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Outcomes and learning lessons following

Revision ACL Reconstruction among football players

Dr Saseendar Shanmugasundaram
Dr Samundeeswari Saseendar
Division of Arthroscopy and Sports Medicine,
Sri Lakshmi Narayana Institute of Medical Sciences,
Puducherry, INDIA

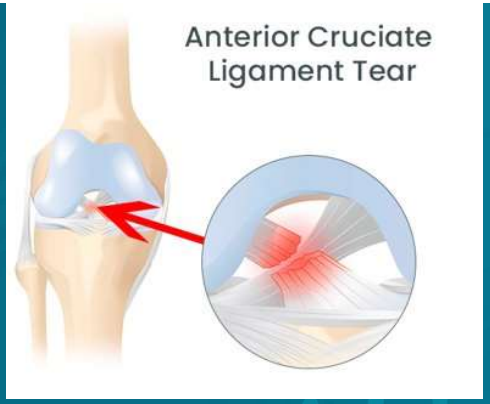
Faculty Disclosure Information

- SICOT - Chair of the Education Committee; Member of the Sports Traumatology and Arthroscopy Committee; Member of the Foot and Ankle Committee
  Member of the Communications and Publications Committee, ICRS
  Member of the Mentorship Committee, International Orthopaedic Diversity Alliance (IODA)
  Honorary Member of the South American Arthroscopy Society (SLARD)
  Editor and Member of Board of World Orthopaedic Concern International
  Vice President of World Orthopaedic Concern - India
  Member of Executive Committee, Indian Cartilage Society (ICS)

  Deputy Editor, Journal of Clinical Orthopaedics and Trauma (Elsevier)
  Section Editor, Indian Journal of Orthopaedics (Springer)
  Section Editor, Journal of Arthroscopic Surgery and Sports Medicine (Scientific Scholar)
  Associate Editor, Journal of Orthopaedic Case Reports (Springer); Journal of Arthroscopy and Joint Surgery; Journal of Orthopaedics (ScienceDirect)

NO FINANCIAL DISCLOSURE

ACL tears



- ACL tear – most common ligament injury in the knee
- 129,000 to 200,000 reconstructions per year in the US
- 400,000 reconstructions worldwide
- ACL re-tear rates - between 4% and 25%
- Important to study the causes of retear and the analyse their management, to improve outcomes

Methodology

- Retrospective review of patients undergoing revision ACL reconstruction between 2018 and 2022
- Study – Apollo Hospital Muscat
- Clinical outcomes were assessed using Knee injury and Osteoarthritis Outcome Score (KOOS) and assessment of ligament laxity. All patients were followed up for a minimum of 24 months.

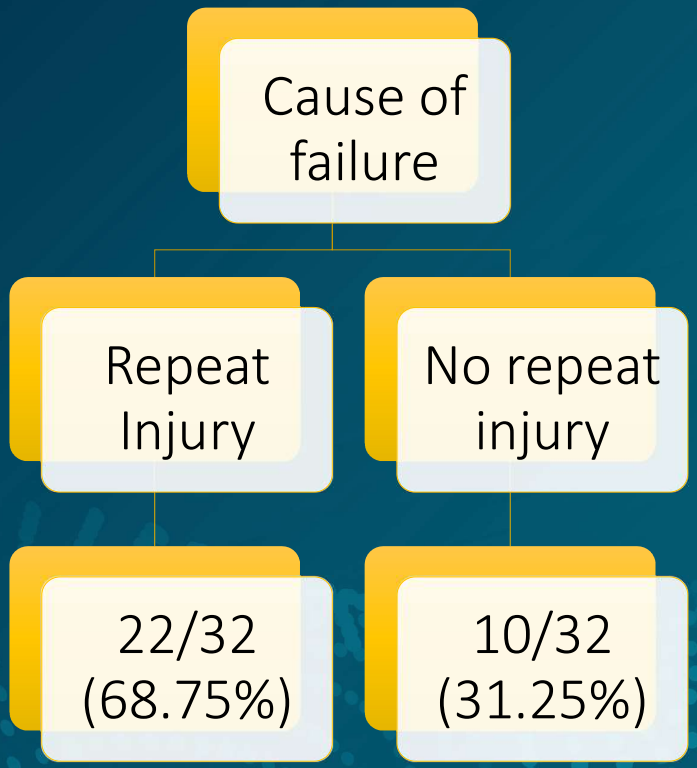
Exclusion Criteria

- Severe arthrofibrosis
- Active infection or past history of infection
- Lost for follow-up

Demographics

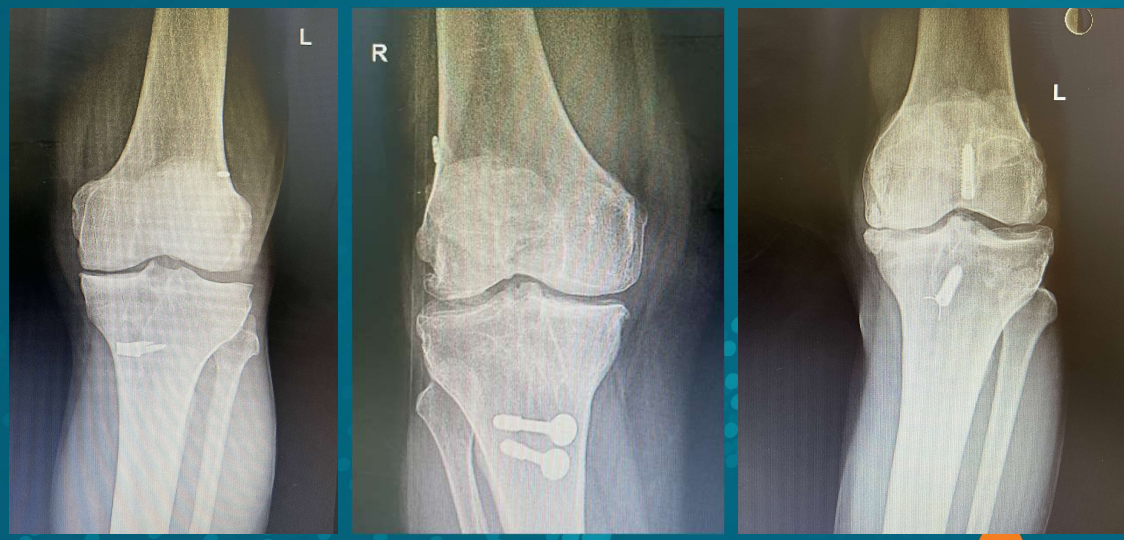
- Total: 37 knees in 37 patients
- Excluded: 5 patients; Final sample: 32 knees
- All were male; Professional and semi-professional football players
- Mean age - 29 years (range: 24–45 years)
- Right side (20) > Left side (12)
- Duration between index surgery and failure ranged f
  to 150 months (12.5 years)
- Follow-up – minimum 24 months

Cause of failure



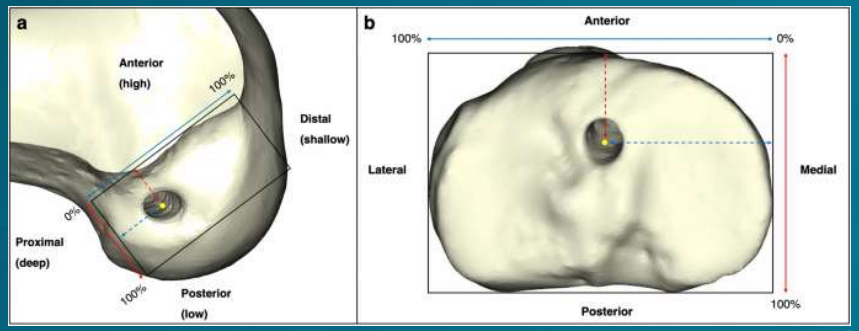
Methods of fixation

- Hybrid > Both aperture > Both suspensory



- High noon fixation – 10/32 (31.25%)

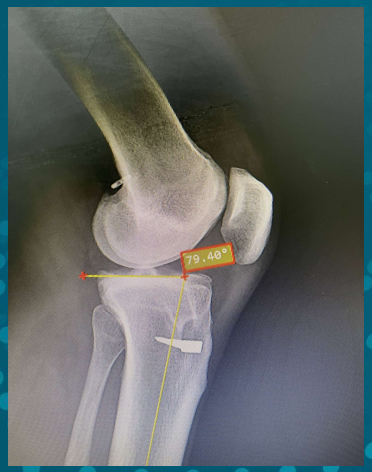
Tunnel position

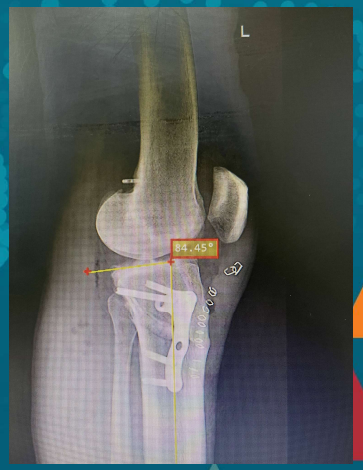


- Femoral tunnel position
  - 100% ideal in 37.50% (12/32)
  - 50% ideal in 31.25% (10/32)
  - 0% ideal in 31.25% (10/32)
- Tibial tunnel position
  - 100% anatomical in 62.50% (20/32)
  - 50% ideal in 31.25% (10/32)
  - 0% ideal in 6.25% (2/32)
- Tunnel errors: Femur (62.50%) > Tibia (37.50%)
- Tunnel management: None required two-stage revision

Posterior tibial slope

- The mean PTS was higher in patients with contact failure in comparison to non-contact failure (9.8° vs 7.5°, respectively; *P* = 0.02)
- No difference in PTS of right side knees vs left side knees





Graft used for Revision ACLR

BPTB Graft

18/32
(56.25%)

Aperture(Bio)

Hamstring
Graft +/- HTO

10/32
(31.25%)

Hybrid/ Suspensory
(if HTO)

Quadriceps
Graft

4/32
(12.5%)

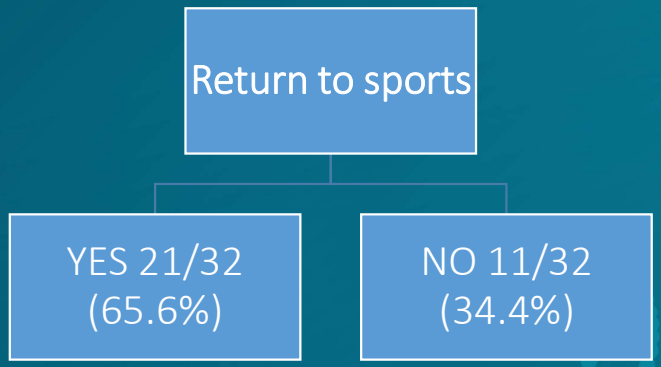
Hybrid/Suspensory
(if Hto)

Functional Outcome Scores

- Lysholm scores:
  - Good knee function in 3 patients (9.3%; 77–86 points)
  - Fair in 27 patients (81.25%; 67–76 points)
  - Poor in 3 patients (9.3%; < 66 points)
- Global KOOS score:
  - Improved from 71.3 to 91.5

Return to sports and recreation activity

- Return to recreational (85.7%)
- > Professional (14.3%) sports



Failure

- Failure of revision surgery – **3/32** (9.3%)
  - Two patients (both were quads graft revision) underwent re-revision ACL reconstruction with BPTB graft
  - One patient underwent high tibial osteotomy and repair of avulsed reconstructed ACL

Failure

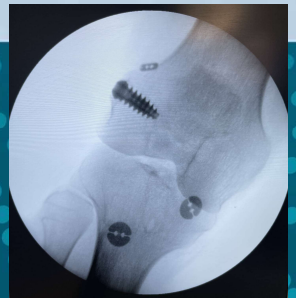
- Failure of revision surgery – 3/32 (9.3%)

Two patients (Quads graft revision)

- Underwent re-revision ACLR with BPTB graft

One patient (Hamstring revision + ALL recon)

- Underwent HTO and repair of avulsed reconstructed ACL



Conclusion

- Preoperative planning - essential component of successful recon
- Alignment and mechanical causes - most common reason for non-contact failure
- Failures are high following Revision ACLR reconstruction
- Structured rehabilitation protocol is essential after a well done Revision ACLR

References

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