

Supplementary Online Content

van de Graaf FW, Lange MM, Spakman JL et al. Comparison of systematic video documentation with narrative operative report in colorectal cancer surgery. *JAMA Surg*. Published online January 23, 2019. doi:10.1001/jamasurg.2018.5246

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eAppendix 2. Requirements for Adequacy of Systematic Video Recording and Narrative Operative Report

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eTable. Discrepancies Between Video Recordings, Video Review and Narrative Operative Report Within 113 Study Group Cases

This supplementary material has been provided by the authors to give readers additional information about their work.

eAppendix 1. Printable version of the Case Report Form (CRF).

eAppendix 1. Printable version of the Case Report Form (CRF).

LAPAROSCOPIC RIGHT HEMICOLECTOMY

PATIENT IDENTIFICATION NUMBER DATE .. / .. /

INDICATION

SURGICAL PROCEDURE(S) PERFORMED

SURGEON (INITIALS, LAST NAME)

VIDEO DOCUMENTATION TECHNIQUE GOPRO CAMERA
 OTHER CAMERA:

VIDEO DOCUMENTATION (PLEASE CHECK BOX OF EVERY RECORDED STEP OR WRITE N/A IF THIS STEP IS NOT APPLICABLE FOR YOUR PROCEDURE)

STEP 1

1 Introduction of trocars under vision 10sec

STEP 2: EXPLORATION

2A Liver: right and left lobe 10sec

2B Parietal peritoneum: including falciform and teres ligament 10sec

2C Tumor: including ink 10sec

STEP 3: VASCULAR CONTROL

3A Ligation level of ileocolic artery and vein 10sec

3B Ligation of right colic artery and vein (if present) and/or right branches of middle colic artery and vein 10sec

3C In case of extended right hemicolectomy: ligation of middle colic artery and vein 10sec

STEP 4: MOBILIZATION AND RESECTION

4A Transection of distal ileum (within 10cm from ileocecal valve; intracorporeal or extracorporeal) 10sec

4B Specimen (with unfolded mesentery) 10sec

STEP 5: ANASTOMOSIS

5A Anastomosis 10sec

5B Laparoscopic check of rotation of ascending (ileal) loop 10sec

STEP 6: CLOSURE

6 Intraperitoneal trocar sites after removal of trocars 10sec

UNEXPECTED FINDINGS

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LAPAROSCOPIC TRANSVERSE COLECTOMY

PATIENT IDENTIFICATION NUMBER DATE/..../....
INDICATION
SURGICAL PROCEDURE(S) PERFORMED
SURGEON (INITIALS, LAST NAME)
VIDEO DOCUMENTATION TECHNIQUE GOPRO CAMERA
 OTHER CAMERA:

VIDEO DOCUMENTATION (PLEASE CHECK BOX OF EVERY RECORDED STEP OR WRITE N/A IF THIS STEP IS NOT APPLICABLE FOR YOUR PROCEDURE)

STEP 1

1 Introduction of trocars under vision 10sec

STEP 2: EXPLORATION

2A Liver: right and left lobe 10sec

2B Parietal peritoneum: including falciform and teres ligament 10sec

2C Tumor: including ink 10sec

STEP 3: VASCULAR CONTROL

3 Proximal ligation of middle colic artery and vein 10sec

STEP 4: MOBILIZATION AND RESECTION

4A Mobilization of splenic flexure (imaging of spleen) 10sec

4B Specimen (with unfolded mesentery) 10sec

STEP 5

5 Anastomosis 10sec

STEP 6: CLOSURE

6 Intraperitoneal trocar sites after removal of trocars 10sec

UNEXPECTED FINDINGS

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LAPAROSCOPIC LEFT HEMICOLECTOMY

PATIENT IDENTIFICATION NUMBER DATE/..../....

INDICATION

SURGICAL PROCEDURE(S) PERFORMED

SURGEON (INITIALS, LAST NAME)

VIDEO DOCUMENTATION TECHNIQUE GOPRO CAMERA
 OTHER CAMERA:

VIDEO DOCUMENTATION (PLEASE CHECK BOX OF EVERY RECORDED STEP OR WRITE N/A IF THIS STEP IS NOT APPLICABLE FOR YOUR PROCEDURE)

STEP 1

1 Introduction of trocars under vision 10sec

STEP 2: EXPLORATION

2A Liver: right and left lobe 10sec

2B Parietal peritoneum: including falciform and teres ligament 10sec

2C Tumor: including ink 10sec

STEP 3: VASCULAR CONTROL

3A Ligation level of left colic artery and vein at level of origin from inferior mesenteric artery, sigmoid arteries and vein 10sec

3B Ligation of left branches of middle colic artery and vein 10sec

3C In case of extended left hemicolectomy: ligation of middle colic artery and vein 10sec

STEP 4: MOBILIZATION AND RESECTION

4A Mobilization of splenic flexure (imaging of spleen) 10sec

4B Identification of left ureter (manipulation) 10sec

4C Specimen (with unfolded mesentery) 10sec

STEP 5

5 Anastomosis 10sec

STEP 6: CLOSURE

6 Intraperitoneal trocar sites after removal of trocars 10sec

UNEXPECTED FINDINGS

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LAPAROSCOPIC SIGMOIDECTOMY

PATIENT IDENTIFICATION NUMBER DATE/..../....

INDICATION

SURGICAL PROCEDURE(S) PERFORMED

SURGEON (INITIALS, LAST NAME)

VIDEO DOCUMENTATION TECHNIQUE GOPRO CAMERA
 OTHER CAMERA:

VIDEO DOCUMENTATION (PLEASE CHECK BOX OF EVERY RECORDED STEP OR WRITE N/A IF THIS STEP IS NOT APPLICABLE FOR YOUR PROCEDURE)

STEP 1

1 Introduction of trocars under vision 10sec

STEP 2: EXPLORATION

2A Liver: right and left lobe 10sec

2B Parietal peritoneum: including falciform and teres ligament 10sec

2C Tumor: including ink 10sec

STEP 3: VASCULAR CONTROL

3 Ligation of arteries and veins 10sec

STEP 4: MOBILIZATION AND RESECTION

4A Identification of left ureter (manipulation) 10sec

4B Specimen (with unfolded mesentery) 10sec

STEP 5: ANASTOMOSIS

5A Perforation of stapler pin through or near (<1cm) stapler line 10sec

5B Donuts 10sec

5C Anastomosis 10sec

5D Anastomotic (air) leak test 10sec

STEP 6: CLOSURE

6 Intraperitoneal trocar sites after removal of trocars 10sec

UNEXPECTED FINDINGS

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LAPAROSCOPIC (LOW) ANTERIOR AND ABDOMINOPERINEAL RESECTION

PATIENT IDENTIFICATION NUMBER DATE/..../....
 INDICATION
 SURGICAL PROCEDURE(S) PERFORMED
 SURGEON (INITIALS, LAST NAME)
 VIDEO DOCUMENTATION TECHNIQUE GOPRO CAMERA
 OTHER CAMERA:

VIDEO DOCUMENTATION (PLEASE CHECK BOX OF EVERY RECORDED STEP OR WRITE N/A IF THIS STEP IS NOT APPLICABLE FOR YOUR PROCEDURE)

STEP 1

1 Introduction of trocars under vision 10sec

STEP 2: EXPLORATION

2A Liver: right and left lobe 10sec

2B Parietal peritoneum: including falciform and teres ligament 10sec

2C Tumor: including ink 10sec

STEP 3: VASCULAR CONTROL

3A Low tie (ligation of upper rectal artery at bifurcation of inferior mesenteric and left colic arteries) or high tie 10sec

STEP 4: MOBILIZATION AND RESECTION

4A Identification of left ureter (manipulation) 10sec

4B Specimen (with unfolded mesentery) 10sec

4C Identification of hypogastric nerves ("wishbone") 10sec

STEP 5: ANASTOMOSIS

5A Perforation of stapler pin through or near (<1cm) stapler line 10sec

5B Donuts 10sec

5C Anastomosis 10sec

5D Air leak test of anastomosis 10sec

STEP 6: CLOSURE

6 Intraperitoneal trocar sites after removal of trocars 10sec

UNEXPECTED FINDINGS

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eAppendix 2. Requirements for Adequacy of Systematic Video Recording and Narrative Operative Report

REQUIREMENTS FOR AN ADEQUATE RECORDING

Step 1: Introduction of trocars under vision:

- Complete visualization of the introduction of all trocars.

Step 2: Exploration

- Complete visualization of right and left liver lobe, both anterior and posterior planes.
- Complete visualization of the tumor and its surrounding tissue before dissection, including ink marker if present.
- Complete visualization of the parietal peritoneum of the abdomen.

Step 3: Vascular control

- Ligation of identified artery and vein.
- If vascular structures are spared, these should be identifiable on the recording.

Step 4: Mobilization and Resection

- In **right hemicolectomy**: The terminal ileum should be transected within 10cm of the ileocecal valve. The amount of terminal ileum resected must be visualized during resection or identified in the specimen
- In **transverse colectomy** or **left hemicolectomy**: after mobilization of the splenic flexure of the colon, an intact spleen should be visible or, if damaged, after hemostasis.
- In **left hemicolectomy, sigmoidectomy** or **low anterior resection/abdominoperineal resection**: The left ureter should be identified.
- The resected specimen should be recorded extracorporeal, identifying all of the following elements: tumor (including ink, if present), vessels and unfolded mesentery.

Step 5: Anastomosis

- The anastomosis should be recorded laparoscopic or extra-corporeal, containing the following aspects: tension, interposition and vascularization.
- In sigmoidectomy or low anterior resection/abdominoperineal resection: If the anastomosis is created using the transanal circular stapler:
 - Perforation of the distal part of the anastomosis by the transanal stapler pin.
 - After removal, donuts should be recorded demonstrating structural integrity.

Step 6: Closure

- The removal of all trocars should be recorded, showing the intraperitoneal trocar sites after removal.

REQUIREMENTS FOR AN ADEQUATE REPORTING

Step 1: Introduction of trocars under vision:

- Mentioning of trocars introduced under vision

Step 2: Exploration

- Mentioning of visualization of liver with observation.
- Mentioning of tumor visualization and its surrounding tissue, including ink marker (if present).
- Mentioning of visualization of the parietal peritoneum of the abdomen.

Step 3: Vascular control

- Mentioning of identification and ligation of artery and vein.

Step 4: Mobilization and Resection

- In **right hemicolectomy**: The terminal ileum should be transected within 10cm of the ileocecal valve, approximate length should be mentioned.
- In **transverse colectomy** or **left hemicolectomy**: Mobilization of the splenic flexure of the colon should be mentioned, including observation of intact spleen or possible damage followed by intervention
- In **left hemicolectomy, sigmoidectomy** or **low anterior resection/abdominoperineal resection**: mentioning of identification of the left ureter.
- Mentioning of investigation of the resected specimen post resection.

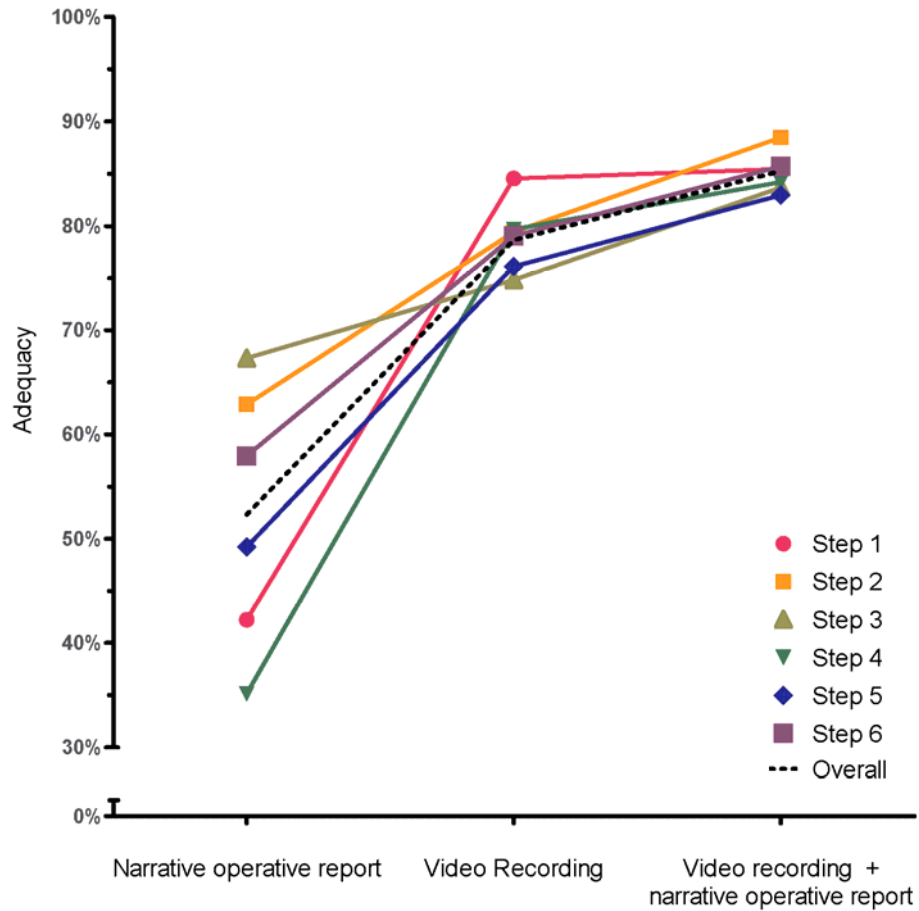
Step 5: Anastomosis

- Mentioning of the quality of the anastomosis, including the following aspects: tension, interposition and vascularization (color).
- In sigmoidectomy or low anterior resection/abdominoperineal resection: If the anastomosis is created using the transanal circular stapler:
 - Description of the process of creating the anastomosis, including: perforation of the distal part of the anastomosis by the transanal stapler pin and the quality of the donuts

Step 6: Closure

- Mentioning of the removal of trocars under vision.

eFigure 1. Reporting adequacy per documentation method among study cases for each key moment.



Caption:

Adequacy is defined as the percentage of adequate steps per total number of applicable steps

Step 1: Introduction of trocars under vision

Step 2: Exploration

Step 3: Vascular control

Step 4: Mobilization and resection

Step 5: Creation of Anastomosis

Step 6: Closure

eTable. Discrepancies between video recordings, video review and narrative operative report within 113 study group cases

Procedure steps of study cases (n=113)	Total steps	Recorded but not seen ^a	Described but not seen ^b	Seen but not described ^c
Step 1 - Introduction of trocars	110	8 (7.3)	1 (0.9)	45 (40.9)
Step 2 - Exploration	321	37 (11.5)	29 (9.0)	65 (20.2)
Step 3 - Vascular control	147	10 (6.8)	13 (8.8)	20 (13.6)
Step 4 - Mobilization and resection	266	14 (5.3)	12 (4.5)	103 (38.7)
Step 5 - Anastomosis	264	17 (6.4)	18 (6.8)	71 (26.9)
Step 6 - Closure	105	11 (10.5)	7 (6.7)	18 (17.1)
Total steps	1213	97 (8.0)	80 (6.6)	322 (26.5)
Data are presented as <i>N</i> (%) of adequate steps. ^a Steps stated to have been recorded by primary surgeon, but not seen upon video review. ^b Steps adequately described in the narrative operative report, but not adequately seen upon video review. ^c Steps adequately seen upon video review, but not adequately described in the narrative operative report				