Robotic Total Mesorectal Excision using a Wristed Suction-irrigation Device for Efficient Traction and Visualization

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In rectal cancer surgery, gentle opening of the plane by continuous traction and optimized visualization is essential. Recently, a wristed robotic suction-irrigation device was developed for efficient traction of the rectum and good surgical visualization. This video shows a technique of robotic total mesorectal excision using a wristed robotic suction-irrigation device. A 74-year-old woman with rectal cancer had a biopsy-proven adenocarcinoma within 9 cm of the anal verge. She underwent totally robotic total mesorectal excision using a dual-docking technique. Total procedure time was 445 minutes. The patient was discharged on postoperative day 8 without any complications. Total number of lymph nodes harvested was 12, and proximal and distal resection margins were 11.2 and 4.7 cm, respectively. Totally robotic total mesorectal excision using a wristed robotic suction-irrigation device was an efficient and useful procedure for rectal cancer.

Keywords: Robotic surgical procedures, Laparoscopy, Rectal neoplasms, Lymph node excision

Supplementary video file: This article contains supplementary material (<https://doi.org/10.7602/jmis.2017.20.3.120>).

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INTRODUCTION

In rectal cancer surgery, gentle opening of the plane by continuous traction and optimized visualization is essential. In robotic pelvic dissection, an excellent stereoscopic view can be obtained with high illumination, a stable camera platform, and filtering of physiologic tremors.¹⁻⁴ Recently, a wristed robotic suction-irrigation device was introduced for efficient traction and good visualization in rectal cancer surgery. This video shows a technique of robotic total mesorectal excision using a wristed robotic suction-irrigation device.

PROCEDURE

A 73-year-old woman with rectal cancer had a biopsy-proven adenocarcinoma within 9 cm of the anal verge. She underwent totally robotic total mesorectal excision using a dual-docking technique. During pelvic dissection, the console surgeon controlled a 45°, articulating, 8-mm robotic suction-irrigation device, which was used not only for suction and irrigation but also for efficient traction of the rectum to various directions via the R2 arm (the surgeon's left hand). Total procedure time was 445 minutes. The patient was discharged on postoperative day 8 without any complications. Pathologic examination of the specimen revealed a T3N2aM0 adenocarcinoma without circumferential margin involvement. Total

number of lymph nodes harvested was 12, and proximal and distal resection margins were 11.2 and 4.7 cm, respectively.

DISCUSSION

Gentle opening of the plane by continuous traction and optimized visualization in rectal cancer surgery is essential. A wristed robotic suction-irrigation device offers surgeons precise control of a fully articulated suction-irrigation instrument, excellent autonomy at the control console, access to difficult-to-reach anatomy, easy maintenance of a clear surgical field, optimized visualization, and efficient traction of the rectum. In this case, the magnified robotic view using a wristed robotic suction-irrigation device enabled determination of the correct surgical plane and 45° articulating snake wrist with blunt tip provided effective traction of the rectum. Totally robotic total mesorectal excision using wristed robotic suction-irrigation device for rectal cancer was an efficient and useful

procedure.

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