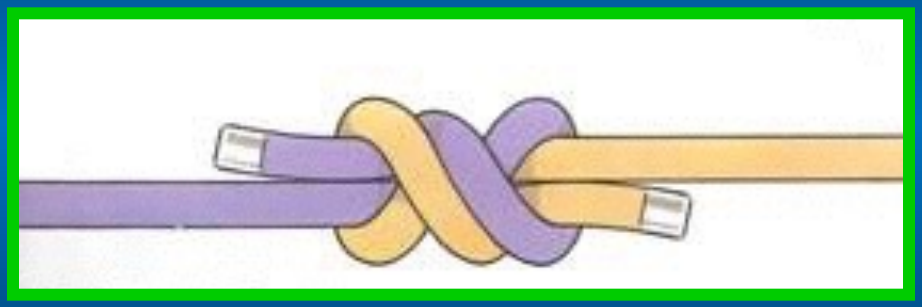
Knot-Tying
Intern Arthroscopy Course
2016



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KNOTS

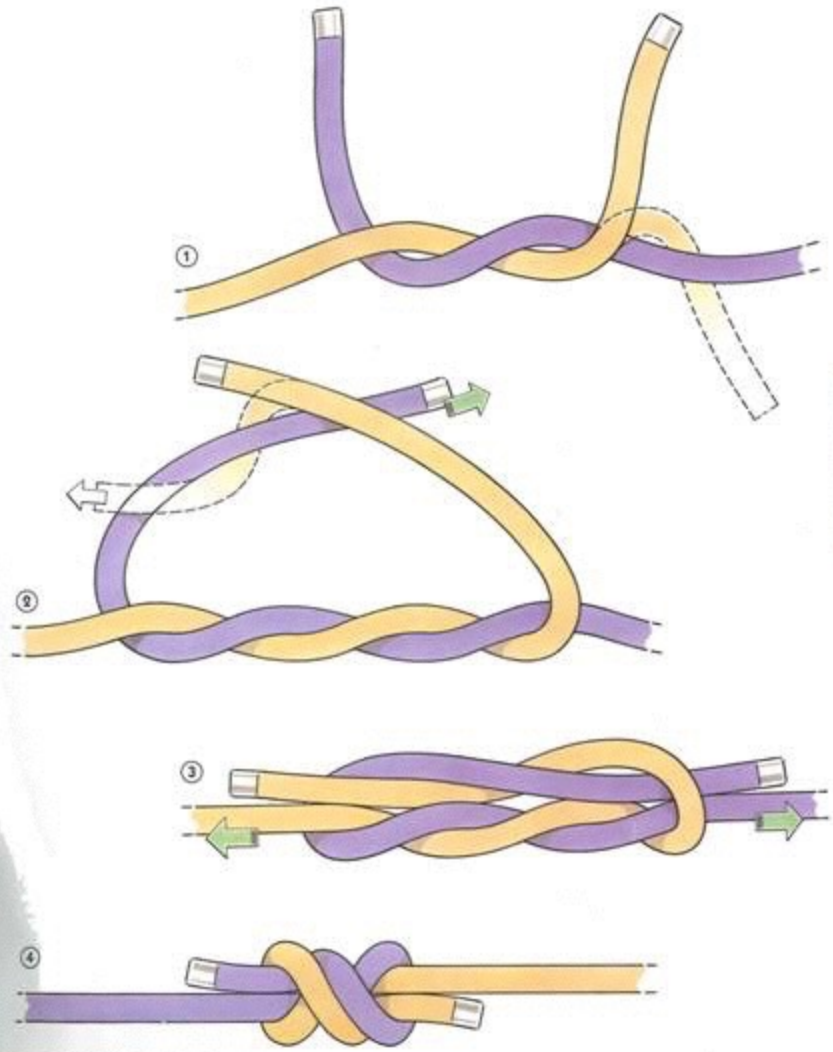


More than 50 of the most useful knots for camping, sailing, fishing, and climbing

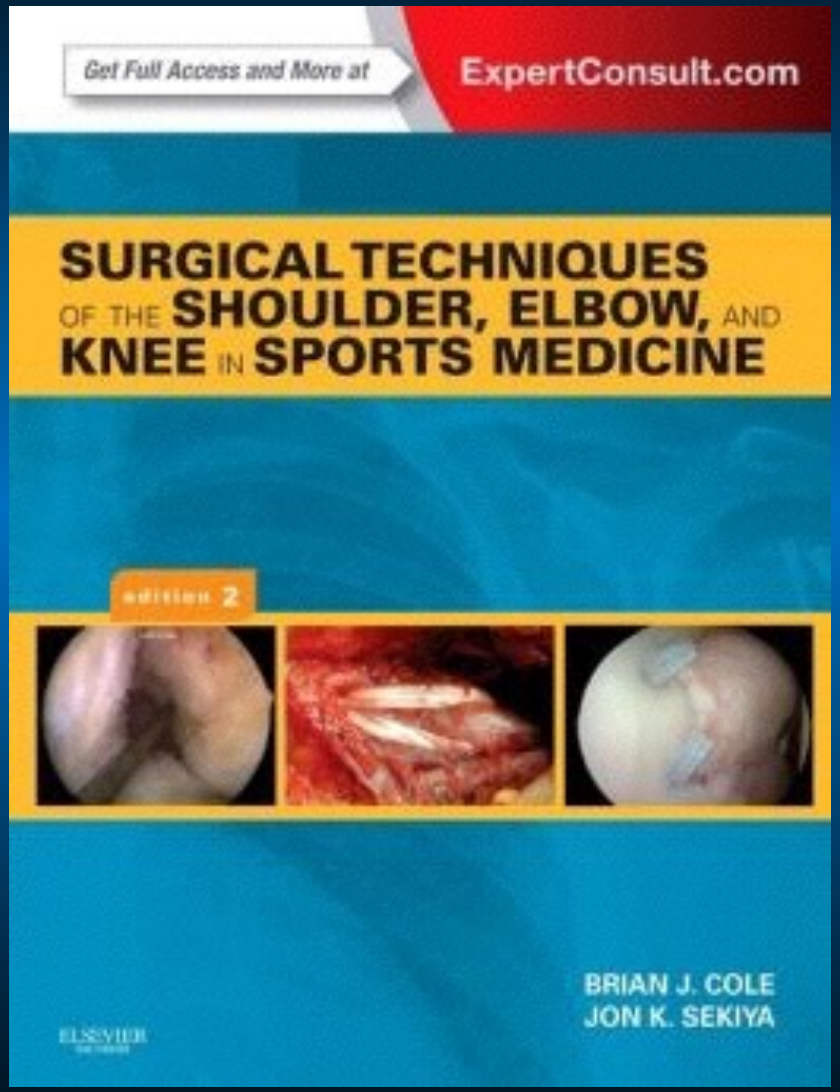
PETER OWEN

SURGEON'S KNOT

As its name suggests, this knot is used by surgeons to tie off blood vessels, and it seems to have been in use since about the end of World War II. The knot has a good grip, twisting as it is drawn up and the diagonal is wrapped around it. It is less bulky and flatter than some of the other knots used by surgeons – the carrick bend and the reef knot, for instance – which tend to leave visible scars.



“Knot-Tying and Suture-Passing Techniques,” Chapter 3 in Cole BJ and Sekiya, JK, **Surgical Techniques of the Shoulder, Elbow and Knee in Sports Medicine** (Elsevier/ Saunders, 2013), pp. 23-31.



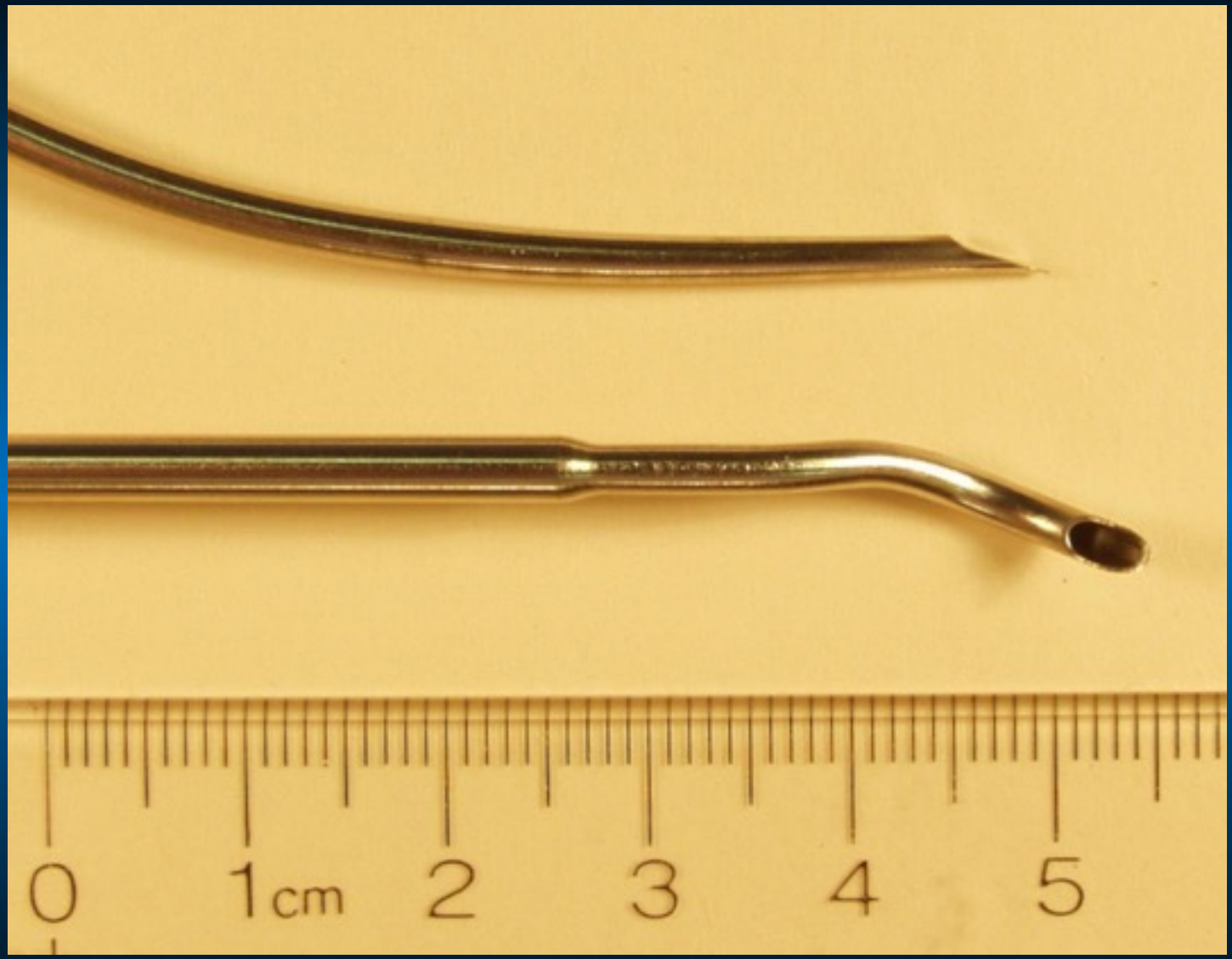
Suture Passage: Tissue Penetrators

- Directly grasp the suture through the tissue
- Antegrade or Retrograde technique
- Get the ideal angle for suture passage
- Be careful with manipulating the instruments to avoid damage to labrum or articular cartilage



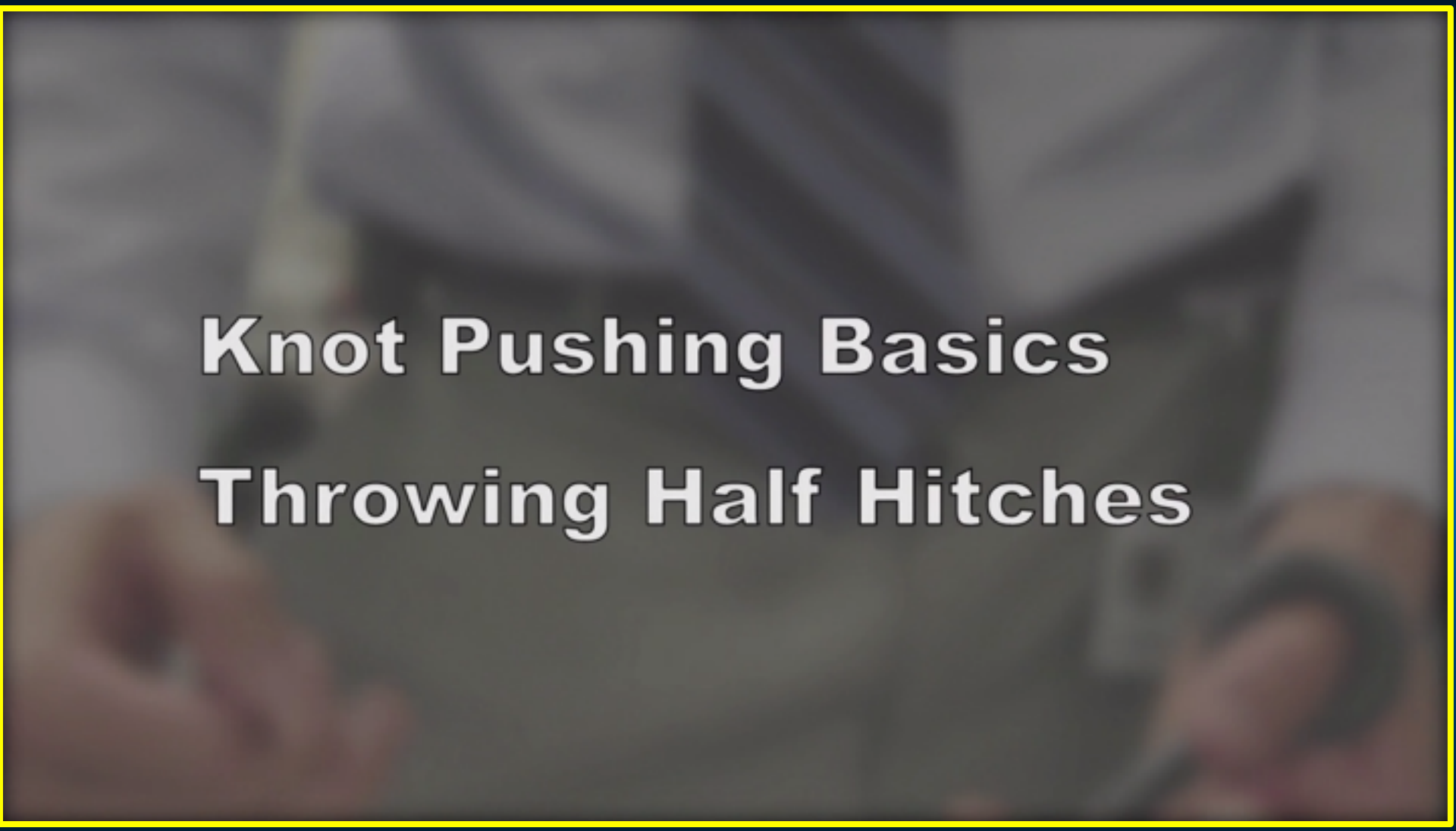
Suture Passage Relay Technique

- Cannulated needle devices pass through the tissue
- The suture lasso is retrieved through a working portal
- Grasp the lasso and suture in one pass
- Use clear plastic cannulas
- Pass the suture in through the lasso
- If simple suture, tie now; if mattress suture, pass next limb, then tie

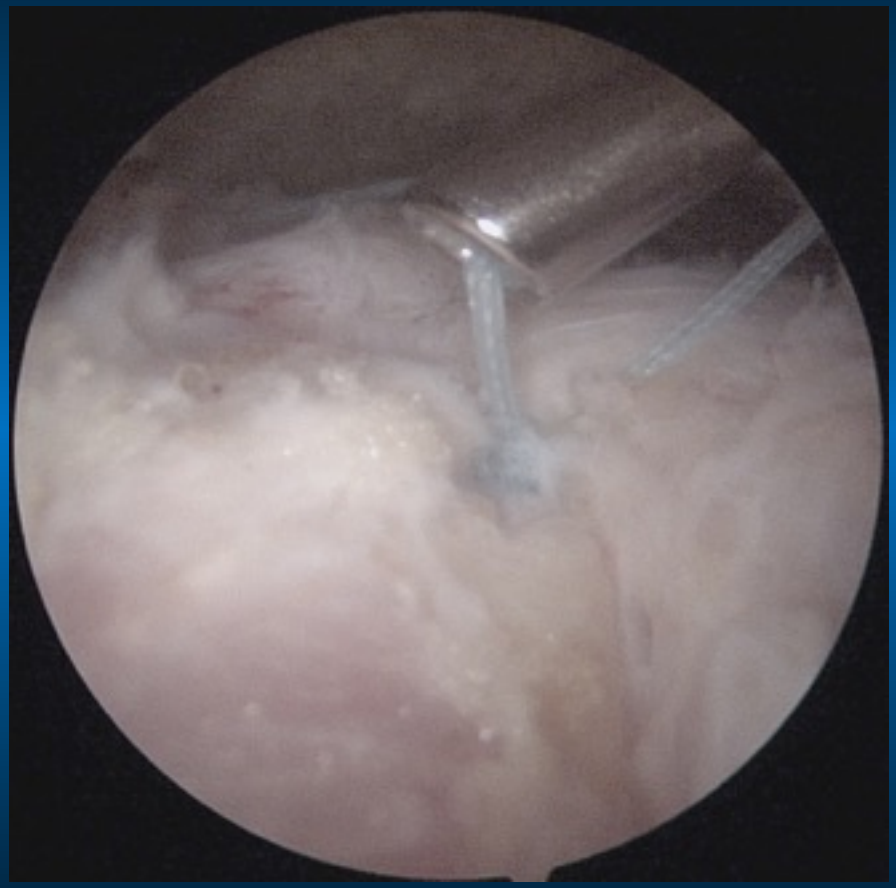

0
1cm
2
3
4
5

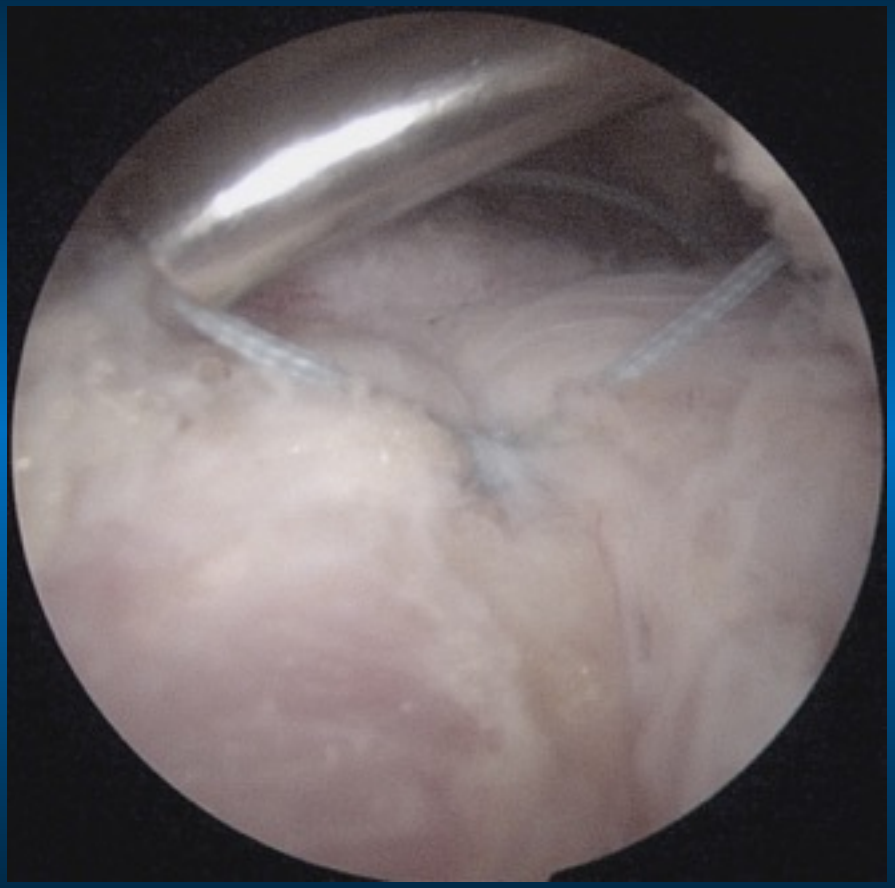
Knot-Tying Video




Knot Pushing Basics
Throwing Half Hitches

Past Pointing

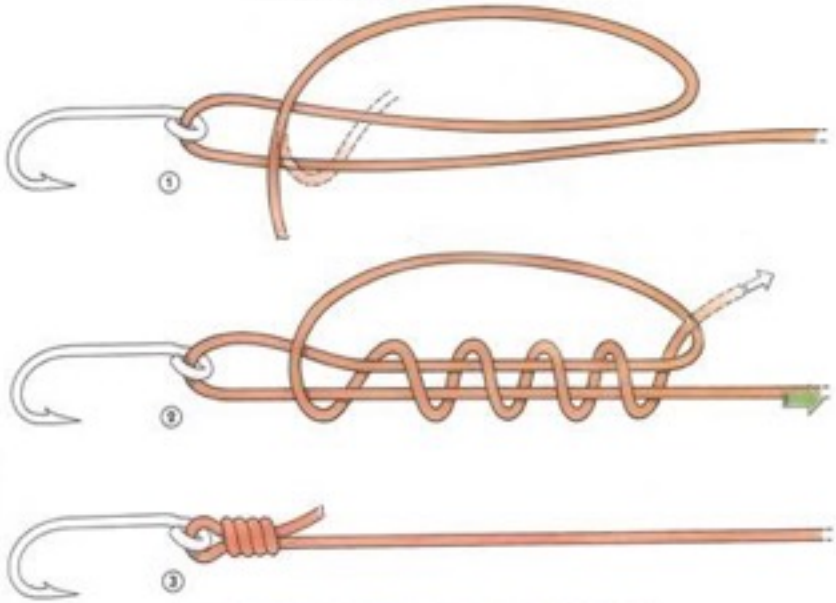




GRINNER KNOT

Also known as: DUNCAN LOOP KNOT, UNI-KNOT

This is an excellent and justifiably popular knot for joining either a fly or an eyed hook to a leader (that is, a length of nylon that forms the junction between the fly-line and the fly) or to a tippet (the thin, terminal section of a leader).





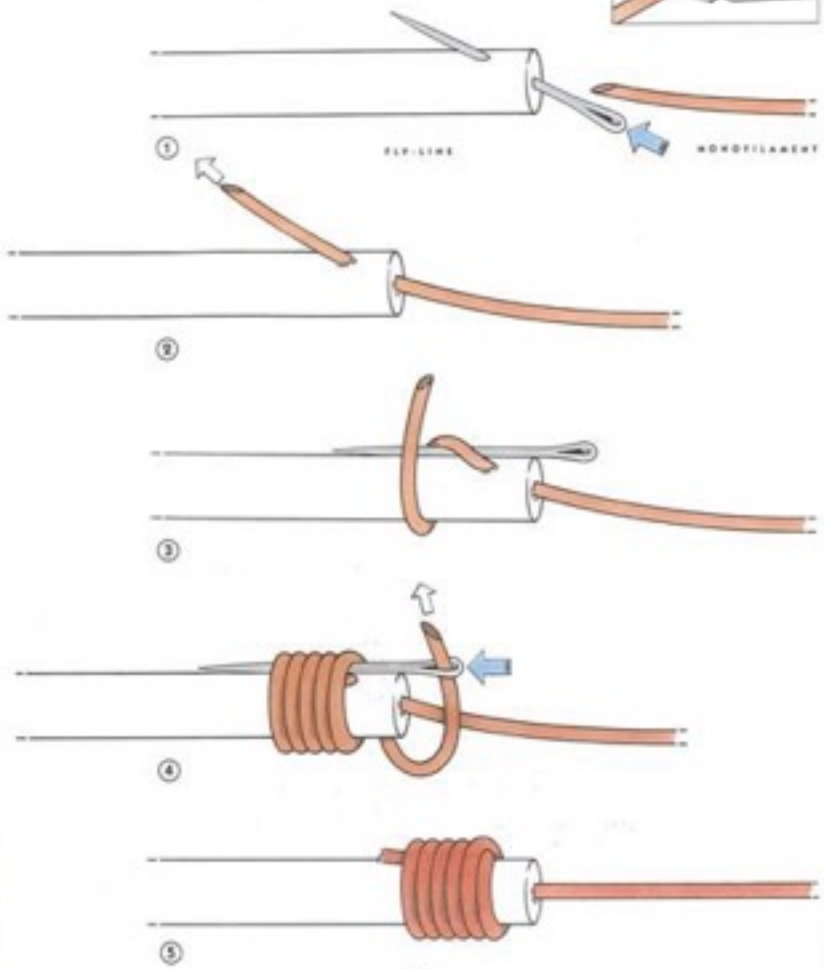
The Grinner knot and the Half tucked blood knot are the two best methods of tying fly to line. They are difficult to master and fly fishermen will benefit from practising at home.

NEEDLE KNOT

Also known as: NEEDLE NAIL KNOT

The needle knot is used to effect a smooth join between the fly-line and the butt end (that is, the thick part) of the leader. Not only is this an extremely strong way of fastening monofilament to a fly-line, it is also unlikely to catch or snag on debris as the line is fished.





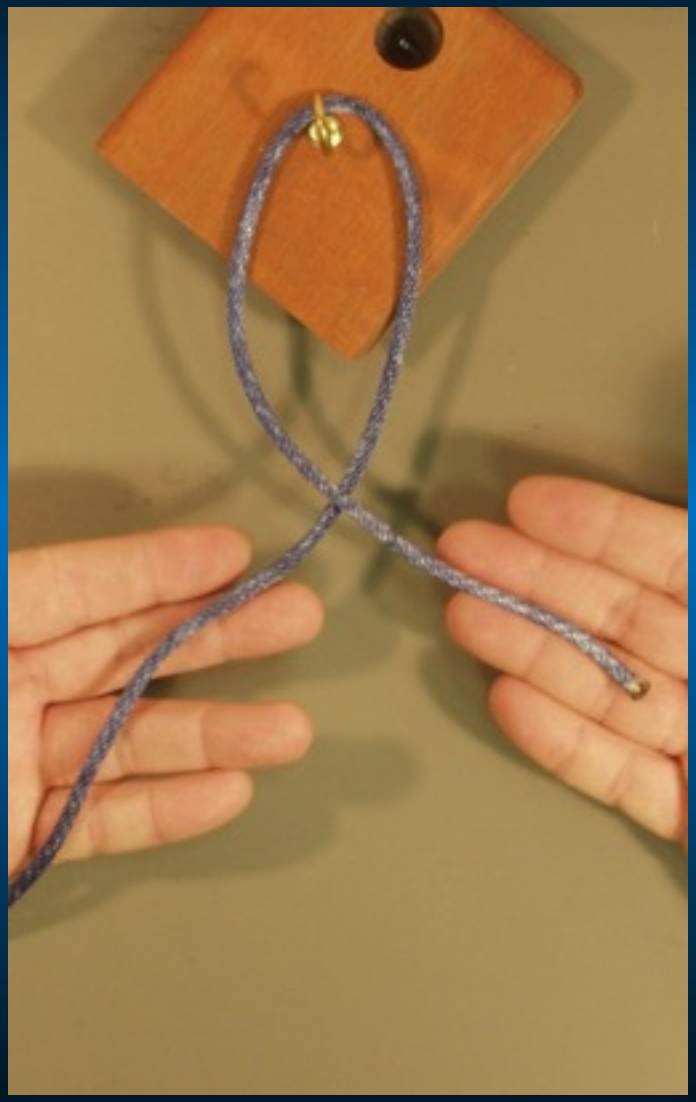
Knot Types

- Non-Sliding
  - Use if the knot will not slide
  - Series of half-hitches, loop limb is tied around the post
  - Alternate loop and post limbs
  - Change direction of suture throws to increase knot security

Knot Types

- Sliding
  - Use if the knot will slide
  - Have an internal locking mechanism providing increased loop security while tying
  - Locking mechanism one-way ratchet effect, or self-locking effect
  - Categorized depending on location of wrapping limb relative to the surgeon
    - Proximal – closer to the surgeon (Nicky's knot)
    - Middle – (Tennessee Slider, Samsung Medical Center- Seoul, Korea)
    - Distal – (Weston, Roeder, Duncan)

Weston Knot





Weston Knot





Weston Knot



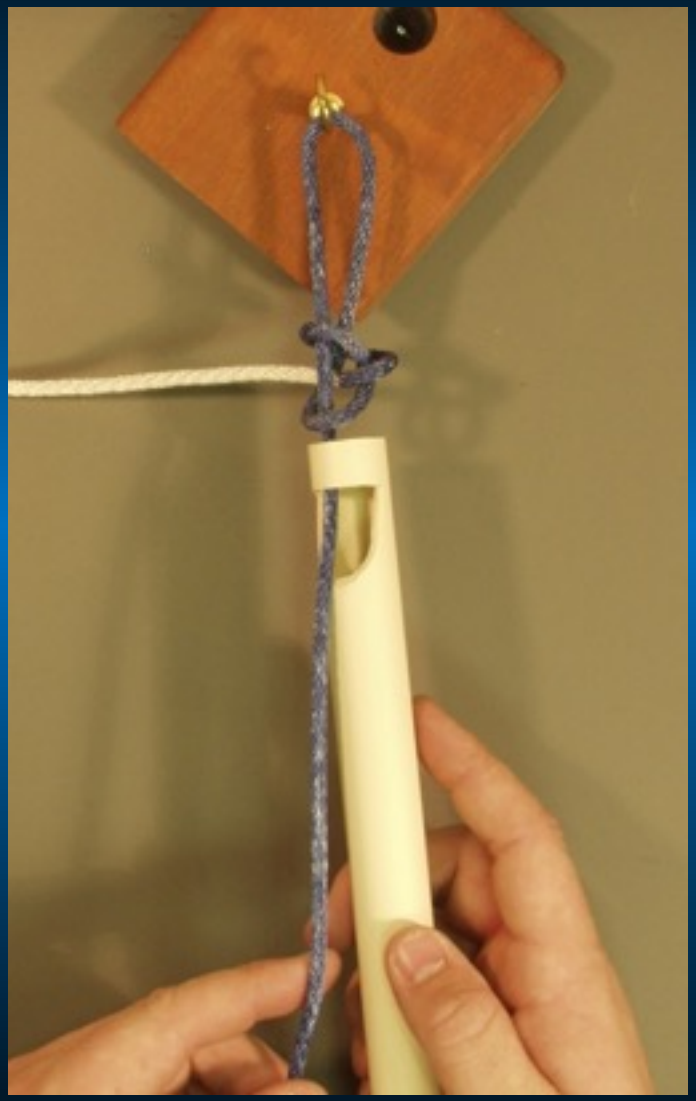


Weston Knot



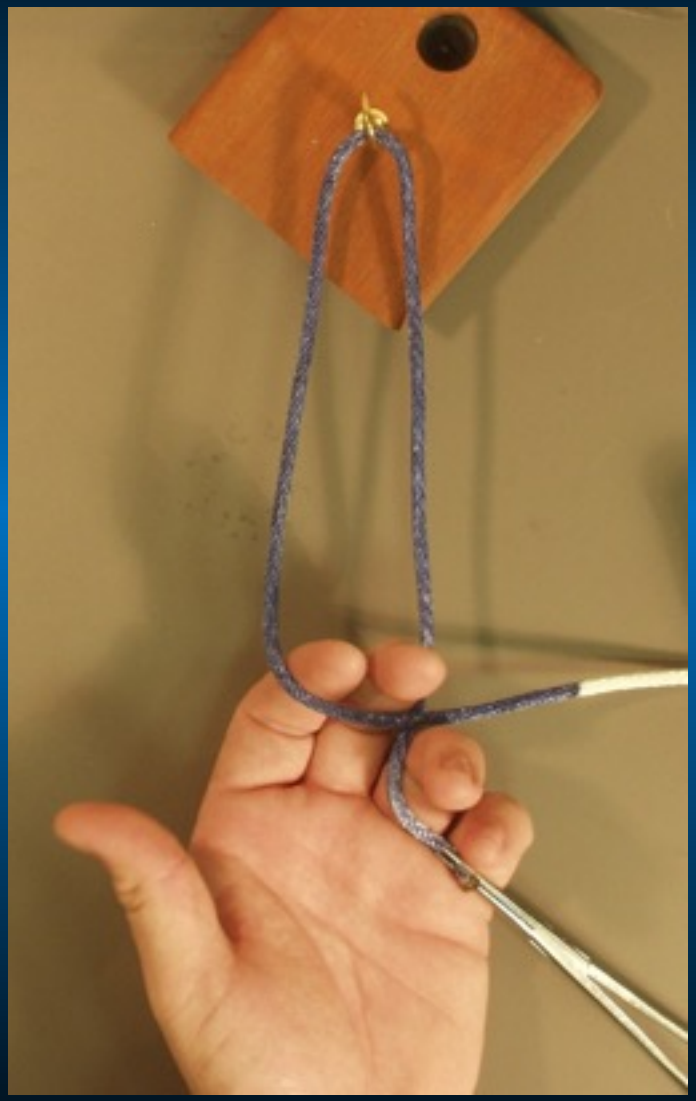


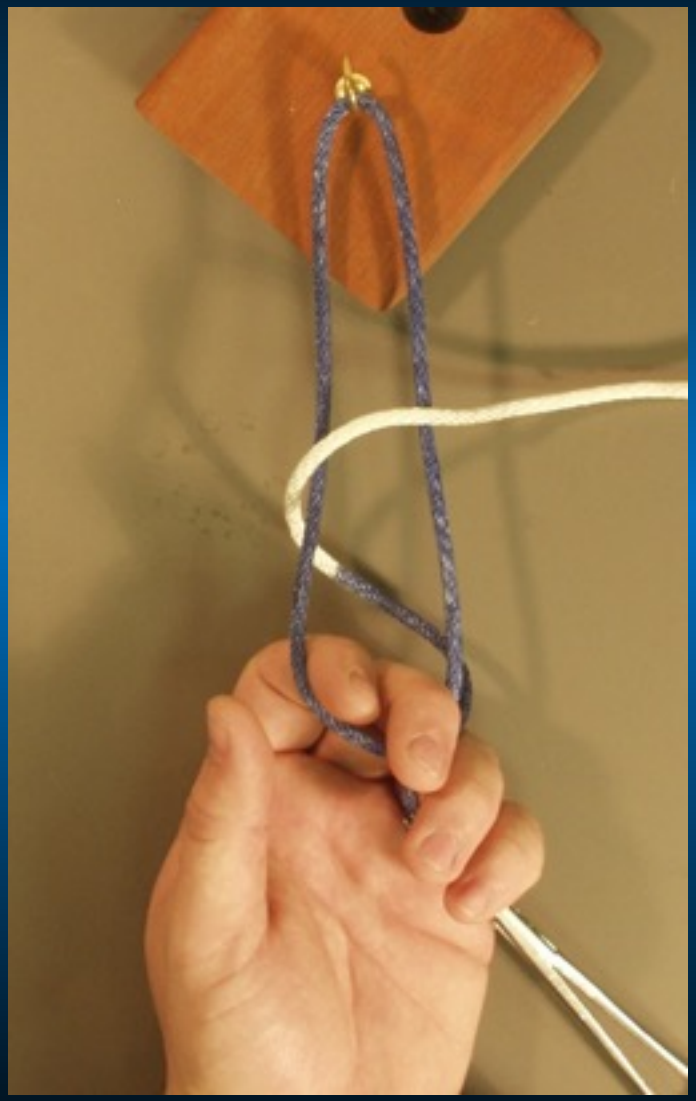
Weston Knot



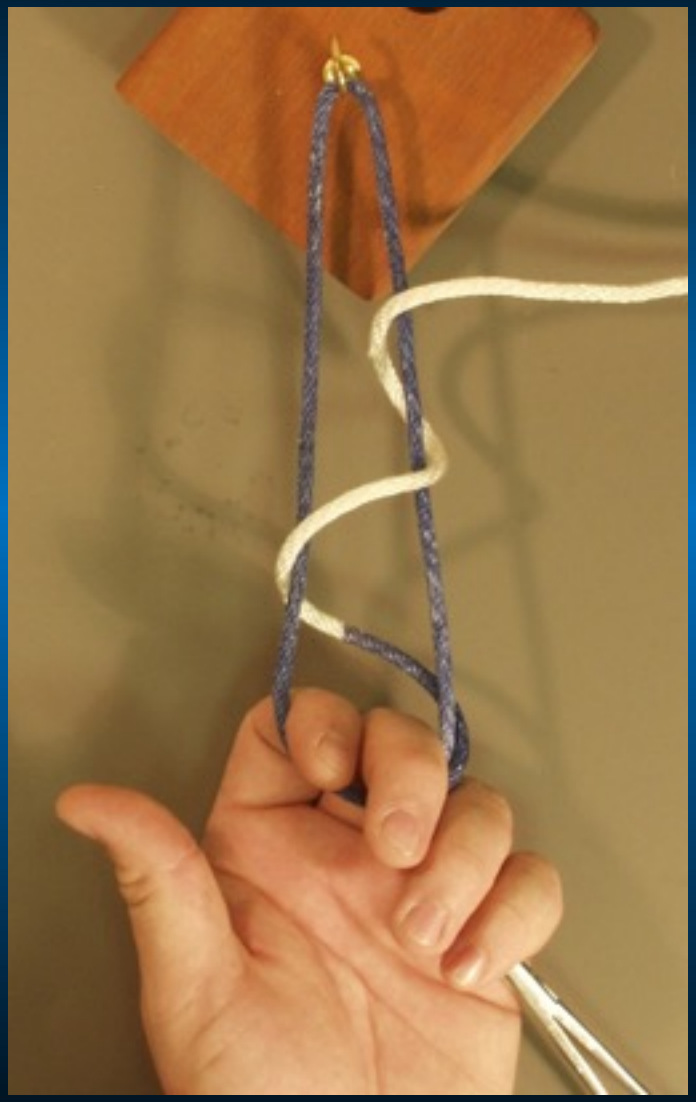

Weston Knot

SMC Knot





SMC Knot



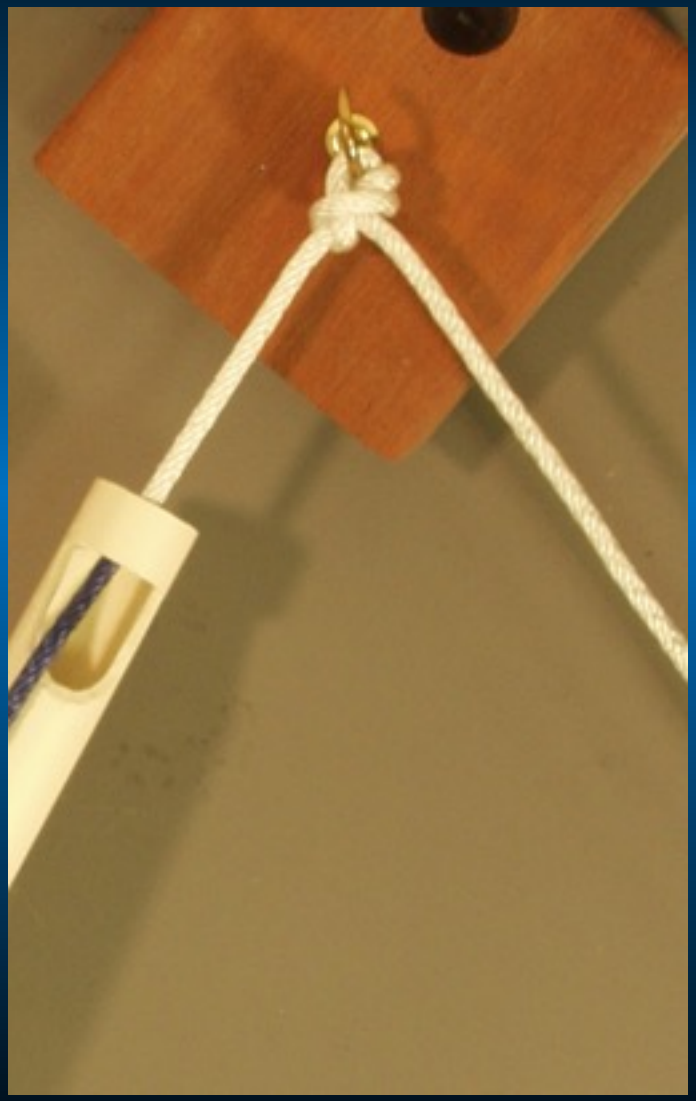


SMC Knot





SMC Knot




SMC Sliding Knot


Duncan Loop
Sliding Non-Locking Knot

Secrets to Success:

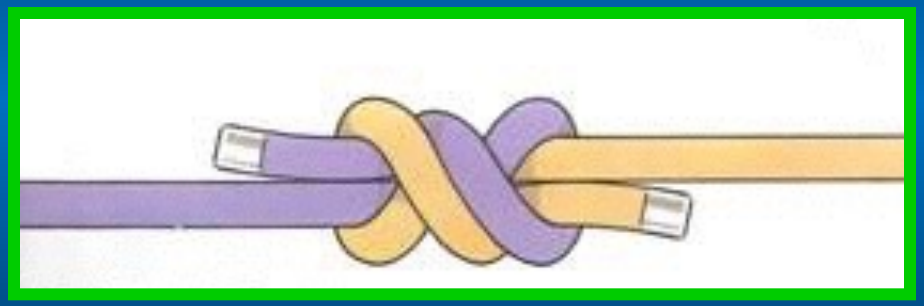
- Practice, practice, practice!!
- Respect the sutures; they WILL tangle



The End . . . Thank You!

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