Krych AJ, Thompson M, et al. Arthroscopic Labral Repair Versus Selective Labral Debridement in Female Patients With Femoroacetabular Impingement: A Prospective Randomized Study. Arthroscopy 2013;29(1):46-53.

Design: randomized clinical trial

Purpose of study: to compare outcomes of selective labral debridement with those of arthroscopic labral repair in women with femoroacetabular impingement (FAI)

Population/sample size/setting:

- 36 women (mean age 38.5) being treated for femoroacetabular impingement at the department of orthopedic surgery at the Mayo Clinic in Minnesota
- Eligibility criteria were age over 17, diagnosis of either pincer-type or combined pincer and cam-type FAI, with the diagnosis being made on the basis of history, positive impingement signs on physical exam, and radiographic evidence of pincer-type FAI
    - Imaging evidence consisted of relative acetabular retroversion on an AP pelvic film, with MRI showing labral tear/pathology
    - A cam lesion did not exclude patients as long as a pincer FAI coexisted
- Exclusion criteria were a pure cam-type FAI, male gender, previous hip surgery, Tonnis grade 2 OA or greater, hip dysplasia based on a Wiberg lateral center edge angle less than 25 degrees, and age under 18

Interventions:

- All patients reported for treatment the day of surgery and all underwent diagnostic arthroscopy to evaluate the labrum and articular cartilage
- Randomization was done in the operating room prior to placement of hip traction to either labral repair (n=18) or debridement (n=18)
    - Labral repair was done by removing the overhanging portion of the acetabular rim with a burr, then rolling the labrum back to the bone and suturing it to the rim of the acetabulum
    - Selective debridement was performed with preservation of as much stable labrum as possible to retain a functional seal between the labrum and femoral head, removing the overhanging rim with a burr and ensuring that the remaining labrum was stable to probing
- All patients had further exploration to look for a cam lesion, which was resected with a burr under fluoroscopic guidance
    - In each group, 3 patients had only rim reduction for pincer-type impingement, while 15 patients had removal of tissue for having combined pincer and cam impingement

- Postoperative care was the same in both groups, with immediate initiation of passive motion, 2 weeks of partial weight bearing with crutches, and a hip rehabilitation program beginning between postop day 7 and 10

Outcomes:

- All patients completed Hip Outcome Score (HOS) preoperatively and 1 year postoperatively
- Global assessment was ascertained by having patients describe their hip function as severely abnormal, abnormal, nearly normal, and normal
- For activities of daily living (ADL) on the HOS, both groups improved over the course of one year
    - The labral repair group improved from a baseline of 68.2 to a postoperative score of 91.2
    - The debridement group improved from a preoperative score of 60.2 to a postoperative score of 80.9
    - The repair group had a significantly greater improvement than the debridement group
- For global assessment, both groups had a majority (n=13) of patients reporting their preoperative hip function as severely abnormal
    - Postoperatively, the repair group reported its function as 13 normal, 4 near normal, and 1 abnormal, with none as severely abnormal
    - The debridement group reported its function as 5 normal, 9 near normal, 3 abnormal, and 1 severely abnormal
    - This represented a statistically significant advantage of the labral repair group

Authors conclusions:

- The debridement used in the current study was done in a manner which preserves more labral tissue than has been described in some earlier studies which have performed a complete resection; this was done in order to reduce an apparent risk of subsequent osteoarthritis of the treated hip
- A greater number of the patients in the labral repair group than in the debridement group felt that their hip had returned to normal function, suggesting that proprioceptive receptors in the labrum may be important in hip function
- Although the sample size was small and the followup time was relatively short, the two outcome measures showed significant differences between the two interventions
- Lack of blinding may have influenced the results, since both surgeons and patients were not blinded to the interventions received
- There may be problems with generalizing the results to all cases of FAI, since no men were in the study, and there were no cases in which the labrum was ossified or was too small to permit labral repair to be carried out

Comments:

- The fact that the rehabilitation programs were the same ought to have made it possible to keep the patients unaware of which procedure they had undergone, and this would have controlled one possible threat to internal validity
- However, the fact that randomization was carried out in the operating room ensures that allocation concealment was done, protecting the study from one other factor which can create bias in a randomized trial
- There were relatively few isolated pincer lesions; the majority of FAI cases had combined pincer and cam pathology
- Standing by itself, the study would provide weak evidence of the superiority of labral repair over debridement, but coupled with some earlier non-randomized work and a coherent mechanism supporting the preservation of physiologically functional tissue when possible, the study is adequate for evidence that labral repair is more likely than selective labral debridement to lead to normal hip function one year after surgery
    - Future research could change this estimate of effectiveness, underscoring the provisional nature of “some” evidence statements in the WC guideline system

Assessment: Adequate for some evidence that in women with pincer or combined cam-pincer femoroacetabular impingement, surgery which repairs the labrum is more likely to lead to normal hip function at one year than surgery which debrides part of the labrum