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Simultaneous Bilateral ACL Reconstruction - A Case Report

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Faculty Disclosure Information

- Nothing to disclosure



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Introduction

- Bilateral ACL injuries are rare, comprising 0.5% to 2% of ACL ruptures annually.
- Staged reconstruction is the conventional approach, addressing each knee separately.
- This staged method extends the total recovery period and delays return to full activity.
- Simultaneous bilateral ACL reconstruction is an alternative strategy.
- It may reduce time away from work or sports and streamline rehabilitation.
- However, proper graft selection and surgical technique are crucial for success.



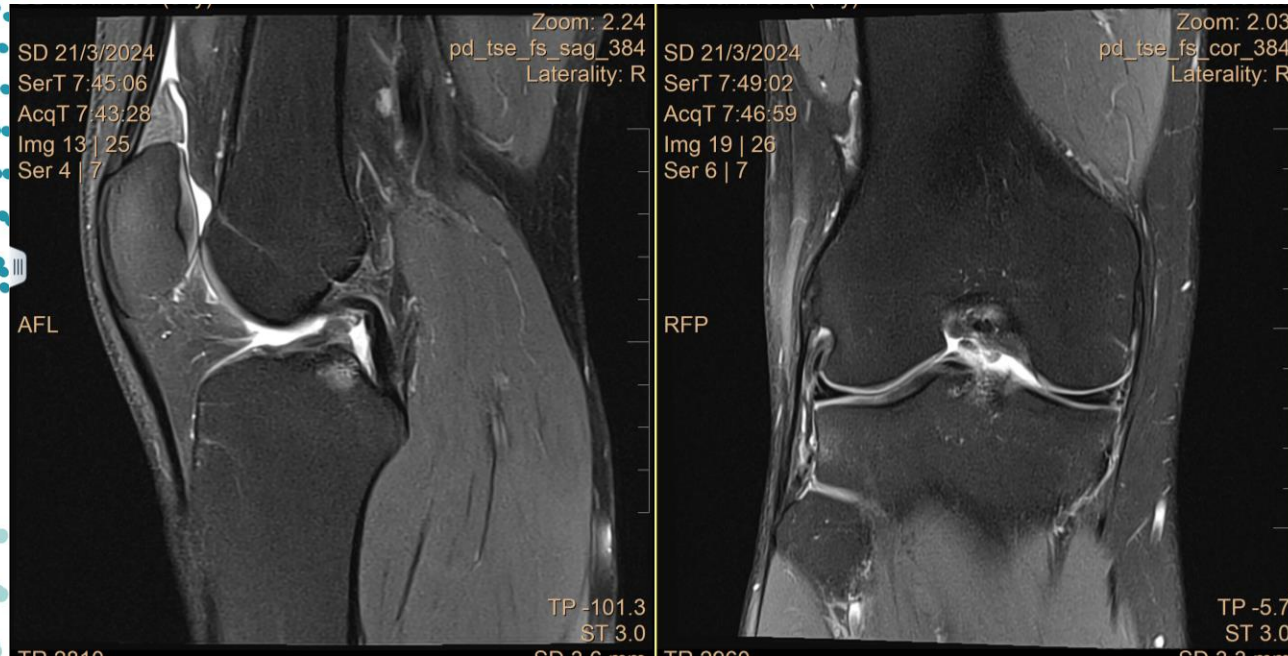
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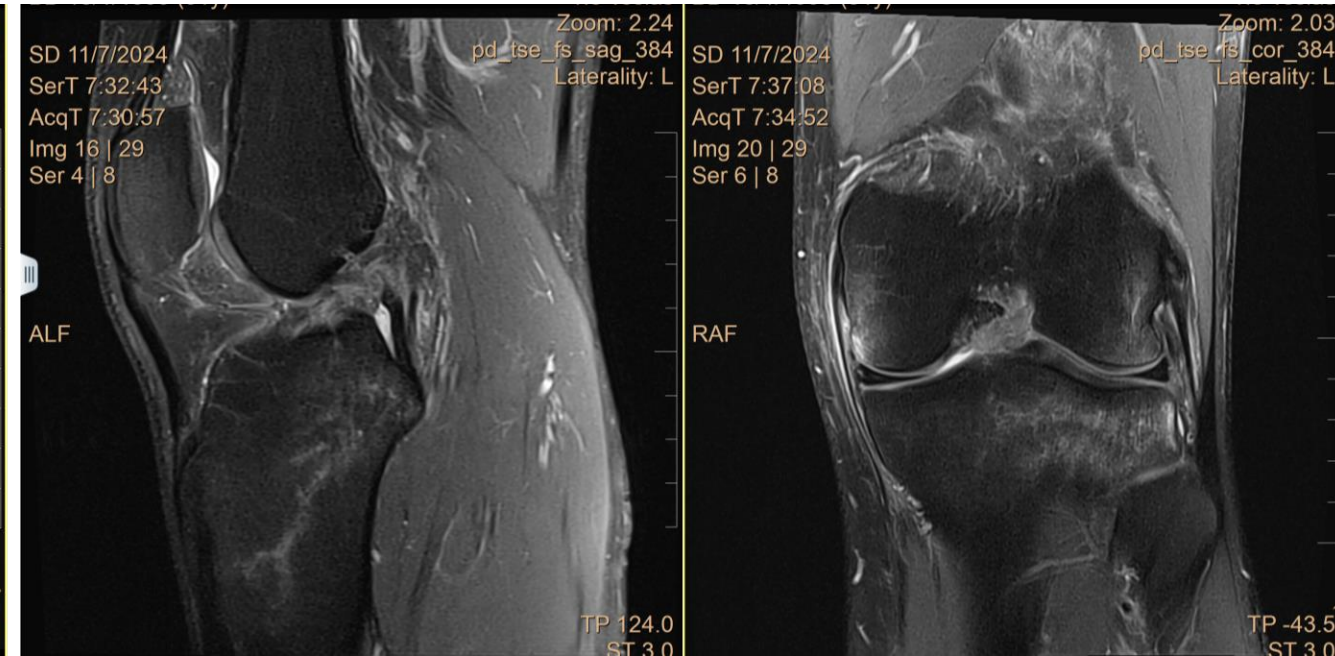
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Methods

- **Case presentation:** 31-year-old male with bilateral ACL rupture.



Right knee



Left knee



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Methods II

Patient positioning



OR set up



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Methods III

- Autograft: left semitendinous (ST) tendon and right rectus femoris(RF) tendon.
- Allograft: ST and RF



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Methods IV

- Bilateral quadrupled graft configuration.
- Femoral fixation: cortical suspension device.
- Tibial fixation: interference screw



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Results

- The patient had an uneventful postoperative recovery with no acute complications.
- At two months follow up, surgical debridement and antibiotics due to superficial infection of surgical site in left knee.
- A structured rehabilitation program focused on quadriceps strength, range of motion, and proprioception.



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Results II

- At 6-month follow-up, the patient had full range of motion and no pain.
- No significant differences in knee stability or strength have been observed.
- Comparative PROMs:
 - Improvement in all functional tests (KOOS, Lysholm, subjective IKDC)



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Discussion

- Simultaneous bilateral ACL reconstruction offers significant advantages.
- Combining autograft and allograft preserves native tissue while ensuring adequate graft material.
- Graft selection was optimized for strength, compatibility, and surgical feasibility.
- This approach demonstrated excellent functional outcomes.
- Streamlined rehabilitation was an additional benefit of the technique.



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Conclusion

- Simultaneous bilateral ACL reconstruction is a viable option for select patients.
- Combining autograft and allograft optimizes graft availability and strength.
- This technique reduces total recovery time.
- It enables a synchronized rehabilitation process.
- High surgical efficacy and favorable functional outcomes are maintained.



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Thank you very much



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