



A patient's guide to everything you
need to know about

KNEE ARTHROSCOPY SURGERY



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A FOREWORD FROM DR.SHEKHAR SRIVASTAV



KNEE ARTHROSCOPY SURGERY "CHANGING LIVES"

-PREFACE-

Knee arthroscopy is a common surgical procedure performed for problems of the knee joint. With today's hectic lifestyle & more people getting into sports, knee problems are on the rise. Arthroscopy is a very minimally invasive & precise procedure using a telescope to evaluate or to treat conditions such as torn cartilage, ACL & other ligament reconstruction, trimming and repairing of damaged meniscus.

The advantage of arthroscopy over traditional open surgery is that the joint does not have to be opened fully. This reduces recovery time and increases the rate of surgical success due to less trauma to the soft tissues.

Though mostly done for younger patients, arthroscopy is also performed in older patients with arthritis who have repeated pain & swelling of the knee. In properly indicated patients the results of Knee Arthroscopy are highly successful with the patient returning to full activity within few weeks time.

Knee arthroscopy surgery is routinely performed at Sant Parmanand Hospital using the latest surgical techniques and equipment yielding excellent results. This booklet is intended to guide you through various arthroscopic procedures and clear your doubts. I do hope you will find this booklet useful and it will prepare you for your surgery.

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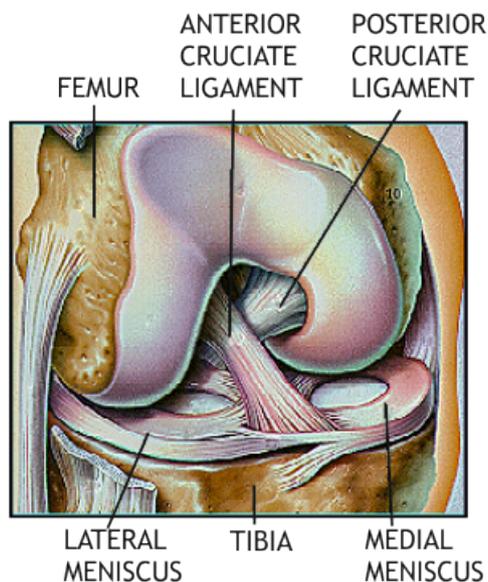
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HOW NORMAL KNEE WORKS

The knee is the largest joint in the body, and one of the most easily injured. It is made up of the lower end of the thigh bone (*femur*), the upper end of the shin bone (*tibia*), and the knee cap (*patella*), which slides in a groove on the end of the femur. Four bands of tissue, the anterior and posterior cruciate ligaments, and the medial and lateral collateral ligaments connect the femur and the tibia and provide joint stability. The surfaces where the femur, tibia and patella touch are covered with *articular cartilage*, a smooth substance that cushions the bones and enables them to glide freely. Semicircular rings of tough fibrous-cartilage tissue called the *lateral and medial menisci* act as shock absorbers and stabilizers.

The bones of the knee are surrounded by a thin, smooth capsule which is lined by a thin synovial membrane which releases a special fluid that lubricates the knee, reducing friction to nearly zero in a healthy knee.



Picture 1 : Knee Joint Meniscus and Ligaments

WHAT IS ARTHROSCOPY

Arthroscopy is a procedure by which various joints in the body (Knee, Shoulder, Ankle, Hip & Wrist) can be inspected and treatment given by a small pencil shaped instrument called arthroscope (Telescope). This is a keyhole incision surgery where two single stitch incisions (Pic. 2) are usually enough to treat any problem which would have normally required a large incision. This has been made possible by technological advancement in Bio-engineering field. The small instruments (biters, shaver, probes, scissors etc.) also measuring 2 to 5 millimeters, are placed into the joint through separate incisions to remove torn cartilage, trim torn structures, or do other procedures.



Pic. 2



Key hole Incision
Pic. 3

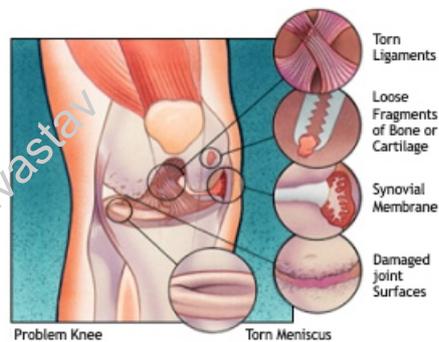
HOW IS ARTHROSCOPY PERFORMED ?

Arthroscopic surgery, although much easier in terms of recovery than “open” surgery, still requires the use of anaesthetics and the special equipment in a hospital operating room. After arrival, you will be evaluated by a member of the anesthesia team. Arthroscopy can be performed under regional or general anesthesia. Regional anesthesia numbs you below your waist, and general anesthesia puts you to sleep. The anesthesiologist will help you determine which would be the best for you.

The orthopaedic surgeon will make a few small incisions in your knee. A sterile solution will be used to fill the knee joint and rinse away any cloudy fluid, providing a clear view of your knee. The surgeon will then insert the arthroscope (telescope) to properly diagnose your problem, using the TV image to guide the arthroscope and treat your problem.



Pic. 4



Indications for Knee Arthroscopy

Pic. 5

WHO NEEDS ARTHROSCOPIC SURGERY ?

Arthroscopy is frequently required in young patients having knee problems following injury during sports, road accidents or fall in day to day activities. In older persons it may be helpful in arthritic patients having torn meniscus, loose cartilage or loose bone pieces. Signs that you may be a candidate for this procedure include swelling, persistent pain, catching, giving-way, and loss of confidence in your knee. When other treatments such as the regular use of medications, knee supports, and physical therapy have provided minimal or no improvement, you may benefit from arthroscopy.

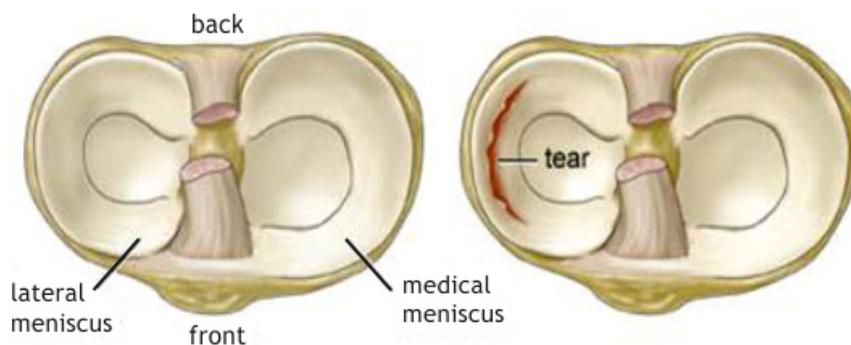
MENISCUS TEAR

WHAT IS A MENISCUS?

The meniscus is a specialized fibrocartilagenous structure present between femur(thigh bone) and tibia(shin bone). It acts as a shock absorber between the two bones. It is thicker where it attaches to the lining of the joint and thinner toward the middle of the joint. If you made a cut across it, the meniscus would be triangular or pie shaped.

HOW DOES A MENISCUS GETS TORN?

The meniscus can tear in a number of ways. Tears can result from a sudden twisting-type injury or can occur gradually with age. The tear can be through either the outer thick part or inner thin part. Some tears involve only a small portion of the meniscus, while in others nearly the entire meniscus can be involved.



Pic. 6

WHAT PROBLEMS DOES A MENISCUS TEAR CAUSES?

Meniscus tears can cause symptoms from portions of the torn fragments getting stuck or pulled in between the bones as the knee moves. This can cause snapping or popping, locking, pain, and swelling. If it's a minor tear then they get better by rest, ice and physiotherapy. Not all meniscus tears cause problems, but when they do then surgery is required.

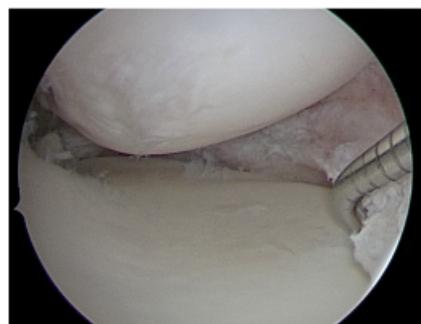
WHAT ARE THE SURGICAL OPTIONS FOR MENISCUS TEAR?

Meniscus tears can be surgically managed by arthroscopy where keyhole incisions are made in the knee joint through which arthroscope and instruments are inserted into the knee joint and either trimming of the torn meniscus or repair is done.

The ability of a meniscus to heal depends primarily on its blood supply. Outer part of meniscus has good blood supply & tears in this region are repaired as they heal nicely. Central portion of the meniscus has poor blood supply & results of repair are not good. Arthroscope can be used to trim out the piece which is torn. Only the portion which is torn is removed (Meniscectomy).



Pic. 7 Meniscus Tear



Pic. 8 After Arthroscopy



Pic. 9 Meniscus Tear



Pic. 10 After Repair

CAN ANYTHING BE DONE FOR DAMAGED CARTILAGE?

Damaged Articular cartilage which was till now considered irreparable can now be repaired with new advances in arthroscopic surgery procedures. Mosaicplasty is a technique where healthy cartilage from non-weight bearing portion of the joint is transferred to damaged portion of the joint with the help of specialized instruments. Autologous Chondrocyte Implantation(ACI) is a technique where cartilage cell is taken from the joint and cultured in specialized laboratories and the cultured cartilage is then implanted over the damaged portion of the joint.



Pic. 11 OATS



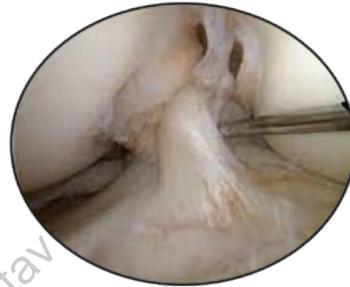
Chondrocyte Implantation

Pic. 12 ACI

ACL- ANTERIOR CRUCIATE LIGAMENT

WHAT IS THE ROLE OF ACL?

ACL along with other ligaments of the knee joint and meniscus provides stability to the knee joint.



Pic. 13

WHAT IS LIGAMENT RECONSTRUCTION (ACL) ?

Ligament reconstruction involves replacing the torn ligament with a tendon (graft) from your knee and fixing the graft in place with screws. The torn ligament is excised arthroscopically and new ligament is prepared by ligament grafts taken from your own body. Bony tunnels are prepared in femur and tibia using specialized instruments through which the new ligament is passed and fixed with special screws.



Pic. 14 Tunnel



Pic. 15 ACL Graft

WHEN CAN THE PATIENT BE AMBULATED AFTER SURGERY?

The patient can walk from the same evening of the surgery. Initially the patient is advised to walk with a brace and a walking cane. Strengthening and range of motion exercises for the knee are started from the next day. The patient is discharged from the hospital 2nd or 3rd day after surgery. The patient can walk without support by 10-14 days depending on muscle strengthening. Slow Jogging and other strenuous activities are permitted after 3 months and the patient can return to active sports only 8-9 months after surgery



Pic. 16 Torn ACL



Pic. 17 Reconstructed ACL

CAN OTHER LIGAMENTS OF KNEE BE ALSO RECONSTRUCTED?

Yes. Though ACL is the most common ligament to be reconstructed in knee, but other ligaments such as PCL or collateral ligaments if torn and causing symptoms in a patient can also be reconstructed. Most of them can be reconstructed arthroscopically but reconstruction of collateral ligaments is usually done by open procedure. Multiple ligament injuries can be treated by combined procedures (both arthroscopic and open). The post op protocol and rehabilitation varies according to the type of injury.

WHAT IS PATELLAR INSTABILITY & WHICH LIGAMENT GETS INJURED ?

Medial patellofemoral ligament(MPFL) attaches the inside part of the kneecap (or patella) to the long bone of the thigh, also called the femur. Injury to this ligament can occur when the patella dislocates or subluxes due to trauma experienced during athletics or an accident, as a result of naturally loose ligaments—most frequently seen in girls and women—or due to individual variations in bony anatomy. People with these injuries are described as having Patellar Instability.

WHAT IS THE TREATMENT OF PATELLAR INSTABILITY?

Patient is evaluated clinically and radiologically with X-rays & MRI. Patient is sent for physiotherapy & rehab for strengthening of stabilizing muscles. If conservative treatment fails then surgical treatment is needed. Common procedure performed is MPFL reconstruction which gives excellent results in indicated patients.



Pic. 18

WHAT WILL BE THE DURATION OF HOSPITAL STAY AFTER ARTHROSCOPIC SURGERY?

Most of the arthroscopic procedures can be performed on day care basis and the patients can go home same evening. In cases where ligament reconstructions are performed the patient is discharged within two to three days.

WHAT HAPPENS WHEN I GO HOME ?

Recovery from arthroscopy is much faster than recovery from traditional 'open' joint surgeries. Still it is important to follow instructions carefully after you return home.

Swelling : keep the operated limb elevated as much as possible for first few days. Apply ice as recommended by your doctor to relieve swelling and pain.

Wound care : Keep your wound and dressing clean and dry. Your wound should not come in contact with water. Change any bandage immediately if it becomes wet or bloody.

Activity : After most arthroscopic surgeries you can walk unassisted, but your surgeon may advise you to use a brace, crutches, a cane or a walker for a limited period of time after surgery. You can gradually put more weight on your leg as your discomfort subsides.

Medications : You may require pain medications for first few days. Antibiotics may be prescribed in major reconstructions surgeries.

- Tingling or numbness

Rehabilitation programme : Hospital physical therapist will instruct you for ambulation, range of motion and muscle strengthening exercises. Your doctor will specify when you should begin an exercise programme to gain motion and to strengthen muscles around the joint.

WHAT ARE THE ADVANTAGES OF ARTHROSCOPIC SURGERY OVER OPEN SURGERY ?

Arthroscopy is a blood less surgery. It has very less morbidity compared to 'open' joint surgery. This has resulted in less pain and stiffness, fewer complications, decreased length of hospitalization as most of the arthroscopic procedures are done as "Day care surgery". The small incisions are closed by single stitch and most of patients are discharged walking same evening of surgery and has faster recovery times.

WHAT ARE THE REASONABLE EXPECTATIONS AFTER ARTHROSCOPIC SURGERY?

Although arthroscopy can be used to treat many problems, the outcome of your surgery will often be determined by the degree of injury or damage found in the your joint. For example surgery done for meniscal tear or loose bodies when the patient has no other problem (like arthritis) is usually uncomplicated and most patient can expect full recovery. Arthroscopic removal of synovium can be of great benefit to patients with rheumatoid arthritis. Arthroscopic reconstruction of ligament and repair of meniscus in the knee gives consistent and predictable good results in young patients.

Remember, that people who have arthroscopy can have many different diagnosis and pre- existing conditions. So each patient's arthroscopic surgery is unique to that person. Recovery time will reflect that individuality.

Doctors are committed to work with you.
We wish you a successful operation

TESTIMONIALS



**Varun
Talwar**

Treatment- Arthroscopic ACL reconstruction

“I would like to thank you for making me run on my feet all over again by doing such wonderful job on my knee (Arthroscopic ACL reconstruction).”

“Thanks for being such a good doctor and allowing me to be able to get back to this normal life & for treating me in such multi speciality hospital having excellent patient care.”

“Sir, you are not just a good surgeon but also a Gentle person & a very strong motivator.” Thx and Warm Regards



**Gaurav
Sharma**

Treatment- PCL recovery

“I would like to thank you and your entire team for my speedy recovery. The way you and your staff handled my knee problem is commendable.”

“I not only recieved world class treatment for my complex knee problem but was also managed exceptionally well in post-op period for quicker recovery”

“My best wishes are always there with you & Sant Parmanand hospital, and I will always recommend ur hospital in future”

Warm Regards



**Prasen
Hedao**

Treatment- Arthroscopic ACL Reconstruction

“This hospital is specialized for ligament injuries and Dr. Shekhar Srivastav is very skillful and experienced which I have personally seen. I had ACL reconstruction done seven months back and I am recovering at a good pace. I can notice remarkable difference in my activities with the reconstructed ligaments which has given me a better stability at the knee without any pain. The supporting staff was also amicable. My overall experience with the hospital was excellent. I wish him all the best for the future.”

Warm Regards



**Dr SHEKHAR SRIVASTAV- Head of the Department
KNEE & SHOULDER SPECIALIST**

Dr Shekhar Srivastav is a Specialist Orthopedics Consultant & Head of the Orthopedics Department at Sant Parmanand Hospital. He has undergone training at various centres in Germany & USA. He has special interest in managing Knee & Shoulder Problems including Arthroscopies, Sports medicine & Joint Replacements. He Has successfully treated thousands of patients including Sportspersons for various Knee & Shoulder Problems. He's an invited faculty member to various national & international conferences & also trains medical graduates & Orthopedics surgeons in Arthroscopic & Orthopedics Procedures



Dr. HARJOBAN SINGH-CONSULTANT ORTHOPAEDICS

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Dr Harjoban Singh is a trained Orthopedics Surgeon specialising in Arthroscopy & Sports Injury management. He has undergone training at reputed centres in UK & has special interest in managing Ligament injuries & Sports injuries of Knee & Shoulder Joint. He's got publications in various national & international journals & takes keen interest in teaching DNB students & Orthopedics Fellows.



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