AB217. 29. Medial patellofemoral ligament reconstruction femoral tunnel accuracy in a non-fluoroscopic technique

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Background: Medial patellofemoral ligament reconstruction (MPFL-R) is designed to re-institute the medial check reign of the patella to prevent lateral translation. There is considerable debate within the literature regarding the optimum position for femoral tunnel placement and whether intra-operative fluoroscopy is required to ensure accurate positioning. We aim to assess the radiographic results of patients who have undergone MPFL-R by an open, non-fluoroscopic technique, to ascertain whether accurate tunnel placement is reliably achieved.

Methods: Fifty-seven patients who underwent MPFL-R by the senior author (CC) using semitendinosus autograft and interference screw fixation were identified. Post-operative X-rays were assessed for adequacy and had the centre of the femoral tunnel measured in relation to anatomic landmarks: Blumensaat's line, the posterior femoral cortical line and posterior femoral condylar line. Measurement of the antero-posterior distance at the posterior femoral condylar line allowed size standardization. Tunnel position was considered 'excellent' <6 mm from the confluence point, 'good' <12 mm and 'poor' >12 mm.

Results: Seven X-rays were found to be inadequate (unacceptable rotation on lateral film) leaving 50 for analysis. The mean antero-posterior distance at the posterior femoral condylar line was 54.3 mm. Position of the tunnel was graded excellent in 41/50 (82%), good in 5/50 (10%) and poor in 4/50 (8%).

Conclusions: Our results are consistent with the literature standard. The benefits of using intra-operative fluoroscopy are debated due to the difficulty in identifying anatomical landmarks accurately. These results suggest that it is not necessary. There is discussion within the literature about the optimum position for the femoral tunnel, with the senior author preferring Kaider's 'confluence' point as the ideal isometric point. Our results confirm that a good or excellent position of the femoral tunnel during MPFL-R can be achieved in 92% of patients without fluoroscopic guidance.

Keywords: Femoral tunnel accuracy; patellofemoral ligament reconstruction; non-fluoroscopic technique

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