



Fifteen-Year Radiographic Follow-Up of a Prospectively Randomized Clinical Trial Comparing Early versus Delayed Anterior Cruciate Ligament Reconstruction.

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Post-traumatic osteoarthritis (PTOA) after ACL reconstruction remains a difficult problem.



Considered to be a consequence of:

Initial mechanical disruption	Injury to the cartilage	Alteration in articular cartilage homeostasis	Biomechanical disruption
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Recent literature has suggested that 50-80% of reconstructed knees demonstrate post-traumatic arthritis at long term follow-up

Background

Recently, several studies have suggested that inflammatory cytokines present after injury may contribute to the development of PTOA



Several inflammatory cytokines have been identified to increase in concentration over the first 4 weeks after an ACL injury.



This process allows for potential interventions to limit the pathologic inflammatory cascade

Purpose



The purpose of this study was to compare the rate of post-traumatic osteoarthritis between acutely reconstructed ACLs (within 21 days) and delayed reconstructions (greater than 6 weeks).

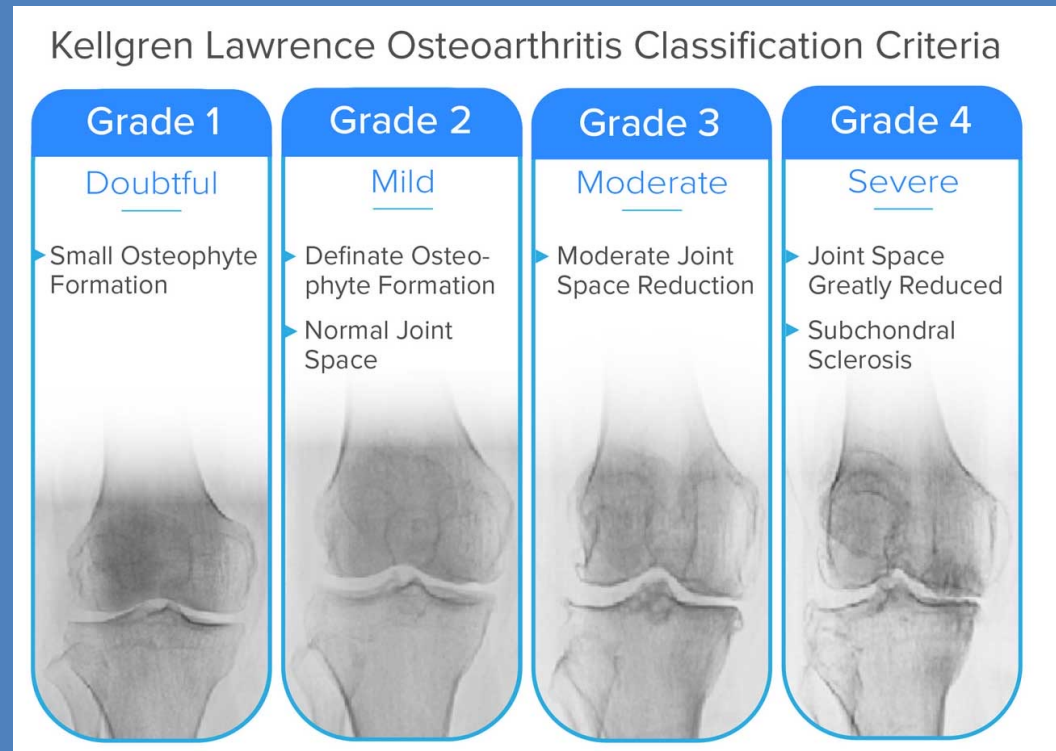
Hypothesis:

Acutely reconstructed ACLs would have a lower rate of PTOA at minimum 15 year follow up



Materials and Methods

- Retrospective review of a previous prospectively randomized controlled clinical trial
- ACL reconstructions were randomized to either early (within 21 days) or delayed (beyond 6 weeks)
- Radiographs obtained at minimum 15 year follow up



Patient Demographics

	Acute	Delayed
Total Cases	35	35
Cases with Follow Up	28	30
Male	23	27
Female	5	3
Age at Surgery	26.4	27.5

	Acute	Delayed
MM Tear	14	15
LM Tear	18	9
Meniscal Repair	8	6
PF Chondromalacia	5	0
MFC Chondromalacia	0	4
LFC Chondromalacia	3	0



Time from Injury to Surgery

- Acute Cohort: 9 days
- Delayed Cohort: 83



Post-Traumatic OA \geq Grade II Kellgren-Lawrence

- Acute 53.3%
- Delayed: 70.0%
- $p=0.01$

Results



KL Grade	Acute	Delayed	p-value
Grade 3	10 (35.7%)	14 (46.7%)	p=0.4
Grade 4	3 (10.7%)	4 (13.3%)	p=0.8
TKA	2	4	p=0.6

Functional Outcome Scores

	Acute	Delayed	p-value
≤ Grade 3 KL	80.6%	77.9 %	p=0.8
≥ Grade 3 KL	61.7%	56.8%	p=0.7

- Knee injury and Osteoarthritis Outcome Score (KOOS)

Conclusion

- Our study demonstrates that an arthroscopic lavage acutely does decrease the overall rate of PTOA, however the rate remained high in both cohorts.
- Additionally, we found no difference in the rate of symptomatic osteoarthritis between the two cohorts

- Our study is not without limitations including this was retrospective review of a previous prospective randomized clinical trial and therefore inherent bias exists. Additionally, several patients were lost to follow up.

Thank you



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