Anterior cruciate ligament

Anterior cruciate ligament

The most sensitive test for evaluation of the ACL is the Lachman test. /uni25CF The Lachman test (Figure 35.32). Flex the knee to 15–30° and pull the proximal tibia gently forwards. Exces - sive laxity may indicate rupture of the ACL. Anterior translation of the tibia associated with a soft or no end point is a positive test. The test may be negative in chronic ruptures because the ACL stump can scar to the PCL. /uni25CF Anterior draw test (Figure 35.33a). Flex both knees to 90° and look for a posterior sag (compare the height of the tibial tuberosities looking from the side). This may indicate an injury to the PCL. Stabilise the feet by sitting on them. Now place your hands around the proximal and posterior aspect of the tibia. With your index fingers, push up the hamstrings to encourage them to relax. Now draw the tibia gently forwards and measure any laxity , comparing it with the other knee. The degree of laxity can be graded: grade I (0–5 /uni00A0 mm), grade II (5–10 /uni00A0 mm) and grade III (>10 /uni00A0 mm). Posterior cruciate ligament The PCL is the primary restraint to posterior tibial translation between 30° and 90° of knee flexion. At 90° knee flexion, the PCL controls the majority of posterior translation of the tibia. Look for a posterior sag with the knees flexed to 90°. The posterior draw test is the most reliable clinical test for a PCL injury . /uni25CF Posterior draw test (Figure 35.33b). Perform the test with the knee flexed to 90°. Push the anterior aspect of the proximal tibia posteriorly and compare any laxity with the other side. If more than 10 /uni00A0 mm of posterior Thomas Porter McMurray , 1887–1949, Professor of Orthopaedic Surgery , Liverpool University , Liverpool, UK. Sir Harold Arthur Thomas Fairbank , 1876–1961, orthopaedic surgeon, King’s College Hospital, London, UK. flexion, a combined PCL and posterolateral corner injury may be present. An evaluation of the competency of the posterolateral corner is necessar y . Menisci The presence of palpable joint line tenderness is the most sensitive clinical examination test for a meniscal tear. Flex the knee to 90° and palpate the joint line using your thumb and index finger. Note any areas of tenderness. Tests for meniscal damage are not very reliable but, combined with a history of mechanical symptoms, locking, catching and pain, may be helpful. With posterior medial meniscal tears patients su ff er pain on high flexion or squatting. The well-known test for meniscal tears is McMurray’s test. The patient lies supine with their knee flexed to 45° and hip flexed to 45°. The examiner braces the lower leg: one hand holds the ankle; the other hand holds the knee. For assessment of the medial meniscus, palpate the medial joint line with the knee flexed. A ‘click’ may be felt, suggesting meniscus relocation. A valgus stress is applied to the flexed knee. Externally rotate the leg (toes point outward), and slowly extend the knee while it is still in valgus. Patellofemoral joint The patella normally enters the trochlea from a lateral position and becomes centralised with increasing knee flexion, travel - ling in a ‘J’ pattern. /uni25CF Patellar tracking (Figure 35.34). Sit the patient and ask them to let their legs hang o ff the end of the couch with the knees flexed to 90°. Ask the patient to extend the knee slowly to full extension. Towards the end of extension, look for lateral subluxation of the patella (‘J’ sign). This indi - cates maltracking. /uni25CF Patellar apprehension (Fairbank’s) test (for insta - bility). Attempt to displace the patella laterally with the knee in extension. Patients with instability

contract their quadriceps muscle or complain of pain. With the patient supine and the quadriceps relaxed, flex the knee to 30° while trying to push the patella laterally . With instability the patient may react with apprehension. In addition, the quadriceps muscle may contract in an attempt to realign the patella. Patellar tendon The patellar tendon serves as the distal limit of the extensor mechanism. Rupture usually occurs at the osseotendinous junction. This results in an inability to actively perform and maintain full knee extension. A rupture presents with di ff use swelling in the anterior knee. A high-riding patella (patella alta) is present secondary to the unopposed pull of the quadriceps muscle. A defect in the tendon is usually palpable. When the rupture extends through the medial and lateral retinacula, active extension is lost.

(b) Figure 35.33 (a) Anterior draw test for anterior cruciate ligament sta bility; (b) posterior draw test for posterior cruciate ligament stability.

Summary box 35.9 Knee examination /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF /uni25CF

Inspection of the standing patient Front – alignment (varus/valgus/rotational deformity), muscle bulk Side – /f_i xed /f_l exion deformity Back – popliteal swellings, hamstrings Gait – antalgic, high-stepping gait (foot drop), varus thrust Inspection of the supine patient Skin, scars, soft tissues, deformity Palpation of the extensor mechanism, medial and lateral joint lines and collateral ligaments, hamstrings, tibial tuberosity, /f_i bular head Movements Flexion and extension Special tests Patellar apprehension test and extensor mechanism Cruciate ligaments Collateral ligaments Menisci

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