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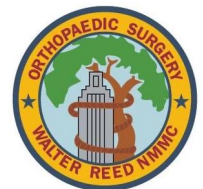


Poster 18: Biomechanics of Caspari Weber versus Metal Button for Biceps Tenodesis

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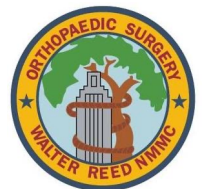


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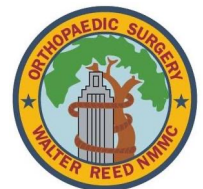
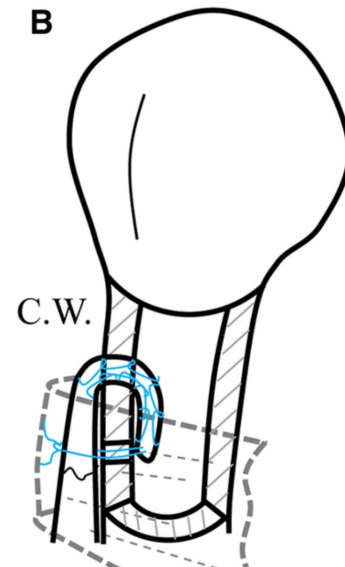
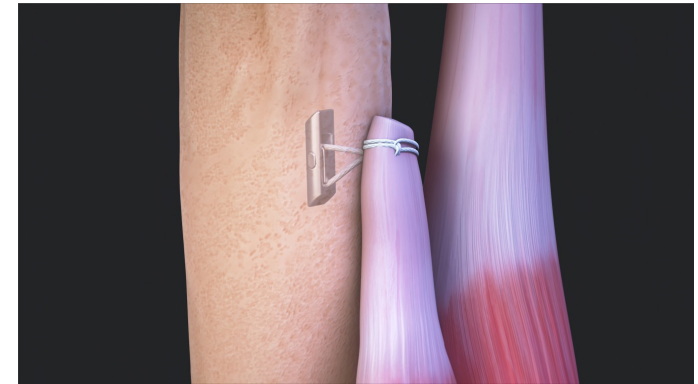


- Podcast Editor, Arthroscopy Journal - CJT
- Committee member: AAOS, AOSSM, AANA, SOMOS - CJT
- The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this poster.



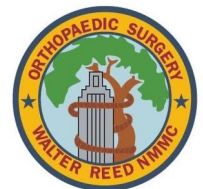
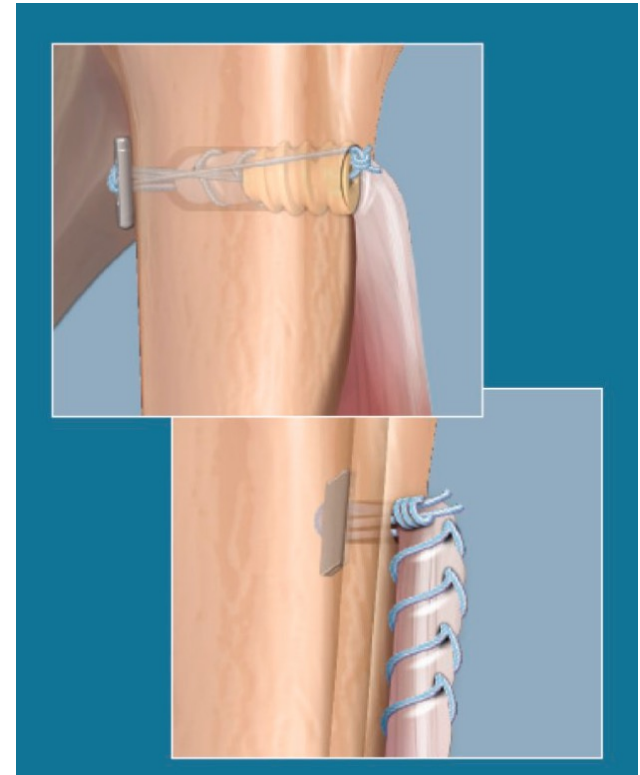


- Fixation techniques for long head of the biceps brachii tenodesis are continually evolving.
- Is an implant free technique, such as the Caspari-Weber (CW), a biomechanically suitable alternative to an onlay tenodesis with a metal suspensory button?



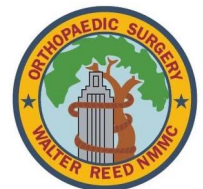


- Multiple arthroscopic and open techniques described for LHB tenodesis.
 - Higher reoperation rates have been reported for arthroscopic LHB tenodesis.
- Open techniques include both onlay and inlay fixation
 - Inlay techniques have evidence of increased pain, adverse reaction to the implant, and risk of humerus fracture
- Options for onlay fixation include suture anchor, metal button, or all-suture button.
 - Differences in these techniques include fixation device composition, the size of the drill hole needed to introduce the device, and implant cost.



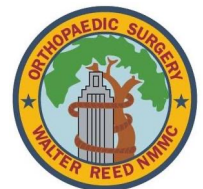


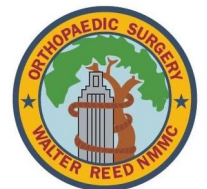
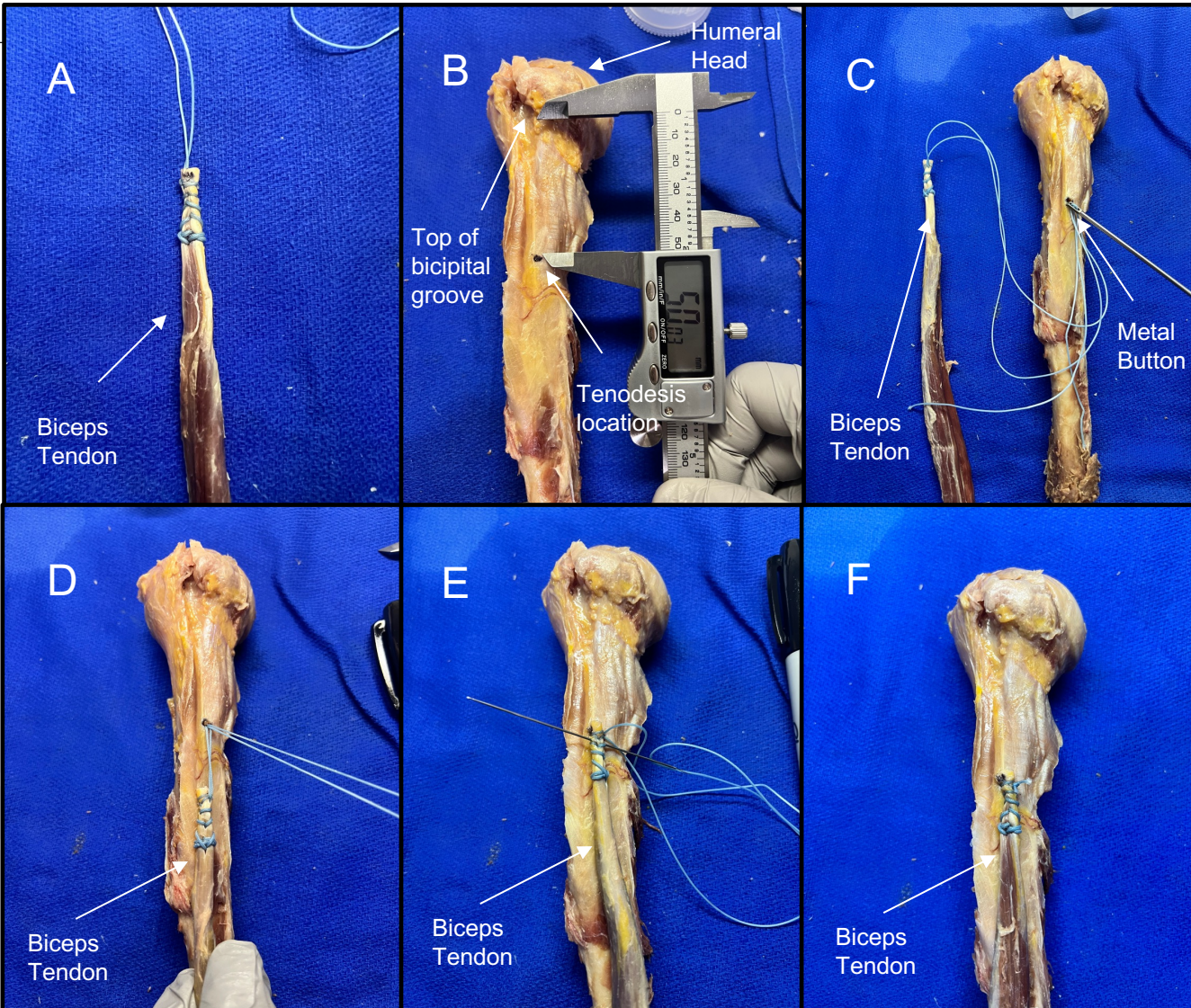
- The purpose of this study is to compare the initial biomechanical properties of onlay subpectoral biceps tenodesis (BT) using an intramedullary unicortical metal suspensory button (MB) to an implant free CW technique.
 - including the maximal load at failure, cyclic displacement, and stiffness,
- Our hypothesis was that both implants would perform similarly in ultimate load to failure, displacement, and stiffness.

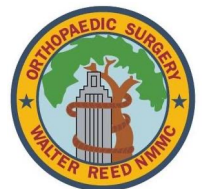
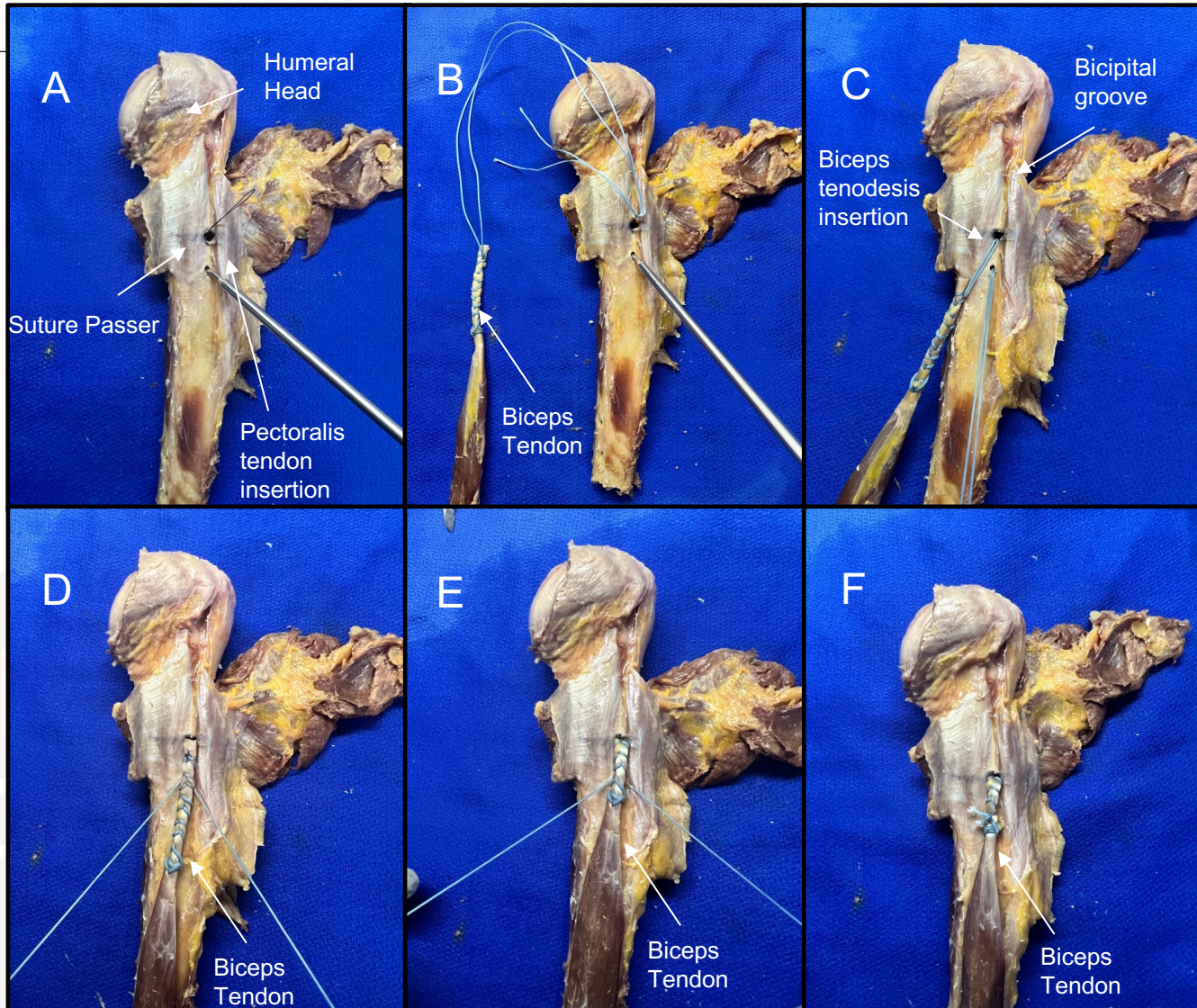


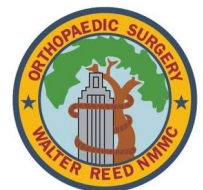
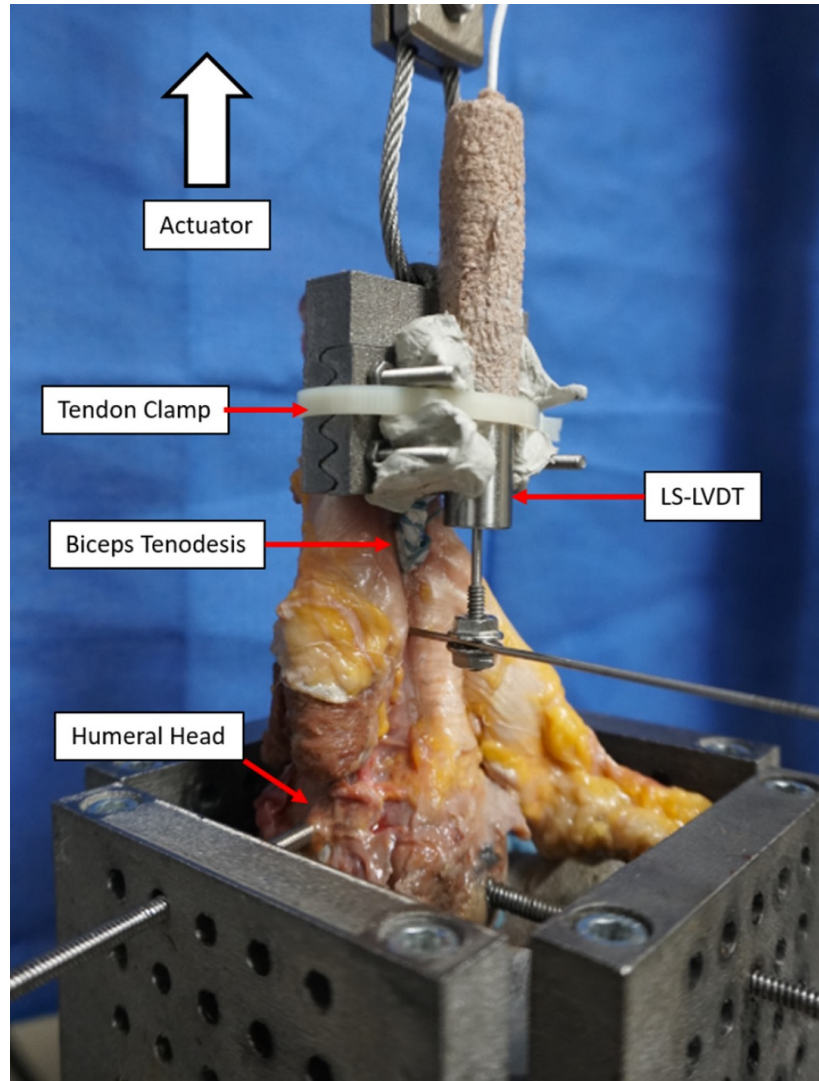


- Eight matched pairs of fresh-frozen cadaveric proximal arms (n = 16; 8 male, 8 female, mean age = 82.5 range 62-99)
- humeri were randomly assigned to 1 of 2 treatments,
 - onlay subpectoral biceps tenodesis using an intramedullary unicortical metal suspensory button or inlay tenodesis with the implant free Caspari-Weber technique



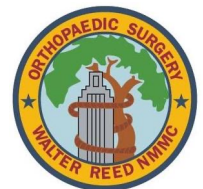






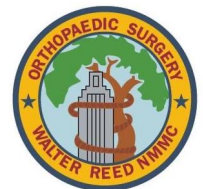


Mode of Failure	Metal Button	Caspari Weber
Failure at button interface	4 (50%)	N/A
Suture cut out at tendon-suture interface	3	3
Tendon pulled through cortical hole	N/A	1
Failure distal to tenodesis	1 (12.5%)	4



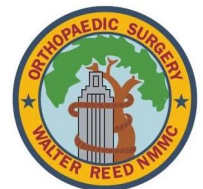
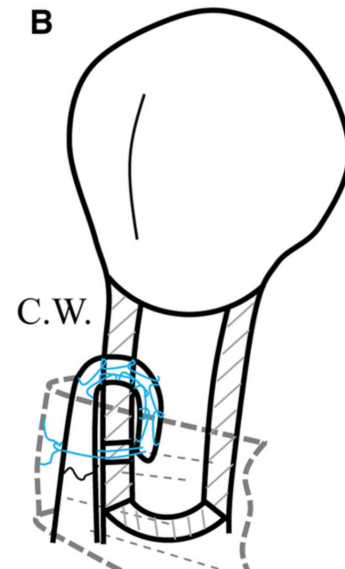
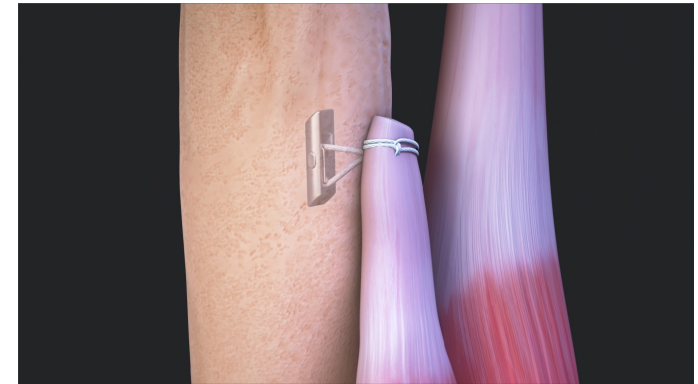


	Caspari Weber (n=8)	Metal Button (n=8)	p
Creep Displacement (mm)	1.23 (0.29)	1.39 (0.47)	0.673
Maximum Failure Load (N)	588.36 (149.06)	375.83 (131.40)	0.014*
Maximum Displacement at failure (mm)	11.62 (6.53)	10.33 (2.06)	0.771
Stiffness(N/mm)	76.59 (28.77)	58.08 (23.81)	0.323
* represents significant difference at p< 0.05			





- Implant free CW technique had a greater maximal load to failure than the onlay technique with unicortical suspensory button
 - similar construct displacement and stiffness.
- The CW subpectoral biceps tenodesis offers surgeons a cost saving alternative with robust fixation when performing a subpectoral biceps tenodesis.





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THANK YOU

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