Others

Contents

Scuture material

Un-coated braided sutures may provide increased resistance to passage through the tissues and may harbour bacteria within the braid. Braided sutures are however easier to use and knots tend to be more secure Coating a braided suture gives the suture qualities more like a mono-filament suture Mono-filament sutures are generally easy to use with easy passage through tissue but may not hold a knot well. They also usually result in low tissue reactivity and the smooth surface does not harbour bacteria. source

Natural materials generally result in greater tissue reactivity

Vicryl

Braided synthetic absorbable suture Polyglactin 910 Retains 70% of initial strength at 10 days and 30% at 20 days Complete absorption in 60 - 90 days

Coated Vicryl

As Above Coated with a mixture of calcium stearate and polyglactin 370 Maintains 100% strength for ~ 45 days and then decreases to 70% by ~ 50 days

PDS

Mono-filament synthetic absorbable suture Polydioxalone Retains 70% of initial strength for ~ 21 days and is reduced to 50% at ~ 35 days Absorption usually complete within 180 days Results in minimal tissue reaction

Ethibond

Braided non absorbable synthetic suture Polyester coated with polybutilate (also a polyester) for lubrication to aid tissue passage with good tissue qualities and tensile strength

Panacryl (Johnson & Johnson)

Braided synthetic absorbable suture Poly (L-lactide/glycolide) with 90/10 caprolactone/glycolide coating for improved handling. Retains 60% of it's original strength at 6 months Complete absorption takes 1.5 to 2.5 years The Breaking Strength Retention (BSR) of VICRYL suture at 3 weeks is 50%, compared to 90% for PANACRYL suture after 6 weeks. At 3 months, the BSR of VICRYL suture is zero, whereas PANACRYL suture has a BSR of 80%. PANACRYL suture still retains 20% of its BSR after 1 year. The BSR is 25% at 6 weeks for MAXON, and 64% at 6 weeks for PDS II suture.

Orthocord (Johnson & Johnson)

Non-absorbable braided suture Composite suture composed of dyed (D&C Violet #2) absorbable polydioxnone (PDS) and un-dyed non-absorbable polyethylene. The partially absorbable suture is coated with a copolymer of 90% caprolactone and 10% glycolide. 55lbs of tensile strength and 30lbs of knot strength

Fiberwire (Arthrex)

Catgut

Intestinal submucosa of sheep and intestinal serosa of cattle Retains tensile strength for ~ 10 days

Chromic Catgut

(Chromatised) retains tensile strength for 20 - 40 days

Both forms of catgut result in a moderate tissue reaction

Proline

Non absorbable synthetic mono-filament suture Polypropylene (extruded) Low tissue reaction and easy tissue passage

Nylon

Non absorbable synthetic mono-filament suture

Silk

Natural silk is made up 70% of protein fibre and 30% extraneous material such as gum Processing involves degumming Protein make up and extraneous material results in increased tissue reactivity

Suture sizes

Size denotes the diameter of the material. Stated numerically, the more zeros (0's) in the number, the smaller the size of the strand. As the number of 0's decreases, the size of the strand increases. The 0's are designated as 5-0, for example, meaning 00000 which is smaller than a size 4-0.

USP Diameter Tensile Strength (surgeon's knot) 4-0 0.2mm 7.5N 3-0 0.3mm 12.3N 2-0 0.35mm 19.6N 0 0.4mm 22.3N 1 0.5mm 37.3N