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CLINICO-RADIOLOGICAL EVALUATION OF POSTERIOR CRUCIATE LIGAMENT RECONSTRUCTION USING AUTOLOGOUS PERONEUS LONGUS GRAFT WITH ALL INSIDE TECHNIQUE

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PRESENTING AUTHOR: DR. VINOD KUMAR

CO-AUTHOR: DR. KUNAL GAUTAM

DEPARTMENT OF ORTHOPAEDICS,

MAULANA AZAD MEDICAL COLLEGE, NEW DELHI, INDIA

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Presenters Financial Disclosure

I (or a member of my immediate family) **do not** have a financial interest or other relationship with a commercial company related directly or indirectly with the ***ISAKOS 15th Biennial Congress 2025.***

INTRODUCTION

1. The posterior cruciate ligament (PCL) is the primary restraint for posterior translation in uninjured knees.
2. Different type of autografts has been studied in PCL reconstruction; each having its own advantages and disadvantages-

- **Hamstring** – most common, same incision as tibial tunnel for harvesting
- BPTB- faster return to sport, anterior knee pain
- Quadriceps tendon

3. Some authors have studied peroneus longus graft use in ACL reconstruction, with most of the studies showing good clinical results and minimal donor site morbidity of the harvested ankle. .
4. Due to the disadvantages of Hamstring tendon (HT) and Bone Patellar Tendon Bone (BPTB) autografts, the peroneus longus tendon (PL) is considered a better graft for PCL reconstruction.

AIM OF THE STUDY

- To evaluate the clinicoradiological outcomes of Arthroscopic PCL reconstruction using autogenous peroneus longus graft using all inside technique.
- To evaluate graft donor site morbidity in the case of Peroneus longus autograft.

MATERIALS AND METHODS

1. It was an Interventional Prospective clinical study with 23 knees of PCL deficient knees.
2. All the patients included in the study underwent a detailed history and clinical examination, routine investigations for PAC clearance, X-rays, CT, and MRI.
3. We evaluated the patients for knee function and graft site morbidity for duration of 1 year

MATERIALS AND METHODS

Post-operative follow-up

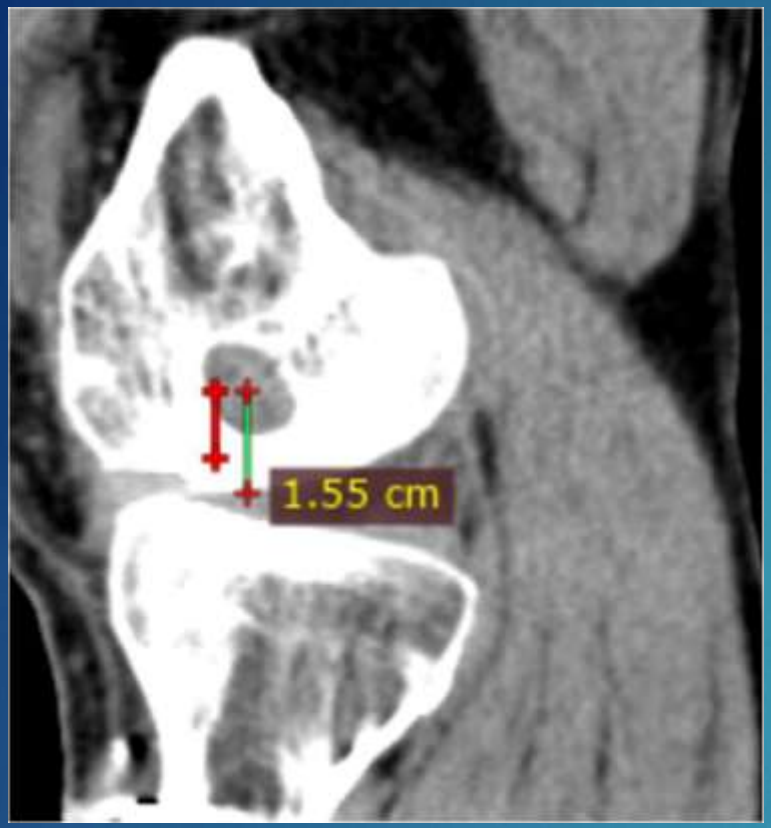
1. For functional scoring, we used International Knee Documentation Committee (IKDC) and Cincinnati score at 12 months
2. For donor site morbidity evaluation, we used American Orthopedic Foot and Ankle Score (AOFAS) and Foot and ankle disability index (FADI) score at 12 months
3. For radiological evaluation, MRI at 12 months post-operatively was taken into consideration to assess the healing of graft using Fegueroa's Score.
4. For ligament laxity, Posterior Drawer and Posterior Lachman performed preoperatively, 6 months post-operatively and 12 months postoperatively.

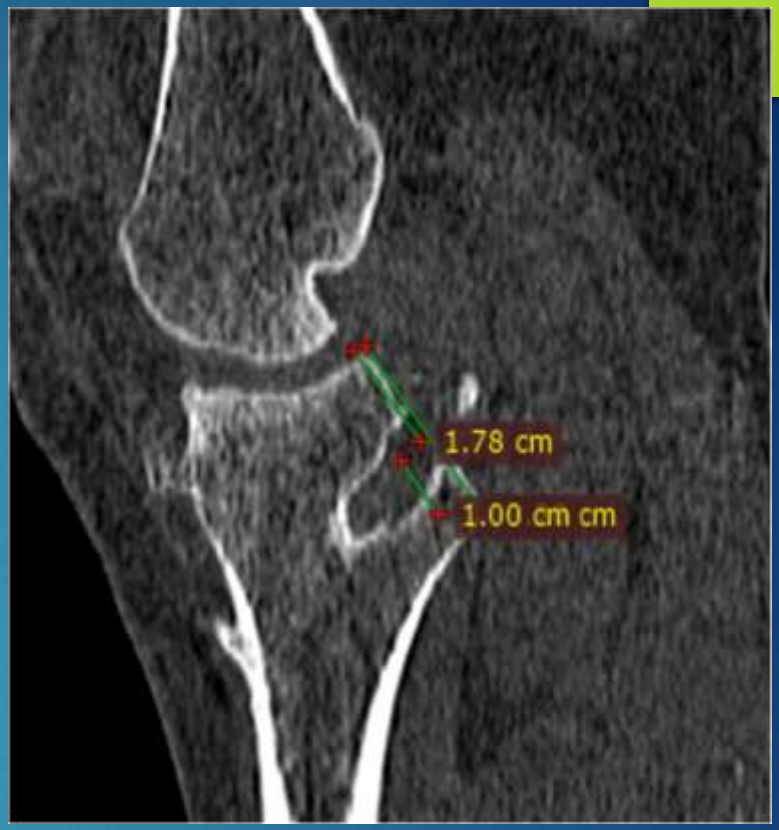
Final prepared 3 strand peroneus longus autograft

RESULTS

- The IKDC and Cincinnati score in preoperative and postoperative patients showed a significant improvement.
- The mean IKDC Score (%) in the pre-operative phase was 46.67 ± 8.62. At one-year post-op, the mean IKDC Score (%) was 83.17 ± 2.99.
- The mean Cincinnati Score in pre-op was 181.67 ± 27.14. The mean Cincinnati Score at one-year post-op was 316.67 ± 19.66.

- The scores for donor site morbidity are within normal range. The mean AOFAS at 2 weeks post-op was 35.33 ± 5.75 which increased to 93.67 ± 2.42 at one-year post-op. The mean FADI score at 2 weeks post-op was 13.67 ± 2.94 and at one-year post-op was 95.67 ± 3.20 respectively.
- The mean MRI: Fegueroa's Score for radiological evaluation was 4.67 ± 0.52.
- All the patients had positive Posterior Drawer and Posterior Lachman which turned negative in 78.26 % of the patients, Grade 1 in 13.04 % and Grade 2 in 8.69 % of patients on examination at 1 year postoperative.





Femoral and tibial tunnels measurements on 2D CT

DISCUSSION

- KNEE EVALUATION SCORE- In our study, the mean IKDC Score (%) in the pre-operative phase was 46.67 ± 8.62. At 6 months post-op, the mean IKDC Score (%) was 83.17 ± 2.99.
- GRAFT SITE MORBIDITY SCORE-In our study, the mean AOFAS at 2 weeks post-op was 35.33 ± 5.75 which increased to 93.67 ± 2.42 .FADI score was measured at 2 weeks, 6 weeks, 3 months, 6 months and at 12 months post-operative period. But our studies mainly focus on the score at 12 months since PCL takes long follow-up and slow rehabilitation. Again, in our study, the mean FADI at 2 weeks post-op was 13.67 ± 2.94 and at 12 months post op was 95.67 ± 3.20 respectively .
- Different studies by Setyawan et al, Rhatomy et al, Kumar et al assessing the above follow-up scores at 2 years post-operative PCL reconstruction using Peroneus Longus graft have shown similar comparable results .

CONCLUSION

- Single bundle posterior cruciate ligament reconstruction using all inside technique involving small bony sockets using multi-stranded autogenous peroneus longus tendon grafts offers excellent results in terms of post-operative knee stability and functional outcome.
- Peroneus longus graft can be considered as an ideal candidate to replace other graft in PCL reconstruction as the diameter and length of the graft was adequate.
- Also, the PL graft was barely associated with any graft donor site morbidity as shown by the AOFAS and FADI scores which were comparable to the literature.
- All our patients showed adequate characterization of the grafts as depicted by Figueroa score as assessed by MRI at 12 months

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