to severe OA (9 of 10 patients (90%) who had Ahlbäck grade ≥2 were dissatisfied, p <0.01). In addition, UKA showed superior satisfaction compared with HTO in patients with ≥ 60 Y (30 in UKA vs. 23 in HTO, p <0.001) and < 5°mFTA (29 in UKA vs. 24 in HTO, p = 0.02), and Ahlbäck grade ≥ 2 (28 in UKA vs. 16 in HTO, p < 0.01).
Discussion and Conclusion: Older age and lesser varus deformity were associated with higher patient satisfaction following UKA and severe OA was identified as a risk for dissatisfaction after HTO. Surgeon should be aware that factors associated with patients satisfaction following HTO and UKA might be different and age, varus deformity and OA severity should be considered when deciding whether to perform HTO or UKA.
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B0539

Research of prior-localization femoral tunnel in medial patellofemoral ligament reconstruction

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Background: With the deepening research in patellofemoral joint instability, medial patellafemoral ligament (MPFL) is found vital to provide medial patellar stability; thus MPEL reconstruction is one of the major surgical treatments for recurrent patellar dislocation. As the MPFL isometry is mainly decided by femoral attachment, the accuracy of graft placement in medial femoral in MPFL reconstruction is crucial to knee function recovery after surgery. Intraoperative fluoroscopy position is a common clinical method, but intraoperation is complicated and the femoral tunnel placement is not accurate enough, with prolonged surgical time and additional surgical risks.
Material: To introduce the method of prior-localization femoral tunnel by using a special positioning tool under the X-ray before surgery, and to study the effect on the knee function recovery after MPFL reconstruction.
Method: A retrospective analysis of 21 cases (21 knees) of recurrent patellar dislocation undergoing MPFL reconstruction and patellofemoral lateral retinaculum lysis on the clinical date between February 2012 and January 2014. 3 males and 18 females, aged (21.59 ± 2.24) years on average (range, 15-37 years). Patients were placed on table after general anesthesia, and positioning tool was placed on the medial femoral condyle of the injured knee joint. Use C arm radiographic machine 1 or 2 times, according to Schöttle method to locate femoral tunnel placement and make a mark on the relative skin of medial knee. Make a 1cm incision on the marked skin, and drill femoral tunnel. Make a record of the total time used on the localization and surgery. The effectiveness was evaluated using Lysholm knee functional score after operation. The distance from the center of the femoral tunnel to the femoral isometric point was measured on CT three dimensional reconstruction image. Whether the femoral tunnel position was isometric was evaluated.
Results: All patients underwent the operation successfully, type of surgical incision I. All were followed-up 12 to 18 months, average (14.59 ± 2.24). No patellar semi-dislocation or dislocation were showed, fear test is negative. The time of X-ray to position the femoral tunnel was (2.12 ± 1.14) min , total surgical time was (36.32 ± 3.44) min. Lysholm knee functional score is 87 ~ 100 , average (95.8 ± 3.12) at the latest follow-up. Postoperative measured distance between femoral tunnel centre and femur was 2 to 7 mm, average (3.61 ± 1.21) mm , all femoral tunnels positions being isometric tunnels.
Discussion: With the method by using positioning tool, it's accurate to locate the MPFL femoral tunnel, but the follow-up of this study was comparatively short, and future relative complications such as osteoarthritis are to be studied in further follow-up. Apart from the femoral tunnel position, the graft tension in MPFL reconstruction is another important factor affecting the postoperative joint function. The intraoperative focus is to ensure that knee joint action would not be limited after graft fixation.
Conclusion: It's easy, convenient and accurate by using positioning tool under C arm to prior-locate MPFL femoral tunnel before surgery, and avoid unnecessary radiation caused on the patients and surgical staff by repeated C arm X-ray in the operation. It also shorten the time of localization and lay a great foundation for knee joint function recovery from the recurrent patellar dislocation.
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B0542

Retrograde cross-pin (RigidFix) femoral fixation in anatomic single-bundle ACL reconstruction with the transportal technique

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Background: Although the safe zone of transverse femoral fixation by means of an anteromedial portal (transportal technique) minimizes the risk of damage to the saphenous nerve, femoral artery, and peroneal nerve, anterograde transverse pins which are placed percutaneously through the lateral femoral condyle to medial condyle, pose a risk of iatrogenic damages to the posterolateral structures of the knee joint. The research group hypothesized that retrograde (through the medial femoral condyle to lateral condyle) cross-pin (RigidFix, DePuy Synthes Mitek Sports Medicine, Raynham MA USA) femoral fixation using transportal technique would decrease the risk of iatrogenic damages to the posterolateral structures of the knee joint without increasing the risk of iatrogenic damage to the medial structures.
Methods: A pilot cadaver stuff was performed to develop the surgical technique: the anterior cruciate ligament (ACL) was reconstructed arthroscopically in 5 fresh cadaveric knees by the same author. After complete excision of the ACL by using of a shaver, the lateral wall of the intercondylar notch was cleared to show the foot-print of ACL femoral insertion. A guidewire was inserted through the anteromedial portal and was introduced into the center of the foot-print of the ACL femoral insertion with the knee flexed at 120°. The femoral tunnel was constructed through the anteromedial portal, with a length of 30 mm. The Rigidfix femoral guide frame, which was originally developed for a transtibial drilling technique, was introduced through the anteromedial portal into the femoral tunnel. By means of the guide frame, two sleeves for introducing Rigidfix pins were fixed to the lateral face of the lateral condyle. From negative 20° to negative 40°(rotational angles about the axis of the femoral tunnel), the drilling angles for the two sleeves were determined by the safe zone for transportal technique. Then, the extra-articular portion of the frame was rotated to lie on the medial femoral condyle of the operative knee joint. The two RigidFix sleeves were fixed to the medial face of the media femoral condyle, after going over the interlocking trocar and drilling through the hole of the guide frame. The drilling angles for the 2 sleeves were determined by the safe zone for transportal technique. Lateral and medial dissections were then performed to measure the distances from the 2 sleeves to the lateral collateral ligament, the popliteus tendon, the lateral gastrocnemius tendon, the medial patellofemoral ligament, and the medial collateral ligament. Then, a clinical series of 106 patients were selected on which to perform retrograde RigidFix fixation using the newly-developed transportal technique between January 2010 and May 2012. All of them were operated by the same surgical team using the RigidFix frame developed for a transtibial drilling technique, and underwent computed tomography with 3D reconstruction post-operation.
Results: In the cadaveric study, the popliteus tendons were partially torn by the distal sleeve in 3 specimens. The average distance to the lateral collateral ligament was shorter than 1.5mm (range, 0.5 to 2.5 mm). The lateral gastrocnemius tendons were pierced by proximal sleeve in 4 specimens. Also, 4 specimens demonstrated the point of entry of the distal sleeve at the border of the joint cartilage of the lateral face of the lateral femoral condyle. The minimum distance between the distal sleeve to the medial patellofemoral ligament was 20 mm, and to the medial collateral ligament was 25mm. In the clinical series, the extra-articular portion of the frame couldn't be rotated to the medial condyle in 8 cases (7.5 %) because of the bigger thigh circumference of the patients. In 3 cases (2.8%), one of the crosspinholes missed the femoral tunnel. In no case (0.0%) did the tocar breach through the bone cortex of the lateral femoral condyle.
Conclusions: Retrograde RigidFix femoral fixation using transportal technique can have a low incidence of iatrogenic damages to the medial and lateral femoral condyle structures of the knee joint.
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B0546

The effect study of arthroscopic reconstruction of posterior cruciate ligament with ligament advanced reinforcement system Y-shape double bundles artificial ligament

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Backgound: ligament advanced reinforcement system is a graft choice for ligament reconstruction , we used ligament advanced reinforcement system Y-shape double bundles to reconstruction the posterior cruciate ligament , it's necessary to know the clinical effect of this technique.
Method: A retrospective analysis was conducted among 11 patients with posterior cruciate ligament injuries, who were enrolled from Department of Orthopaedics in Guangzhou General Hospital of Guangzhou Military Area Command of Chinese PLA from January to July in 2007. Arthroscopic reconstructions of posterior cruciate ligament were performed by using the ligament advanced reinforcement system (LARS) Y-shape bundles artificial ligament. Y-shape double cords of LARS artificial ligament were fixed at 90°and 30° flexion respectively. All 11 patients received the follow-ups.
Result: There were no complications occurred, such as synovitis, ligament rupture or limited motion. X-ray results proved the extrused screws were positioned well. Posterior drawer test, Lachman's test and pivot shift test were negative after surgery. According to the international knee documentation committee activity grades, grade D were 8 cases and grade C were 3 cases preoperatively; while grade A were 10 cases and grade B was 1 case postoperatively, with the significant differences ($\chi 2$=9.142, P < 0.05). The clinical assessment judging by lysholm knee functional scoring system showed that, average scores before operation was (65.2 ± 5.6) and increased to an average of (90.7 ± 3.6) postoperatively (t=10.572, P < 0.05).
Conclusion: LARS artificial ligament is good grafts for posterior cruciate ligament reconstruction, can do early functional exercise and have good clinical effect.
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B0551

Biomechanics of single-tunnel double-bundle anterior cruciate ligament reconstruction using fixation with a unique expandable interference screw

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Background: Single-tunnel double-bundle (STDB) anterior cruciate ligament (ACL) reconstruction can restore biomechanical function and anatomic structure, but existing methods of graft