A technique to obviate the need for assistance while preparing the tibial plateau during knee arthroplasty

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BACKGROUND

During total knee arthroplasty, a particularly assistant-dependent stage is the tibial resection. This requires the presence of an assistant to apply pressure on the single- and double-pronged retractors to expose the tibial plateau adequately. Here, we describe a simple technique that allows this stage to be conducted without assistance.

TECHNIQUE

While preparing the tibial plateau for resection, the knee is fully flexed with retraction of the distal femur and soft tissues to expose the area adequately. This is generally done using a single- and double-pronged retractor held by an assistant. In our technique, the double-pronged retractor is held using a pair of Kocher's forceps passed through the proximal hole in the retractor and attached to the drapes. The single-pronged retractor may then be positioned to retract the lateral soft tissues. This is held in position by a second pair of Kocher's forceps, the jaws of which are closed around the double-pronged retractor, with the single-pronged retractor held between the two handles, against the ratchet mechanism of the forceps (Fig. 1).

Figure 1 Retraction technique.

DISCUSSION

With the advent of the European Working Time Directive, it has become increasingly difficult to acquire the services of an assistant in theatre. Joint exposure is an extremely important step in total knee arthroplasty that requires adequate retraction to show the tibial plateau. We feel that when assistance is unavailable, the described technique provides reliable exposure during this vital step in the procedure.

Approximating tissue under tension using the slipped square sliding knot

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BACKGROUND

A common difficulty many surgeons face in stitching tissue under tension is securing the first throw of the knot and stopping it from loosening until further throws are performed.¹⁻³ Here we present a simple technique to obtain a stable knot that offers a controlled and sustained tension in approximating tissue.

TECHNIQUE

The slipped square sliding knot can be performed using monofilament or braided suture materials and by hand- or instrument-tying techniques. The first throw is made as for a traditional reef knot but keeping one strand under tension (Figs 1 and 2). A second throw is made in the reverse direction, again as in the reef knot, whilst maintaining the same strand straight

Figure 1 The first throw is made.

Figure 2 One strand is pulled straight.

Figure 3 The same strand is again pulled straight.

Figure 4 The loop is tightened by pulling the same straight strand.

under tension and releasing the other strand. This manoeuvre creates a double half-hitch type slipped knot (Fig. 3). The loop is tightened by pulling on the straight strand (Figs 4 and 5). When the desired tissue approximation is achieved, both strands can be released without causing the loop to loosen. Finally, this knot should be secured by locking it with either alternate half-hitch knots (*i.e.* more sliding throws with alternating the straight strand) or easier by adding square reef knots (Fig. 6).

DISCUSSION

Although the slipped square knot on its own is not a secure

Figure 5 As caption to Figure 4

Figure 6 Securing the knot by locking it with a square reef knot

method in tissue approximation, its structure provides adequate stability in maintaining the tension of tissue until further securing knots are added. Therefore, we recommend the slipped square knot in approximating the wound edges under tension in a controlled manner in wound closure.

References

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