

Supplement 1 - Free text answers in expert questionnaire

In our expert questionnaire participants were asked to suggest additional surgomic features for each surgomic feature category within a free text field. The original answers are listed below.

New surgomic features

1. Surgical field
 - Adhesions
 - Presence of foreign bodies (e.g. compress, needle)
 - Anastomosis technique (in general which techniques were used)
 - Color of esophageal mucosa
 - Dissection with respect to anatomic layers/structures and their reconstruction
 - Number of previous operations
 - Known anatomic variants (e.g., right hepatic artery from superior mesenteric artery)
 - Status post removal of organs/structures
2. Instrument
 - Material usage such of clips, gauze or needles
 - Movement of instrument (trajectory) (n=2)
 - Instrument type
 - Experience of team members with specific types of instruments
 - Type of instrument in connection with surgical phase, enabling recognition of e.g. an error made by the surgical team

3. Temporal course of procedure

- Duration of steps/phases (n=6, already included in detailed description of our surgomic feature nr. 17 "duration of surgery")
- Date and starting time of surgery, e.g. Mondays or in the evening the procedure might be less accurate
- Deterioration from standard procedure

4. Patient

- Texture/color of intestine
- Texture of stomach

5. Anesthesiological data

- Amount / type of blood products given to patients during surgery (n=3), e.g. erythrocytes, platelets, PPSB
- Amount of catecholamines (especially at end of surgery) (n=2)
- Ventilation parameters (n=3)
- Difficulty of ventilation (n=2)
- History of the patient
- Data of anesthesiological devices, e.g. central venous line, peridural catheter
- Degree of relaxation / depth of narcosis
- Lab test results (pre- and intraop)

6. Surgical skill and quality of performance

- Number of surgeries performed of this type

7. Surgical team

- Non-verbal communication aspects
- Modes of interaction between team members
- Quality of decision making

8. Environment

- Room condition (e.g. old or modern)
- Number of times someone is entering the OR
- Disturbances
- Number of phone calls interrupting the surgeon

Suggestions for intraoperative assistance based on surgomic features

- Instrument
 - Visual highlight of potentially dangerous instruments (e.g., scissors) when inserted
 - Highlight of potential harmful application of instrument, e.g., cautery while bipolar forceps manipulates bowel