SUMMARY OF PEER-REVIEWED LITERATURE

Fixation Strength Comparison of Rotator Cuff Anchors in Porcine Bone

Overview

Following is a summary of the ultimate load-to-failure results as reported in the Journal of Arthroscopy in May 2013 for select 5.5mm rotator cuff knot-tying anchors.

Anchor	Manufacturer	Anchor Material	Sutures**	Size
GENESYS CrossFT*	ConMed Linvatec	Biocomposite (microTCP/PLDLA)	#2 Hi-Fi®	5.5mm
TwinFix (HA)	Smith & Nephew	Biocomposite (HA/PLLA)	#2 Ultrabraid	5.5mm
TwinFix (PK)	Smith & Nephew	PEEK	#2 Ultrabraid	5.5mm
Healicoil (PK)	Smith & Nephew	PEEK	#2 Ultrabraid	5.5mm
Healix (BR)	DePuy Mitek	Biocomposite (TCP/PLGA)	#2 OrthoCord	5.5mm
Healix (PK)	DePuy Mitek	PEEK	#2 OrthoCord	5.5mm

Table 1: *Rotator cuff anchor properties*

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 GENESYS™ CrossFT™ suture anchor exhibited 687.7 ± 46.2 N mean ultimate failure load, which was higher than any non-metallic anchor of any size. The comparable size biocomposite anchors exhibited the following failure loads: TwinFix (HA) (382.6 ± 38.2 N) and Healix (BR) (312.1 ± 31.0 N). The comparable size PEEK anchors exhibited the following failure loads: TwinFix (PK) (469.4 ± 48.7 N), Healix (PK) (404.3 ± 24.4 N), and Healicoil (PK) (298.7 ± 37.4 N).

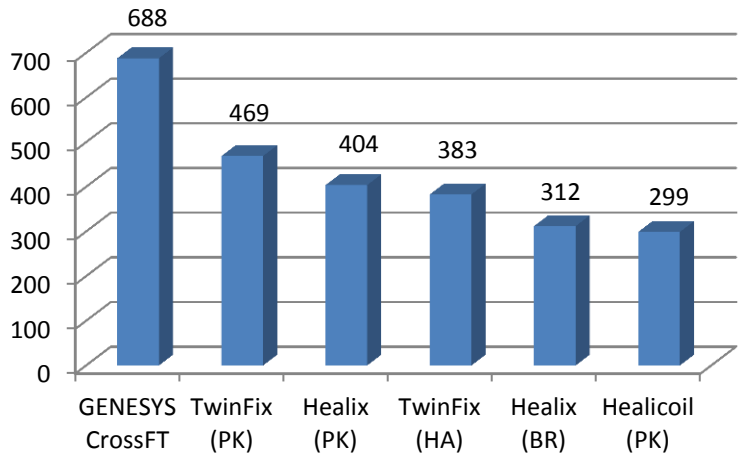

Figure 1: *Cortical loads-to-failure (N) in porcine bone for 5.5mm non-metallic anchors in study.*[1]

Clinical Relevance

The GENESYS CrossFT anchor had 47% higher pullout than the next highest anchor, TwinFix PK, and may help reduce the risk of anchor pullout postoperatively.[2]

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. Tashjian RZ, et al. Initial Fixation Strength of Massive Rotator Cuff Tears: In Vitro Comparison of Single-Row Suture Anchor and Transosseous Tunnel Constructs. *Arthroscopy* 2007; 23:710-716

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* GENESYS CrossFT is called CrossFT BC in the Barber publication.

** Publication does not specify number of sutures on each anchor tested.