinely schedule visiting home health nurses and physical therapists to go to patients' homes for evaluation and initial treatment. As quickly as possible, however, I encourage my patients to transition to outpatient physical therapy (i.e. going to a physical therapy office several times per week for appointments). While there are good in-home physical therapists, I find that outpatient physical therapy offers a strong advantage; it enables patients to use different machines and techniques that aren't possible at home and helps them progress and get their strength back faster.

Recommendations for the Patient

Thank you for allowing me to consult on your case. In summary:

- Consider a full left knee replacement if your quality of life is significantly impacted by the pain and dysfunction your are experiencing, and all the efforts you have made to treat it are not working sufficiently well.
- If you chose to proceed with surgery, be careful to follow all of the instructions provided by your surgeon closely. Physical therapy after surgery is very important. I don't think you will need an inpatient rehabilitation center, but it is important that you work diligently with an outpatient therapist.

- Implement a weight loss program to reduce your body mass index to a target of 25.
  Seek medical or nutritional help as needed. Losing weight may help alleviate the pain in your left knee and will reduce your chances of needing early surgical intervention on your right knee. If knee pain limits the amount of exercise you can do, I recommend aqua-exercise, as this removes strain from your knee.

- Review the links that I have selected for you as they present a good review of almost all of the issues we have touched on.

I hope that you find these recommendations useful and that they help facilitate a good conversation between you and your treating team. I wish you all the best!

References For The Patient

Arthritis of the knee:
http://orthoinfo.aaos.org/topic.cfm?topic=A00212

Unicompartmental knee replacement:
http://orthoinfo.aaos.org/topic.cfm?topic=A00585

Total knee replacement:
http://orthoinfo.aaos.org/topic.cfm?topic=A00389

References For The Treating Physician

Clinical treatment guidelines for osteoarthritis of the knee:
http://www.aaos.org/research/guidelines/GuidelineOAKnee.asp