

SUMMARY OF PEER-REVIEWED LITERATURE

Fixation Strength Comparison of 1.3mm Y-Knot All-Suture Anchor to Other Glenoid Anchors in Cortical Bone

Overview

Following is a summary of the ultimate load-to-failure results as reported in the Journal of Arthroscopy for select glenoid anchors commonly used in labral and capsular-based procedures.

Anchor	Manufacturer	Anchor Material	Sutures	Pilot Hole
Y-Knot	ConMed Linvatec	Polyethylene	#2 HiFi®	1.3mm
JuggerKnot	Biomet	Polyester	#1 MaxBraid	1.4mm
Iconix 1	Stryker	Polyester	#2 Force Fiber	1.4mm
BioRaptor PK	Smith & Nephew	PEEK	#2 UltraBraid	3.0mm
PEEK SutureTak	Arthrex	PEEK	#2 Fiberwire	3.0mm
Gryphon BR	Depuy-Mitek	Biocomposite	#2 Orthocord	3.0mm

Table 1: *Glenoid Anchors tested in metaphyseal porcine femur**

Methods

Anchors were implanted in porcine metaphyseal femoral cortex and tensile loads were applied parallel to axis of insertion at 12.5mm/s until failure. Mean failure loads are compared for anchors listed in Table 1.

Results

The Y-Knot® All-Suture anchor exhibited 249.7 ± 53.5 N mean ultimate failure load [1], which was higher than both the 239.1 ± 22.5 N ultimate failure load for the 1.4mm Juggerknot [2] and the 208.7 ± 69.0 N ultimate failure load for the 1.4mm Iconix 1 [1]. The aforementioned all-suture anchors exhibited failure loads higher than the conventional 3.0mm anchors: PEEK SutureTak (168.1 ± 14.9 N) [3], BioRaptor PK (172.2 ± 91.7 N) [3], and Gryphon BR (161.1 ± 22.5 N) [2].

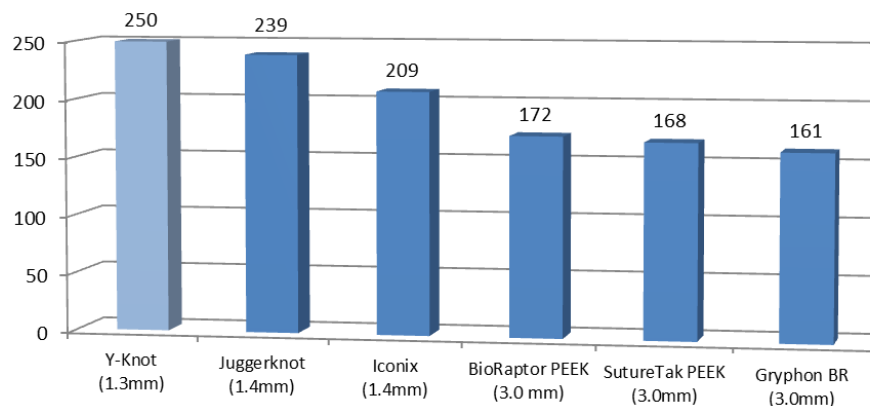


Figure 1: *Cortical loads to failure (N) in porcine for commonly used glenoid anchors*

References

¹ Barber, FA. et al. Cyclic Loading Biomechanical Analysis of the Pullout Strengths of Rotator Cuff and Glenoid Anchors: 2013 Update. Arthroscopy. 2013; 29:832-844.

² Barber, FA. et al. Biomechanical Analysis of Pullout Strengths of Rotator Cuff and Glenoid Anchors: 2011 Update. Arthroscopy. 2011; 27:895-905.

³ Barber, FA. et al. Suture Anchor Materials, Eyelets, and Designs: 2008 Update. Arthroscopy. 2008; 24:895-867.

* Juggerknot 1.5mm anchor was tested in harder diaphyseal cortex and thus omitted from this comparison