

The transverse ligament as a landmark for tibial sagittal insertions of the anterior cruciate ligament: a cadaveric study

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Purpose : The purpose of this study was to determine the relation between the position of the transverse ligament, the anterior edge of the anterior cruciate ligament (ACL) tibial footprint, and the center of the ACL tibial insertion. We used arthroscopy for localization of the anatomic landmarks, followed by insertions of guide pins under direct visualization, and then the position of these guide pins was checked on plain lateral radiographs.

Methods : The transverse ligament and the anterior aspect of the ACL tibial footprint were identified by arthroscopy in 20 unpaired cadaveric knees (10 left and 10 right). Guide pins were inserted with tibial ACL adapter drill guides under direct observation at the transverse ligament, the anterior aspect of the tibial footprint, and the center of tibial insertion of the ACL. Then, plain lateral radiographs of specimens were taken. The Amis and Jakob line was used to define the

attachment of the ACL tibial insertion and the transverse ligament. A sagittal percentage of the location of the insertion point was determined and calculated from the anterior margin of the tibia in the anteroposterior direction.

Results : The transverse ligament averaged $21.20\% \pm 4.1\%$, the anterior edge of the ACL tibial insertion averaged $21.60\% \pm 4.0\%$, and the center of the ACL tibial insertion averaged $40.30\% \pm 4.8\%$. There were similar percent variations between the transverse ligament and the anterior edge of the ACL tibial insertion, with no significant difference between them ($P = .38$). Intraobserver and interobserver reliability was high, with small standard errors of measurement.

Conclusions : This study shows that the transverse ligament coincides with the anterior edge of the ACL tibial footprint in the sagittal plane.