True single-port appendectomy: first experience with the “puppeteer technique”

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We read with interest the recently published report by Dr. Roberts describing a novel “puppeteer technique” for single-port appendectomy, which is an intriguing modification of conventional laparoscopic surgery. However we have performed single-port appendectomy using multichannel ports, an approach based on well-established laparoscopic principles that can be transferred easily to trainees. Our current experience includes 44 cases performed through a single umbilical incision using a three-channel flexible port. This allows insertion of a camera and two instruments through a 12-mm incision.

The procedure is performed in a fashion similar to conventional laparoscopy [1]. We use reusable straight graspers, hook diathermy, and pretied loops to perform the dissection under good vision and achieve triangulation by crossing instruments at the point of insertion. The appendix is removed inside the port, minimizing contamination.

Our 44 consecutive cases consist of 42 emergencies (including 1 appendix mass and 2 perforated appendixes) and two elective interval appendectomies. Of the 44 patients, 32 were women with a body mass index (BMI) ranging from 18 to 32 kg/m². The operating time ranged from 20 to 65 min, which is comparable with our standard time for laparoscopic technique. Only one case required an additional 5-mm port (for the appendix mass) to complete the dissection safely. All the patients were discharged within 48 h after the operation and followed up after 6 weeks.

Our series involved four minor complications. Two patients were readmitted, one with a small intraabdominal

hematoma (treated conservatively) and one with gastroenteritis. Other complications involved a wound infection and a superficial hematoma, both treated without the need for additional surgery.

The potential benefit of using a multichannel port rather than the “puppeteer” technique appears to be a shorter operating time because no intracorporeal loop needs to be fashioned to act as a pulley. Moreover, the dissection is performed in a manner familiar to those experienced in laparoscopic surgery. We have shown that our technique is teachable to trainees experienced in conventional laparoscopic appendectomy and has a short learning curve [2]. Although the port costs more than a standard single channel port, this cost difference is offset by avoiding the use of extra equipment such as an energy device (e.g., Ligasure/Harmonic scalpel) or a laparoscope with an extra working channel. Our use of additional ports also results in a lower cost.

We therefore suggest that a single multichannel port allows a result similar to that of the puppeteer technique in terms of minimal incision and cosmesis but requires less time to perform and is more cost effective. The puppeteer technique may be useful in allowing a different point for retraction in difficult cases or other advanced procedures.

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References

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