



# BEAR-MOON INTRA-OPERATIVE FINDINGS INCLUDING AN ANALYSIS OF REASONS FOR FAILED SCREENING FOR BEAR PROCEDURE

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# Background



- ▣ Bridge-Enhanced ACL Repair (the BEAR procedure) has shown promising results
  - In preclinical testing with lower rates of osteoarthritis
  - In initial safety cohort and small clinical trials
- ▣ The BEAR-MOON multi-center randomized non-inferiority clinical trial is being conducted to compare the BEAR technique against ACL reconstruction with patellar tendon autograft



## Purpose



- ▣ To present the intra-operative findings from the BEAR-MOON trial cohort
- ▣ Report on the patients excluded from enrollment based on intra-operative findings



# Methods



- ▣ All patients consented for the BEAR-MOON study were included
- ▣ Demographic data (age, sex, ethnicity, and time from injury to surgery)
- ▣ Baseline PROMs (IKDC, KOOS, AKPS, and Marx activity scale)
- ▣ Physical exam (range of motion, Lachman, and pivot shift)
- ▣ Intra-operative findings (length of tibial ACL stump and percent of tibial footprint attachment intact)
- ▣ The group of patients who were excluded from enrollment in the study based on intra-operative findings compared to the patients who were successfully enrolled at the time of surgery



# Results



- ▣ Ninety-one patients evaluated for enrollment intra-operatively
- ▣ 84 successfully enrolled
- ▣ 7 failed intra-operative screening
  
- ▣ Of the 84 patients successfully enrolled:
  - ▣ Mean ACL stump length was  $17.3 \pm 4.26$
  - ▣ 77 patients had 75-100% of the tibial footprint attachment intact
  - ▣ 7 patients had 50-75% intact
  
- ▣ Of the 7 patients who failed intra-operative screening:
  - ▣ Mean ACL stump length was  $10.9 \pm 4.56$
  - ▣ 4 patients had 75-100% of the tibial footprint attachment intact
  - ▣ 1 patient had 50-75% intact
  - ▣ The remaining two had less than 50% intact



# Results



- ▣ The reasons for intra-operative screening failure were:
  - ▣ ACL tibial stump less than 10mm (3 patients)
  - ▣ Tibial footprint attachment less than 50% intact (2 patients)
  - ▣ Concomitant bucket handle meniscus tear (1 patient)
  - ▣ Tibial stump too frayed to repair (1 patient)
  
- ▣ No difference between groups of enrolled and failed enrollment patients in terms of demographics
  - ▣ Age ( $32.9 \pm 9.30$  vs.  $32.1 \pm 12.47$ )
  - ▣ Sex
  - ▣ Time from injury to surgery ( $40.4 \pm 7.83$  vs.  $42.1 \pm 7.03$  days)
  
- ▣ No difference between groups in terms of physical exam findings and PROMs
  - ▣ The only exception is a difference in Marx scores ( $11.0 \pm 4.75$  — enrolled vs.  $13.3 \pm 2.75$  — failed (p-value=0.04))



# Conclusions



- ▣ The majority of patients consented for the BEAR-MOON study are successfully enrolled in the study based on intra-operative findings
- ▣ Most common reason for failure because the tibial stump is too short or too much of it is not intact at the tibia
- ▣ Findings not affected by age, sex, or time from injury to surgery
- ▣ This is important information to share pre-operatively with patients considering undergoing the BEAR procedure
- ▣ Surgeons should be prepared with a back-up plan if the ACL does not appear acceptable for the BEAR procedure at the time of surgery