Quill

THE BARBED
SUTURE PIONEER

Quill Publication Index
Tendon Surgery

PREMIER SURGICAL

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1. **BARBED SUTURE TENORRHAPHY: AN EX VIVO BIOMECHANICAL ANALYSIS.** PARIKH PM, DAVISON SP, HIGGINS JP. AMERICAN SOCIETY OF PLASTIC SURGEONS. PLASTIC AND RECONSTRUCTIVE SURGERY. WWW.PRSJOURNAL.COM. NOV 2009; 124(5) 1551-1558.

"Conclusions. *The present study introduces the idea of using barbed suture in flexor tenorrhaphy. In our ex vivo model of flexor tendon repair, a three-strand barbed suture technique achieved tensile strength comparable to that of traditional four-strand cruciate repairs despite having one less core suture, and demonstrated significantly less repair-site bunching. A six-strand barbed suture technique demonstrated markedly increased tensile strength compared with four-strand cruciate controls, and significantly less repair-site bunching. Our data suggest that knotless barbed suture repair may offer several advantages in flexor tenorrhaphy and that further ex vivo and in vivo testing are warranted to evaluate the clinical applicability of this concept."*

2. **A KNOTLESS FLEXOR TENDON REPAIR TECHNIQUE USING BIDIRECTIONAL BARBED SUTURE.** MCCLELLAN WT, SCHESSLER MJ, RUCH DS, LEVIN LS, GOLDNER RD. WWW.PRSJOURNAL.COM. PLASTIC AND RECONSTRUCTIVE SURGERY. 2010; 126(4): 46-47.

"*Conclusion:* *We demonstrate that knotless flexor tendon repair with barbed suture has equivalent strength with reduced repair site cross-sectional area compared to traditional techniques. A knotless flexor tendon repair offers many potential advantages over traditional repairs. Smaller tendon profile may decrease gliding resistance, thus reducing the risk for post-surgical tendon rupture during rehabilitation."*

3. **FLEXOR TENDON REPAIR WITH A KNOTLESS BARBED SUTURE: A COMPARATIVE BIOMECHANICAL STUDY.** MARRERO-AMADEO I, CHAUHAN A, WARDEN J, PHD, MERRELL G. JOURNAL OF HAND SURGERY. 2011; 36A:1204–1208.

"*Purpose:* *To test the hypothesis that a flexor tendon repair with only a knotless barbed suture technique provides a repair with a greater maximal load to failure and 2-mm gapping resistance than a traditional technique using a 4-strand core plus a running-locking epitendinous suture.*"
*"**Conclusions:** The barbed suture repair did not demonstrate a significant difference in maximal load to failure and 2-mm gapping resistance compared with the traditional method of repair."*

4. **BARBED SUTURES AND TENDON REPAIR – A REVIEW.** SHAH A, ROWLANDS M, AU A. AMERICAN ASSOCIATION FOR HAND SURGERY. AUG 2014; 10:6-15. DOI 10.1007/S11552-014-9669-Z.

"Conclusion. *Barbed suture tenorrhaphy has a myriad of theoretical advantages, supported by varying ex vivo studies, as compared to the multitude of time-tested traditional tenorrhaphy techniques. However, due to the non-uniformity in current studies and the lack of available data in a live model that can simulate the true biological forces acting upon the tendon repair and its subsequent function, we are unable to argue for or against barbed suture tenorrhaphy. We believe our review provides the most in-depth analysis of barbed suture tenorrhaphy to date, illuminates the potential advantages of using barbed sutures, and highlights the need for further investigation into this technique."*