

Does the DRUJ regain stability after foveal reinsertion of the TFCC compared to reconstruction of the TFCC? **84.**

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Background: The Triangular Fibrocartilage Complex (TFCC) is the main stabilizer of the distal radio ulnar joint(DRUJ). After lesion of the TFCC, stability of the DRUJ can be restored with different surgical techniques, but in-vivo methods to quantify and compare the stabilizing effect of these are missing. We have recently described and validated a new and precise digitally reconstructed radiograph(DRR) radiostereometric analysis(RSA) method named AutoRSA for evaluation of joint kinematics by use of CT bone-models.

Purpose / Aim of Study: To evaluate DRUJ stability before and after surgical TFCC reinsertion or reconstruction, respectively.

Materials and Methods: Ten human donor arms (8 males, mean age 78 y) were evaluated with RSA prior to intervention(native), after cutting the proximal and distal TFCC insertions (cut), and again after randomization to foveal reinsertion of the TFCC(n=5) or reconstruction ad modum Bryan Adams(n=5). During RSA imaging DRUJ stability was tested with the Piano Key test in a standardized test-rig. AutoRSA was used for analyses and standardised anatomical axes and coordinate systems of the forearm were used to describe the kinematics and stability.

Findings / Results: In all cadavers, the native DRUJ translated 1.76mm (CI95 0.61;2.90), increasing to 2.48mm (CI95 1.61;3.36) after inflicted TFCC lesion ($p=0.04$). Both foveal reinsertion and TFCC reconstruction reduced DRUJ translation towards stability of the native joint, with a tendency of overtightening compared to the native joints($p>0.25$). Compared to the cut situation, the DRUJ translation was reduced noticeably after foveal TFCC reinsertion($p=0.007$), while the effect of the Bryan Adams procedure was non-significant($p=0.35$).

Conclusions: Foveal TFCC reinsertion stabilized the DRUJ markedly, but we did not find significant stabilizing effect of the Bryan Adams reconstruction.