

Use of a Free Mayo Needle in Laparoscopic Suturing

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Abstract

A suturing alternative that can assist the advanced laparoscopic surgeon in several situations uses a free Mayo needle. The technique can be helpful when the needle breaks off the suture before both tissues to be approximated have been penetrated, and as a complement to new endoscopic devices. It was used successfully in 12 patients.

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Despite the introduction of many devices for performing operative laparoscopy, mastering several suturing techniques is extremely important. Although many devices were developed to simplify suturing, their cost, availability, and large diameter (>5 mm) make their use somewhat difficult. The free Mayo needle can be effective in endoscopic suturing, such as when the needle breaks off the suture before both tissues to be approximated have been penetrated.

Technique

The ends of the suture are exteriorized through the 5-mm cannula sleeve and one end is attached to a hemostat (Figure 1). The cannula sleeve is removed while the assistant places a finger over the skin opening to maintain pneumoperitoneum (Figure 2). The unattached end of the suture is grasped with a needle holder and passed through the exteriorized trocar (Figure 3). The needle holder releases the suture, which is threaded through a half-circle, taper-point, free Mayo needle (similar in size to a CT-2 needle), and a 3- to 4-cm loop is formed (Figure 4). The needle holder is reintroduced through the exteriorized tro-

car and the held loop with the needle is grasped (Figure 5). The needle holder with the attached loop and needle are introduced into the abdominal cavity through the original incision (Figure 6). They can be

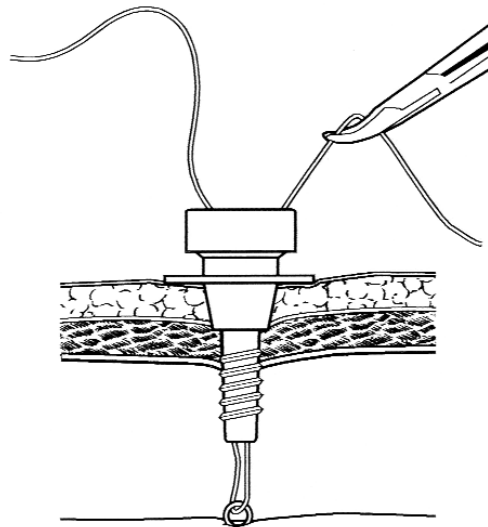


FIGURE 1. One end of the suture is attached to a hemostat.

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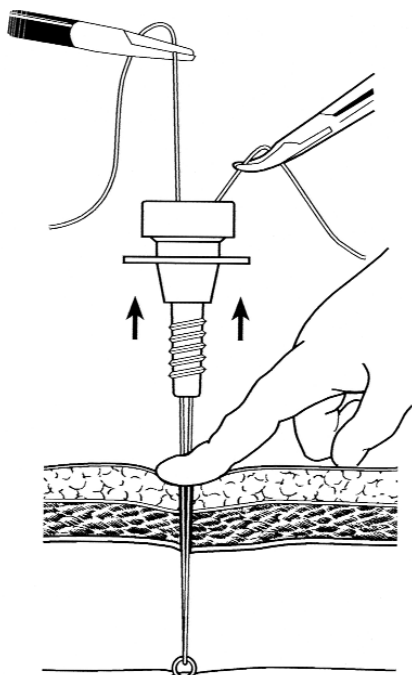


FIGURE 2. The cannula sleeve is removed while the assistant places a finger over the skin opening, maintaining pneumoperitoneum.

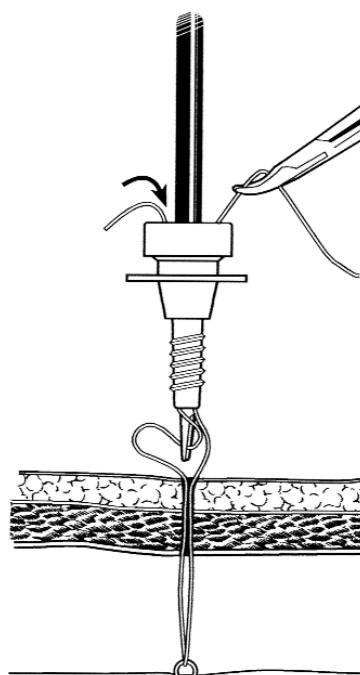


FIGURE 3. The unattached end of suture is grasped with a needle holder and passed through the exteriorized trocar.

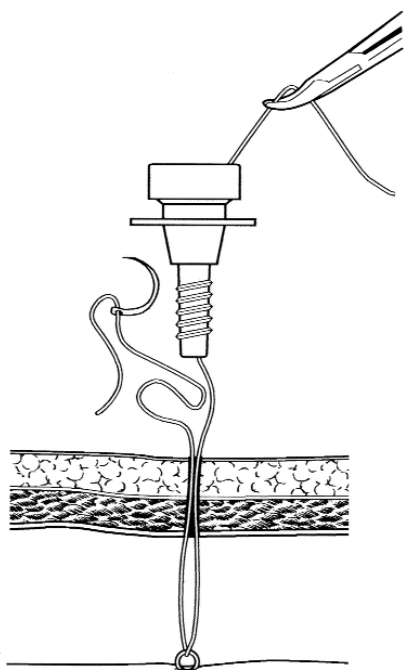


FIGURE 4. The needle holder releases the suture, which is threaded through a half-circle, taper-point, free Mayo needle, and a 3- to 4-cm loop is formed.

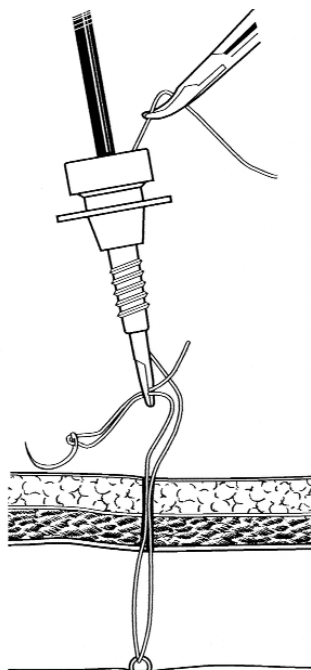


FIGURE 5. The needle holder is reintroduced through the exteriorized trocar and the held loop with the needle is grasped.

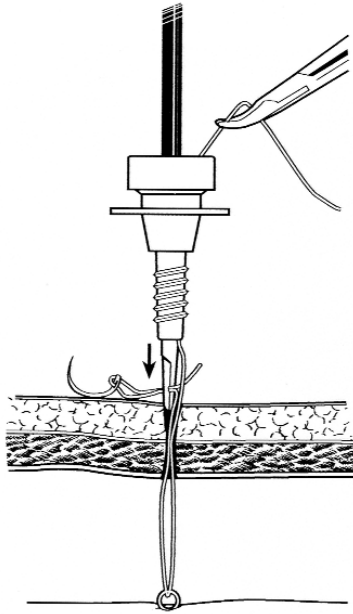


FIGURE 6. The needle holder with attached loop and needle are introduced into the abdominal cavity through the original incision.

grasped by the assistant and presented to the surgeon (Figure 7).

Experience

The technique was used during laparoscopic bladder neck suspension when occasionally the suture became dislodged while it was being tied to Cooper's ligament. In this situation one option is to place another stitch, which can be frustrating and time consuming, or use the technique with the free Mayo needle, which seems to be faster and more efficient. I have used the technique with the Straight-In Bone Screw Fixation system (Influence, Inc., San Francisco, CA). The device is a disposable battery-operated bone screw inserter (28 cm long, 4-mm diameter shaft). It attaches a bone screw to Cooper's ligament with a loop through which any type of suture may be threaded. It expedites passage of suture through Cooper's ligament during laparoscopic bladder neck suspension. The device complements the technique of a free Mayo needle, which allows passage of sutures through paravaginal tissue. The technique was used in 12 patients without complications. During one insertion, the needle

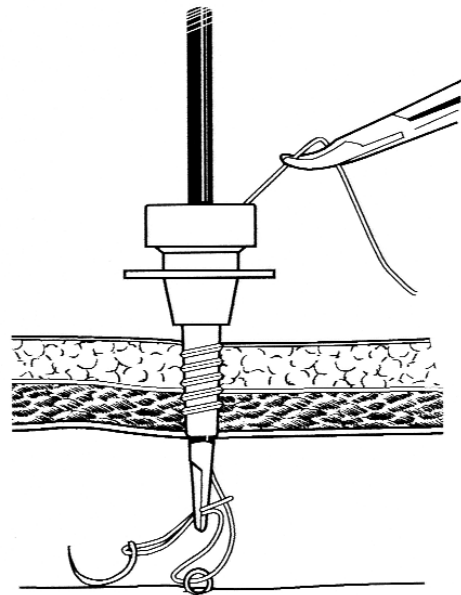


FIGURE 7. The introduced loop and needle can be grasped by the assistant and presented to the surgeon.

became dislodged; but the suture was easily rethreaded intraabdominally, which was facilitated by the large eye of the needle.

Discussion

Several important suturing techniques in endoscopic surgery have been described.^{1,2} Curved needles are extremely important and allow for duplication of several surgical techniques that are traditionally performed by laparotomy. In addition, the technique described here allows for incorporation of the new Straight-In Bone Fixation system³ for performing laparoscopic bladder neck suspension and sacrocolpopexy.

References

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