

A COMPLETE GUIDE FOR KNEE PROBLEMS

Through various stages of life, everyone encounters certain normal deviations, abnormal conditions, traumatic accidents, sports injuries and degenerative changes/arthritis. Adults often face fractures around the knee or ligament injuries, from accidents and falls with sudden twisting force.

Any fracture around the knee joint has to be treated more meticulously and precisely to perfection as there is joint surface involvement. It should heal in the most anatomical position and be followed by the physio rehab protocol, ensuring



maximal functional status.

Ligament injuries and cartilage defects neglected in the initial stages, pose a problem later. Ligament tears such as ACL tear, PCL, MCL/LCL injury, mainly cause instability patients are troubled with daily activities including jogging, climbing stairs, brisk movements, exercise sporting both for recreation & professional. MRIs help in diagnosing the level of injury, grading of the ligament tear and need for the repair.

Ligament reconstructions are minimally invasive arthroscopic surgeries, wherein the entire knee joint is addressed with 2 to 3 portals. The diagnostic scopy is done and the status of the meniscus, cartilage and ligaments are noted. Meniscus repair can be done with special implants such as fast fix, meniscal cinch, etc. For complex tears partial / subtotal meniscectomy is advised.



For most ligament reconstructions, hamstrings tendons are used. The graft is secured with ultra-button/tight rope at the thigh end and bio screws at the leg end. For short individuals, using tight ropes holding the graft with graft link technique is used. With the advent of the instrumentation and new techniques in surgeries, rehab has been shortened and almost pain free. Patients are discharged in 36-48 hours, walk with a walker within 4-6 hours post-surgery, can be nondependent in 2-4 weeks' time, back to office in 4-6 weeks' time, back to low energy recreational activity in 3-6 months and high energy sports in 6-9 months period.

ACL Surgery

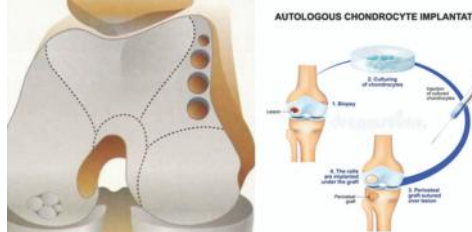
ACL Tear-
No repair
Only
Reconstruction

Graft-
Autograft -
common
Allograft



Generally, MCL & LCL injuries occur at bone attachments and heal well with conservative management using braces.

Mostly in the early stages of osteoarthritis or small cartilage loss/defects, physiotherapy and medications prevent further damage and enhance recovery. In certain cases, debridement and latest procedures like stem cell therapy (PRP/BMAC) are used. Post MRI arthroscopic debridement is done if required. For lesions approx less than 5mm and partial tears PRP injections enhance healing. In cases upto 10mm lesions, PRP along with fibrin glue stick the cartilage defect and allow it to heal. Knee can be bent immediately after the procedure. In case weight bearing area is involved, weight bearing is delayed by 3-4 weeks. For large cartilage defects 1-3cm, depending on the area of involvement OATS (Osteo Articular Transfer System/ Osteochondral Autograft Transplantation) is done. Smaller damaged cartilages are replaced and transferred from non-weight bearing portions of the knee to retain best functionality and biologics. If the graft of cartilage is not sufficient for transfer, it is grown in labs and reimplanted.



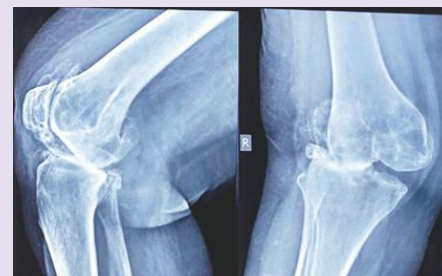
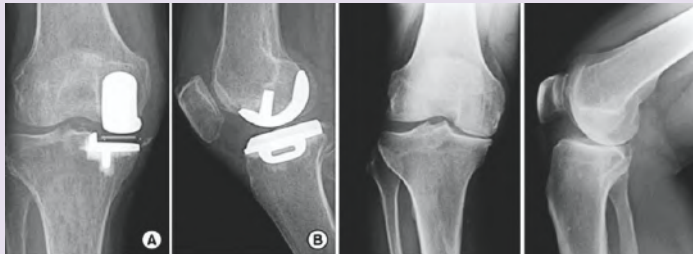
These procedures are primarily for younger people and in cases of early osteoarthritis knee, to regrow cartilage and restore biomechanics. When the above-mentioned procedures fail, patients are recommended for knee replacements.

WHO NEEDS KNEE REPLACEMENT?

- Patients unable to stand/walk for 10-15 minutes
 - Pain over 6 months-1 year
 - History of difficulty in everyday activities
 - X-Ray showing severely damaged joints (Grade IV)
 - Medical/Physical Therapy and preservation procedures not successful
 - Patients without neurological deficits with debilitating pain
- In few patients, the lateral compartment is involved a Unicondylar Knee Replacement, to restore the alignment and balance to protect the knee from further deterioration and delay arthritic changes in other compartments.

ADVANTAGES OF UNICONDYLAR KNEE ARTHROPLASTY (UKA)

- Smaller incision faster recovery
- Retaining the ligaments for natural proprioception
- High flexibility, patient can sit cross-legged
- Less bone loss/cuts --> less pain --> less time off the work



Recent advancements in navigation help determining the size of the implant and the balancing of the knee intraoperatively, while double checking each cut made. It has made balancing increasingly more precise.



CONTRA INDICATIONS FOR UKA

- Involvement of multiple compartments
 - Inflammatory/ Rheumatoid Arthritis
 - Obese patients/short patients
 - Ligamentous / Neurological deficits
- Patient with grade IV tri-compartmental OA knee with gross deformity must undergo total knee replacement.

With the advent of robotics, Sri Kara Hospitals have 3D imaging of the individual knee. The deformity and imbalance is calculated and appropriate positioning of the joint, the necessary cuts to be made, along with the balancing can be drawn and measured even before any cuts on the bone are made. This minimizes bone loss, perfectly places the implant in anatomical position and balances the knee to the near natural state thereby enhancing the rehabilitation, shortening of the duration of stay and enhancing the longevity of the implant.



Dr Kirthi Paladugu

To enable mobility in life, surgeons must try to realign, reconstruct and restore the biomechanics and functionality of the joint. Replace only if needed to restore, realign and offer the best functional, pain free and mobile knee joint.



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