Raviraj A, Anand a, et al. A comparison of early and delayed arthroscopically-assisted reconstruction of the anterior cruciate ligament using hamstring autograft. JBJS Br 2010;92_B:521-6.

Design: Randomized clinical trial

Study question: in patients with an acute ACL tear, do outcomes differ between those operated on early and those operated on later?

Population/sample size/setting:

- 99 patients (51 men, 48 women, mean age 31) who diagnosed with a torn ACL on MRI in the emergency department of a hospital in Bangalore, India
- Exclusion criteria were concomitant ligamentous injuries, ipsilateral long-bone injuries or other conditions requiring a procedure on the same knee (e.g., meniscal repair), previous injuries or operations on the same knee, and grade-3 or grade-4 chondral injuries

Interventions:

- Randomization was into two groups: early surgery (n=51) and delayed surgery (n=48)
    - Early surgery group had same-day ACL reconstruction with a quadrupled hamstring graft after arthroscopy had confirmed that a disqualifying chondral defect was not present
        - Postoperatively, a rehabilitation program consisted of progressive ROM exercises, patellar mobilization, electrical stimulation as needed, and strengthening exercises for three months
        - The patients had a hinged knee brace with tough weight-bearing for two weeks, when ROM was restricted to less than 90 degrees of flexion
    - Delayed surgery group underwent a preoperative rehabilitation program with range-of-motion exercises and quadriceps/hamstring strengthening exercises
        - Weight bearing was as tolerated, but a hinged brace was given and locked in extension for walking
        - Surgery was delayed 4 to 6 weeks for this group
        - The postoperative rehab program was the same as for the early surgery group

Outcomes of treatment:

- A blinded physiotherapist uninvolved in the surgery did the outcome assessments

- Patients were followed up at intervals of 2, 6, and 12 weeks postoperatively, then at six month intervals
- No patient was a competitive athlete, but participated equally in recreational cricket or soccer
- 60 patients had grade-1 or grade-2 chondral injuries and 73 had meniscal injuries; all meniscal tears were either debrided or partially excised
- Groups were compared on progression of range of movement, Lysholm scores, Tegner activity scores, clinical testing of stability (pivot-shift, anterior drawer, varus/valgus stress tests), and anterior tibial translation measured with the KT 1000 arthrometer
- Mean followup time was 32 months (range from 26 to 36)
- Recovery of ROM, Lysholm scores, Tegner scores, and all stability tests were comparable between groups; outcome scores at the last followup were equal in both groups

Authors' conclusions:

- Arthroscopic reconstruction of ACL injuries can be done at any time within six weeks of injury without compromising outcomes, provided that a rehabilitation program is done while waiting for surgery, and a hinged knee brace is used for weight bearing during the preoperative delay

Comments:

- All patients had ACL reconstruction, and no information is provided as to whether surgery can be deferred altogether when an active rehabilitation program is started promptly after an acute injury
- The "delayed" group had surgery within 6 weeks, which was within the ten week time frame of the "early" surgery group of other randomized trials
- If there is an advantage to performing some rehabilitation prior to ACL reconstruction, or if there are disadvantages to doing surgery on the day of injury, then the "early" surgery is a comparison of dubious relevance

Assessment:

- Adequate for evidence that in the setting of an acute ACL injury not complicated by high grade chondral defects, surgical repair performed an any time in the first six weeks is as effective as immediate surgery, provided that the preoperative period is accompanied by an exercise rehabilitation and by a locking knee brace to support any weight-bearing