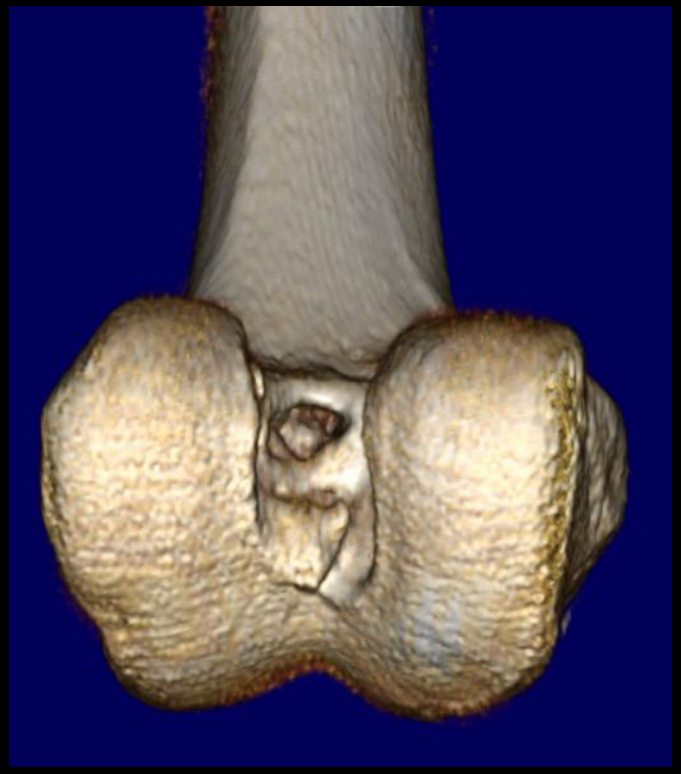
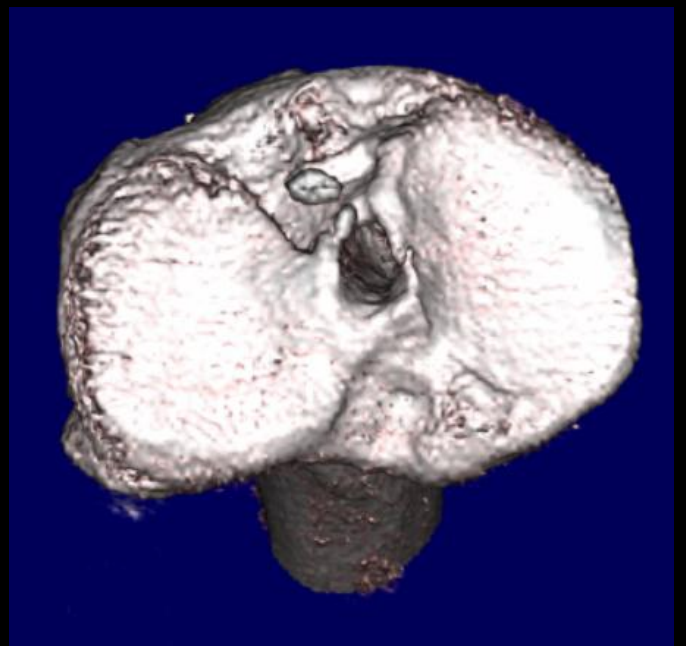
ACL reconstruction revision with staged bone grafting



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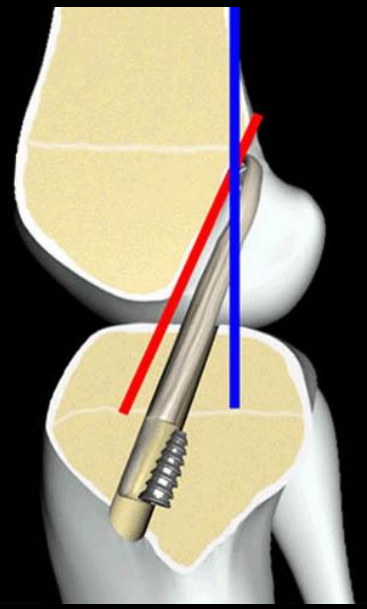
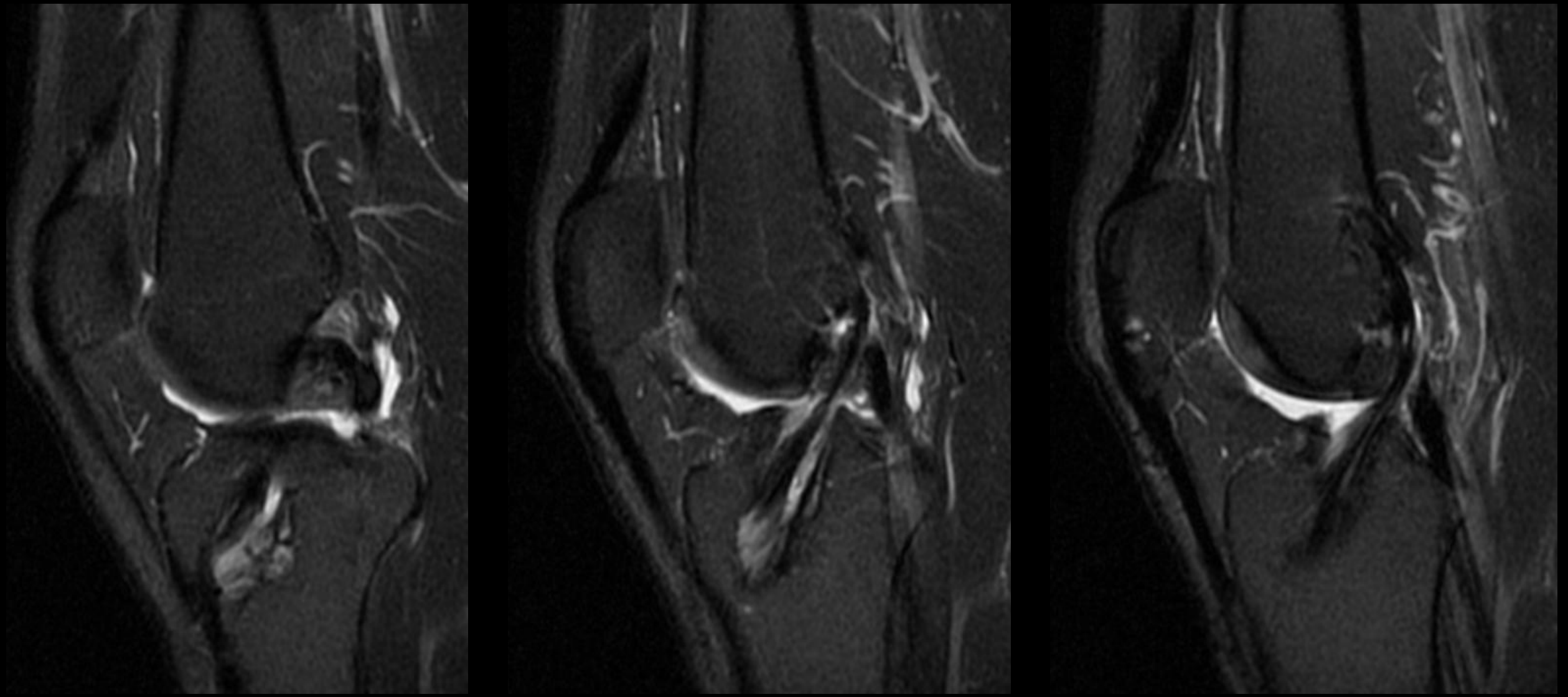
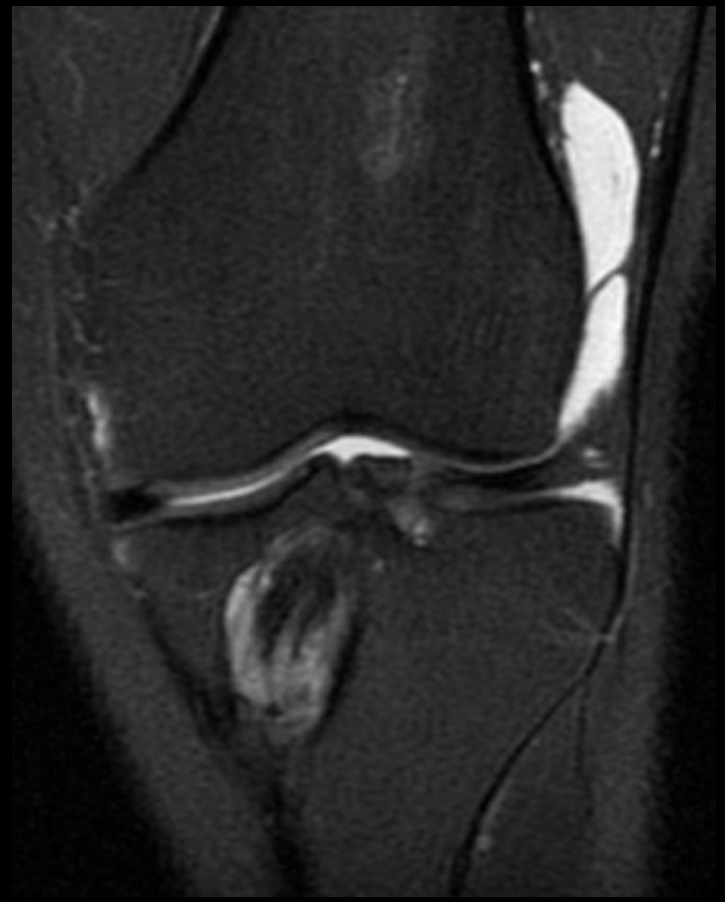
Tunnel Positions

- Positioning of the femoral tunnel is the primary factor in maintaining graft isometry.
- Positioning of the tibial tunnel is the primary factor in preventing impingement of the graft against the roof of the intercondylar notch.



http://www.ajronline.org/doi/full/10.2214/AJR.09.3200

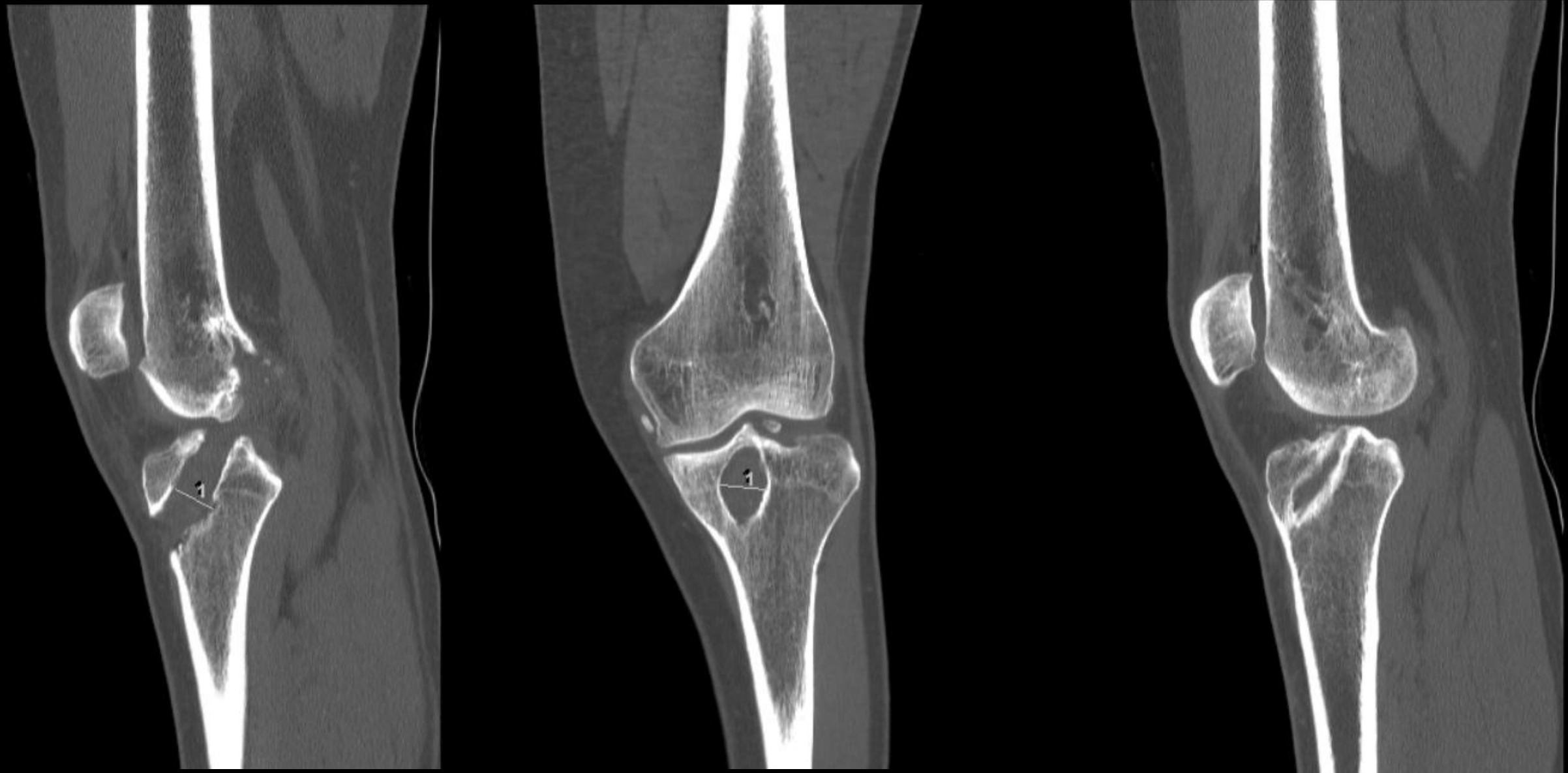




Tunnel Size

- Although no significant correlation between tunnel enlargement and clinical outcomes has currently been reported, tunnel widening may have serious implications for patients requiring ACL revision surgery.

Crespo B, et al. Measurements of bone tunnel size in anterior cruciate ligament reconstruction: 2D versus 3D computed tomography model. J Exp Orthop. 2014 Dec; 1: 2.



Skeletal Radiol (2017) 46:161–169
DOI 10.1007/s00256-016-2535-z

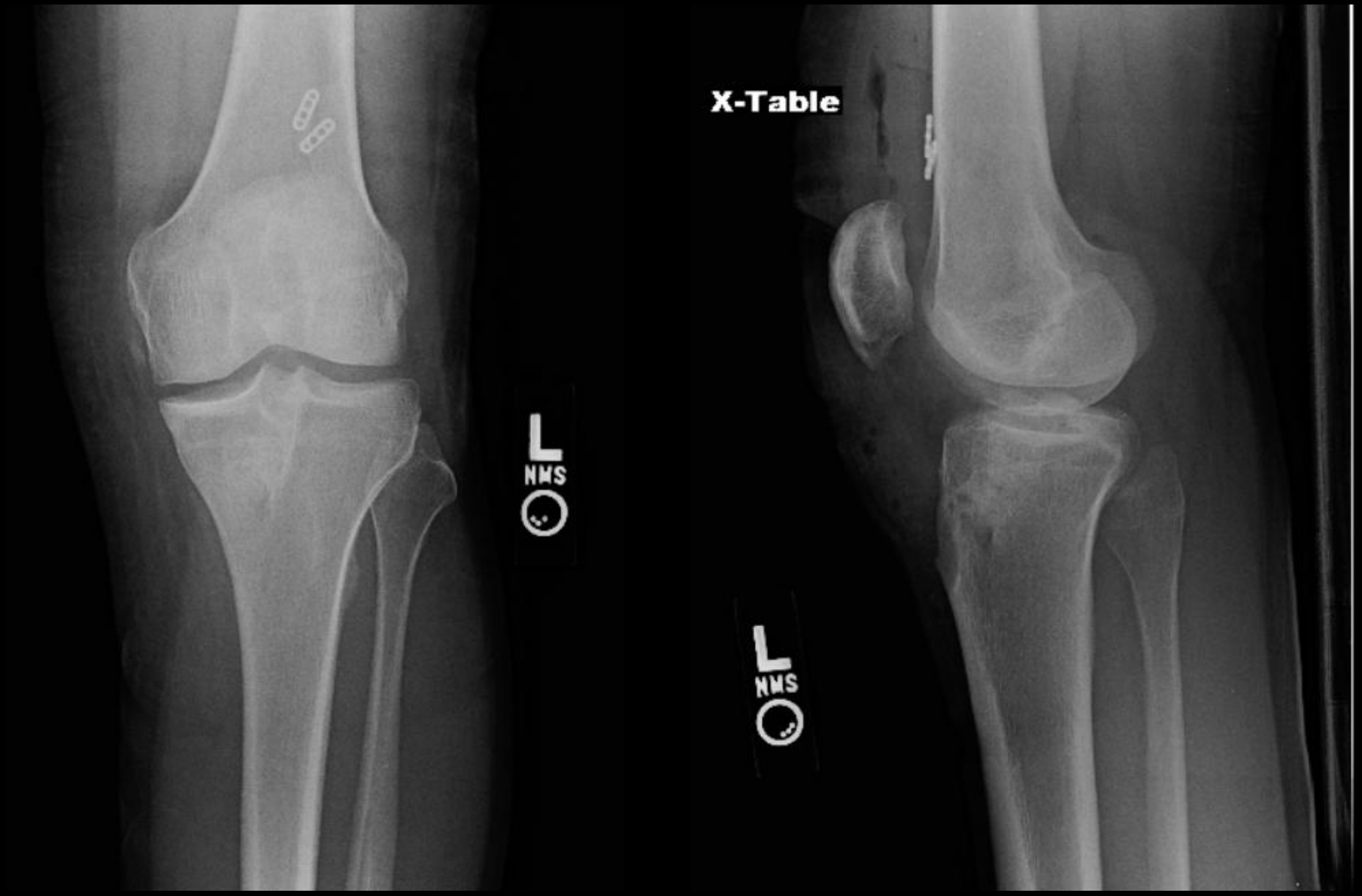
REVIEW ARTICLE

Anterior cruciate ligament reconstruction tunnel size: causes of tunnel enlargement and implications for single versus two-stage revision reconstruction

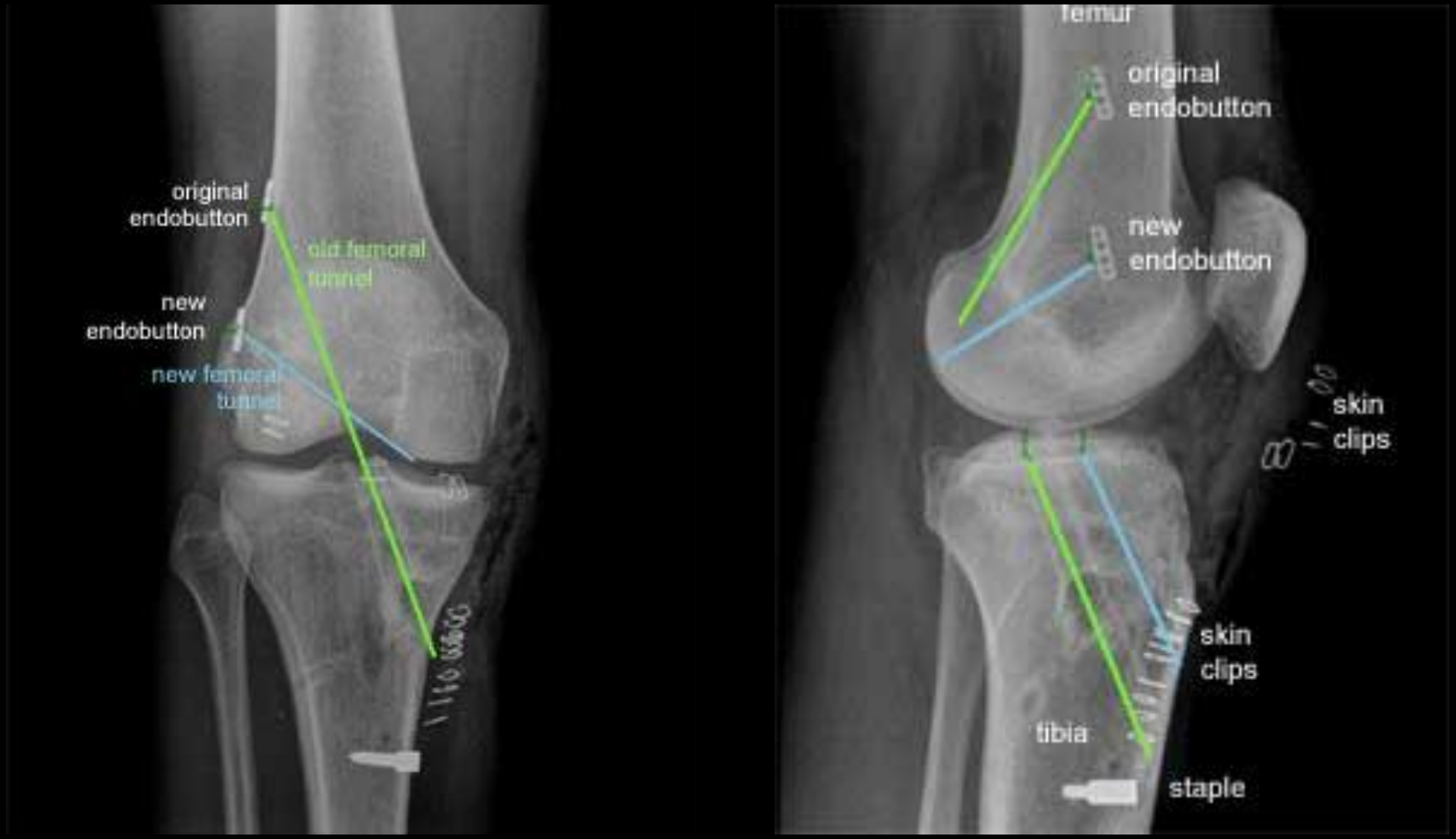
Magda Rizer[1] · Gregory Brian Foremny[2] · Augustus Rush III[3] · Adam D. Singer[4] · Michael Baraga[5] · Lee D. Kaplan[6] · Jean Jose[7]

1. Expected immediate post-operative ACL tunnel diameter should be around 10 mm regardless of graft selection.
2. Tunnel widening is generally cavitary, frequently maximal in the mid-zone of the tibial tunnel.
3. One of the main factors associated with tunnel enlargement is malposition of the tibial tunnel, which likely leads to graft micromotion.
4. A two-stage revision involves an initial bone grafting procedure to fill the tunnels, followed at least 3 months later with revision surgery.
5. A tunnel diameter greater than 15 mm will require two-stage surgery when the original tunnels are in anatomic position, while revision with a tunnel diameter of less than 10 mm can be accomplished in a single surgery. Revision of tunnels 10–15 mm differs depending upon tunnel shape, position and the treating surgeon's preference.

Post tibial tunnel bone grafting



Post ACL reconstruction revision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