Mini Review

It Medical Team
https://www.itmedicalteam.pl/

Journal of Universal Surgery
2254-6758

2022
Vol. 10 No. 8: 59

Arthroscopy: Knee Replacement and Types

Dr. William Wikey*

Department of Clinical Epidemiology, Leiden University Medical Centre, the Netherlands

Corresponding author: Dr. William Wikey

we.ikey@welliamwikey.tu

Department of Clinical Epidemiology, Leiden University Medical Centre, the Netherlands

Abstract

In many areas, nonessential orthopaedic procedures that were postponed due to COVID-19 have resumed. For information: Questions and Answers for Patients Regarding Elective Surgery and COVID-19. For patients whose procedures have not yet been rescheduled: What to Do If Your Orthopaedic Surgery Is Postponed.

Received: 01-Aug-2022, Manuscript No. IPJUS-22-13027; **Editor assigned:** 05-Aug-2022, Pre-qc No. IPJUS-22-13027; **Reviewed:** 19-Aug-2022, QC No. IPJUS-22-13027; **Revised:** 23-Aug-2022, Manuscript No. IPJUS-22-13027 (R); **Published:** 30-Aug-2022, DOI: 10.36648/2254-6758.22.10.59

Citation: Wikey W (2022) Arthroscopy: Knee Replacement and Types. J Uni Sur, Vol. 10 No. 8: 59.

Introduction

Knee arthroscopy is a surgical procedure that allows doctors to view the knee joint without making a large incision (cut) through the skin and other soft tissues [1]. Arthroscopy is used to diagnose and treat a wide range of knee problems. During knee arthroscopy, your surgeon inserts a small camera, called an arthroscope, into your knee joint. The camera displays pictures on a video monitor, and your surgeon uses these images to guide miniature surgical instruments. Because the arthroscope and surgical instruments are thin, your surgeon can use very small incisions, rather than the larger incision needed for open surgery [2]. This results in less pain and joint stiffness for patients, and often shortens the time it takes to recover and return to favorite activities.

The BMJ Rapid Recommendations group makes a strong recommendation against arthroscopy for osteoarthritis on the basis that there is high quality evidence that there is no lasting benefit and less than 15% of people have a small short-term benefit. There are rare but serious adverse effects that can occur, including venous thromboembolism, infections, and nerve damage [3]. The BMJ Rapid Recommendation includes infographics and shared decision-making tools to facilitate a conversation between doctors and patients about the risks and benefits of arthroscopic surgery. Two major trials of arthroscopic surgery for osteoarthritis of the knee found no benefit for these surgeries. Even though randomized control trials have demonstrated this to be a procedure which involves the risks of surgery with questionable or no demonstrable long-term benefit, insurance companies (government and private) world-wide have generally felt obliged to continue funding it [4]. An exception is Germany, where funding has been removed for the indication of knee osteoarthritis. It is claimed that German surgeons have continued to perform knee arthroscopy and instead claim rebates on the basis of a sub-diagnosis, such as meniscal tear. A 2017 meta-analysis confirmed that there is only a very small and usually unimportant reduction in pain and improvement in function at 3 months (e.g. an average pain reduction of approximately 5 on a scale from 0 to 100). A separate review found that most people would consider a reduction in pain of approximately 12 on the same 0 to 100 scale important—suggesting that for most people, the pain reduction at 3 months is not important. Arthroscopy did not reduce pain or improve function or quality of life at one year [5]. There are important adverse effects. Your knee is the largest joint in your body and one of the most complexes. The bones that make up the knee include the lower end of the femur (thighbone), the upper end of the tibia (shinbone), and the patella (kneecap) [6,7]. Other important structures that make up the knee joint include:

Articular cartilage

The ends of the femur and tibia, and the back of the patella are covered with articular cartilage. This slippery substance helps your knee bones glide smoothly across each other as you bend or straighten your leg.

Synovium

The knee joint is surrounded by a thin lining called synovium. This lining releases a fluid that lubricates the cartilage and reduces friction during movement.

Meniscus

Two wedge-shaped pieces of meniscal cartilage between the femur and tibia act as shock absorbers. Different from articular cartilage, the meniscus is tough and rubbery to help cushion and stabilize the joint [8].

Ligaments

Bones are connected to other bones by ligaments. The four main ligaments in your knee act like strong ropes to hold the bones together and keep your knee stable [9].

Knee replacement

Unless you have had a ligament reconstruction, meniscus repair, or cartilage restoration, you should be able to return to most physical activities after 6 to 8 weeks, or sometimes much sooner. You may, however, need to avoid higher impact activities for a longer time. Knee replacement, also known as knee arthroplasty, is a surgical procedure to replace the weight-bearing surfaces of the knee joint to relieve pain and disability, most commonly offered when joint pain is not diminished by conservative sources and also for other knee diseases such as rheumatoid arthritis and psoriatic arthritis. In patients with severe deformity from advanced rheumatoid arthritis, trauma, or long-standing osteoarthritis, the surgery may be more complicated and carry higher risk. Osteoporosis does not typically cause knee pain, deformity, or inflammation and is not a reason to perform knee replacement. Other major causes of debilitating pain include meniscus tears, cartilage defects, and ligament tears. Debilitating pain from osteoarthritis is much more common in the elderly. Knee replacement surgery can be performed as a partial or a total knee replacement. In general, the surgery consists of replacing the diseased or damaged joint surfaces of the knee with metal and plastic components shaped to allow continued motion of the knee. The operation typically involves substantial postoperative pain and includes vigorous physical rehabilitation. The recovery period may be 12 weeks or longer and may involve the use of mobility aids (e.g. walking frames, canes, crutches) to enable the patient's return to preoperative mobility. It is estimated that approximately 82% of total knee replacements will last 25 years [10].

Types of Arthrograms

There are two types of arthrograms

A direct arthrogram and an indirect arthrogram.

During a direct arthrogram, contrast dye is injected into your joint. During an indirect arthrogram, dye is injected into your bloodstream near the affected joint. It is then absorbed by your blood vessels and moves into the joint space.

Additional imaging can follow either kind of arthrogram. This can include:

Fluoroscopy

Fluoroscopy is a specialized type of X-ray that creates video or moving images of the inside of your body. This type of imaging lets the technician see the structures in real-time.

MRI scan

An MRI uses magnetic fields and radio waves to create computer-generated images of the inside of your body. An MRI can see organs and cartilage that X-rays can't. Learn more about the different types of MRIs here.

CT scan

A CT scan uses a series of X-rays to create 3D computer images of the inside of your body. The exact length of your imaging procedure will depend on the type of arthrogram you need and how many imagining tests have been ordered. Your doctor will let you know ahead of time what your arthrogram will include. Technicians will be able to give a reliable estimate of how long your procedure will last.

Results

In most cases, it will take a day or two to get the results of your arthrogram. A radiologist will interpret your arthrogram and pass their findings to your doctor. The imaging lab will automatically forward the images to your doctor, along with a report. Your doctor, or someone from their office, will contact you to either explain the results or schedule an appointment to discuss them. They'll let you know if you need additional testing or a new treatment plan.

Conclusion

Many people return to full, unrestricted activities after arthroscopy. Your recovery will depend on the type of damage that was present in your knee. If your job involves heavy work, it may be longer before you can return to your job. Discuss with your doctor when you can safely return to work. For some people, lifestyle changes are necessary to protect the joint. An example might be changing from high impact exercise (such as running) to lower impact activities (such as swimming or cycling). These are decisions you will make with the guidance of your surgeon. Sometimes, the damage to your knee can be significant enough that it cannot be completely reversed with arthroscopic surgery. More extensive operations may be needed in the future for these more severe conditions.

References

1 Angus S (1996) Are tourniquets in total knee replacement and arthroscopy necessary. KNEE 3: 115-119.

2 Kohn D (1993) Auto graft meniscus replacement: Experimental and clinical results. Knee Surg Sports Trau 1: 123-125.

3 Metzdorf A, Roland PJ, Panaiotis P, Robert M (1999) Arterial injury during revision total knee replacement. Knee Surg Sports Trau 7: 247-248.

4 John I (2001) the patella in total knee replacement: does it matter. Knee Surg Sports Trau 9: S2-S2.

5 Jean YJ (2008) Navigated Unicompartmental Knee Replacement. Sports Med Arthrosc Rev 16: 103-107.

6 Roland B, Reha NT, Jon K (2015) Clinical outcome after total knee replacement. Knee Surg Sports Trau 23: 1575-1577.

7 Jizong G (2000) Immunolocalization of types I, II, and X collagen in the tibial insertion sites of the medial meniscus. Knee Surg Sports Trau 8: 61-65.

8 Stephen AW, Uri F (1989) Arthroscopy of the painful dysfunctional total knee replacement. Arthrosc J Arthrosc Relat Surg 5: 294-297.

9 Adnan AF, Prashant B (2009) is a femoral component applicator useful in total knee replacement. Knee Surg Sports Traumatol Arthrosc 17: 125-127.

10 Joerg J, Akram MA (2007) Arthroscopic treatment of patients with moderate arthrofibrosis after total knee replacement. Arthrosc J Arthrosc Relat Surg 15: 71-77.