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ORIGINAL RESEARCH ARTICLE

Physicians' assessment of complications after gynecological surgery in Sweden: The GYNCOM survey

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Abstract

Introduction: Complications after gynecological surgery in Sweden are registered in the well-established Swedish National Quality Register of Gynecological Surgery, GynOp. The aim of this study was to analyze interrater reliability in assessing complications according to the methods in GynOp, and to explore physicians' perceptions of registering complications.

Material and methods: A digital survey was sent to gynecologists and residents in gynecology in Sweden. Participating clinics were recruited through the Swedish network for national clinical studies in Obstetrics and Gynecology, SNAKS. Twenty fictional cases, intended to represent normal postoperative course, failure to cure, and varying degrees of complications, were developed by the research group. The clinical scenarios included abdominal and laparoscopic surgery of the uterus and adnexa, vaginal hysterectomies, as well as hysteroscopy. The respondents graded each case on the presence of a complication (yes/no). Type of complication, severity, and what action the complication required according to Clavien-Dindo was registered if a complication was acknowledged, according to the method in GynOp. Interrater reliability and the opinions of the respondents were presented descriptively. More than 80% of respondents making the same assessment was considered as agreement.

Results: The response rate was 41%, with 104 responding physicians from 16 gynecological clinics. Type and severity of complication was considered relevant to register by 88% and 89% of respondents, respectively. Agreement on whether the case described a complication was >80% in 85% (17/20) of cases and agreement using the Clavien-Dindo classification was >90% in 80% (16/20) of cases. There was high agreement in assessments of classically severe complications, such as pulmonary embolism and ureteral damage, in both presence of complication and severity, as well as Clavien-Dindo (>90% for all methods). Cases with agreement <80% on whether the case described a complication were bordering between normal postoperative course and minor complication.

Abbreviations: GynOp, The Swedish National Quality Register of Gynecological Surgery.

Conclusions: This study provides validation for the methods used to register complications after gynecological surgery according to the GynOp register, including the use of Clavien-Dindo in gynecology. However, the results indicate a need to define what should be considered symptoms inherent to each type of surgery.

KEYWORDS
Clavien-Dindo, complications, gynecological surgery, interrater reliability, quality register

1 | INTRODUCTION

There is consensus that it is important to register surgical outcomes and complications, to enable good quality of care.[1,2] The issue is complex as there are multiple definitions of what constitutes a complication.[3,4] In addition, there will always be a certain amount of subjectivity by the reporting surgeon and different means of collecting data.[5] Hence, the comparability of complications from different studies, sites, and even between surgeons can be questioned if there is no common definition and method for reporting complications.

The Swedish National Quality Register of Gynecological Surgery (GynOp) is a national quality register consisting of six sub-registers, covering all major gynecological surgeries with benign indication in Sweden.[6] Until 2020 the register also covered surgeries with confirmed malignancies. The register is certified at the highest level, and approved by the Swedish data protection agency.[7] In 2019 the coverage of gynecological surgeries in Sweden registered in GynOp was 88.6% according to linkage with the Swedish Patient register.[8] Any undesired events after surgery are entered by the patient through web-based questionnaires at 2 months and at 1 year after surgery, with a system using electronic and paper reminders in case of no response. The physicians report complications at surgery, at discharge from hospital, and then at 2 months and 1 year after surgery. The physicians' assessment is based on a combination of the patients' questionnaire, a survey of the medical records and/or personal contact with the patient. The method for registration of complications in GynOp, with the patient reporting symptoms and physicians reporting type and severity of complication, was developed in multiple steps in a validation process. However, no description of the process was published.

In 2017, the Clavien-Dindo system of grading complications according to the action needed to treat the complication was introduced into GynOp, as a complement to the previous system and to enable international comparisons. Clavien-Dindo has been validated in general surgery[2,9] and in urology.[10] However, the European Association of Urology stated a need for adjustments to fit the specialty.[10] A literature search found no study validating Clavien-Dindo in gynecology, apart from comparing frequencies of complications between different gynecological units.[11] Hence, there is a lack of validated assessment of complications in gynecological surgery, both in Sweden and internationally.

The aim of this study was to explore interrater reliability in assessing complications according to type and severity of complication as well as classification according to Clavien-Dindo, using fictional case descriptions. The study also aimed to explore the perceptions of physicians regarding the registration of complications by these means.

Key message

The methods used to register complications in The Swedish National Quality Register of Gynecological Surgery has high interrater reliability. However, a definition of what should be considered symptoms inherent to type of surgery is needed.

2 | MATERIAL AND METHODS

A cross-sectional study was conducted through an online survey sent to gynecologists and residents working in gynecological clinics in Sweden. Data collection was made through a digital survey, Artologik®, Survey and Report Version 4.1.188, supplied by Umeå University, and was performed between November 25, 2021 and March 31, 2022. Recruitment of participating clinics was made through the Swedish Network for National Clinical Studies in Obstetrics and Gynecology, SNAKS.[12] After recruitment of clinics, the digital survey was sent to gynecologists and residents in Obstetrics and Gynecology by email, supplemented by a reminder after 10 days. Informed consent was collected at the initiation of the web-based survey.

The survey included questions on baseline characteristics such as number of years working in Obstetrics and Gynecology, title (resident, consultant, senior consultant) and experience in grading complications in GynOp (Figure S1). Statements regarding the relevance and simplicity of grading complications in GynOp according to type, severity, and Clavien-Dindo was answered on a five-point Likert scale (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree) or "Do not know". Fictional cases were developed by the research team to represent normal postoperative course, failure to cure and varying degrees of complications. The clinical scenarios included abdominal and laparoscopic surgery of the uterus and adnexae, vaginal hysterectomies as well as hysteroscopy.

The survey was coded to mimic the method for assessment of complications in GynOp where complications are subdivided into

several levels; complication or not, severity of complication, specified type of complication, and required action due to the complication, according to the system of Clavien-Dindo.[9] Severity, type, and classification according to Clavien-Dindo are only assessed if the physician indicates a complication. The classification according to Clavien and Dindo is presented in Table 1 and the specified complications used in GynOp can be viewed in the supplementary materials (Table S1).

The survey was pilot tested with four gynecologists external to the research team, before the initiation of data collection. Completing the survey with 20 cases took approximately 20 minutes, which we deemed as the maximum time respondents would spend. An example of a completed survey can be seen in the supplementary material (Figure S1).

2.1 | Statistical analysis

A sample size calculation before initiation indicated that a minimum of 88 responses was required for determining the interrater agreement with a target error of margin of ±7.5%, assuming a true agreement (across a superpopulation of raters) of 85%. Categorical variables were summarized as numbers and percentages. The agreement of classification according to the original GynOp system compared with the agreement of classification according to the Clavien-Dindo system was assessed descriptively. Fisher's exact test was used to assess proportions in categorical variables comparing multiple groups. Two-sided p value <0.05 was considered to indicate statistical significance. Interrater reliability in the assessment of complications was presented descriptively, using the conventional level of 80% or more of the respondents to indicate agreement. (If <20% of respondents marked the case as a complication it was regarded as >80% agreement on there not being a complication, if >80% marked it as a complication it was regarded as agreement on the presence of a complication.) SPSS (IBM Corp. IBM SPSS Statistics, version 28.0) was used for the statistical analysis.

2.2 | Ethics statement

Ethical approval was obtained from the Swedish ethical review authority on November 1, 2021 (Dnr. 2021-05313-01).

3 | RESULTS

The response rate was 41%, with 104 responses from 16 gynecological clinics in Sweden, ranging from university hospitals to county hospitals. More than 85% of respondents were either consultants or senior consultants and the majority had more than 10 years of experience in working in obstetrics and gynecology (Table 2).

Type and severity of complication was considered relevant to register by 88% (91/104) and 89% (92/104) of the respondents, respectively. There was no significant difference depending on the experience of the respondent (Table 3). In contrast, 24% (25/104) of respondents stated an inability to appraise the relevance of the Clavien-Dindo classification, and 26% (27/104) stated an inability to assess the simplicity of the classification. This was most evident in the group of residents.

TABLE 1 Classification of surgical complications according to the Clavien-Dindo classification.

Grade I	Any deviation from the normal postoperative course without the need for pharmacological treatment or surgical, endoscopic, and radiological interventions. Allowed therapeutic regimens are drugs such as antiemetics, antipyretics, analgesics, diuretics, electrolytes, and physiotherapy. This grade also includes wound infections opened at the bedside.
Grade II	Requiring pharmacological treatment with drugs other than such allowed for grade I complications. Blood transfusions and total parenteral nutrition are also included.
Grade III	Requiring surgical, endoscopic, or radiological intervention
IIIa	Intervention not under general anesthesia
IIIb	Intervention under general anesthesia
Grade IV	Life-threatening complication requiring intensive care management
IVa	Single-organ failure
IVb	Multiorgan failure
Grade V	Death of the patient

TABLE 2 Respondent characteristics in the GYNCOM survey study.

	N (%)
Profession (in Obstetrics and Gynecology)	
Resident	15 (14)
Consultant	31 (30)
Senior consultant	58 (56)
	104 (100)
Years working in obstetrics and gynecology	
<5 years	13 (13)
5–10 years	20 (19)
>10 years	71 (68)
	104 (100)
Experience in assessing complications in GynOp	
Never	5 (5)
Occasionally	26 (25)
Couple of times/quarter	22 (21)
Couple of times/month	17 (16)
Multiple times/month	34 (33)
	104 (100)

TABLE 3 Physicians' opinion of registration of complications according to type, severity, and classification according to Clavien-Dindo classification. *N* (%).

		Disagree	Partially agree/neither agree nor disagree	Agree/ strongly agree	Do not know	*p* value
It is relevant to register type of complication	Total	1 (1)	10 (10)	91 (88)	2 (1.9)	
	Resident		3 (20)	11 (73)	1 (7)	
	Consultant		1 (3)	30 (97)		0.10
	Senior consultant	1 (1)	6 (10)	50 (86)	1 (2)	
It is relevant to register severity of complication	Total	2 (2)	7 (7)	92 (89)	3 (3)	
	Resident	1 (7)	2 (13)	11 (73)	1 (7)	
	Consultant			31 (100)		0.28
	Senior consultant	1 (2)	5 (9)	50 (86)	2 (3)	
It is relevant to register complication according to Clavien-Dindo	Total	3 (3)	18 (17)	58 (56)	25 (24)	
	Resident	1 (7)	4 (27)	3 (20)	7 (47)	
	Consultant	1 (3)	2 (6)	17 (55)	11 (36)	**0.005**
	Senior consultant	1 (2)	12 (21)	38 (66)	7 (12)	
It is easy to register type of complication	Total	5 (5)	38 (37)	52 (50)	9 (9)	
	Resident		6 (40)	6 (40)	3 (20)	
	Consultant	3 (3)	13 (32)	14 (45)	1 (3)	0.44
	Senior consultant	2 (2)	19 (33)	32 (55)	5 (9)	
It is easy to register severity of complication	Total	3 (3)	36 (35)	56 (54)	9 (9)	
	Resident	1 (7)	6 (40)	5 (33)	3 (20)	
	Consultant	1 (3)	12 (39)	17 (55)	1 (3)	0.13
	Senior consultant	1 (1)	18 (31)	34 (59)	5 (9)	
It is easy to register complication according to Clavien-Dindo	Total	3 (3)	29 (28)	45 (43)	27 (26)	
	Resident	1 (7)	6 (40)	1 (7)	7 (47)	
	Consultant	1 (3)	9 (29)	10 (32)	11 (36)	**0.02**
	Senior consultant	1 (2)	14 (24)	34 (59)	9 (16)	

$p < 0.05$ is marked in bold.

In 17 out of 20 fictional cases the agreement between respondents was >80% on whether there was a complication or not. All cases are presented in Table 4 and agreements >80% are marked in bold. (Table 4) There was high agreement in the assessments of classically severe complications, such as pulmonary embolism (case 5), intra-abdominal abscess (case 8), ureteral damage (case 10), and fascial rupture (case 11), in presence of complication, severity, and classification according to Clavien-Dindo (>90% for all). For the three cases that had an agreement <80% on whether there was a complication or not, the cases described anemia after bleeding at myomectomy (case 1), exuding surgical wound without infection (case 6), and urinary incontinence after hysterectomy, performed because of prolapse (case 15).

Each complication was graded according to type and severity in accordance with the method in GynOp. Type of complication is presented in the supplementary material (Table S2). Severity of the complication was graded as minor or severe. In three cases the agreement was <80%, describing pyelonephritis treated in an outpatient setting (case 9), pronounced urinary incontinence (case 15), and re-admittance to hospital due to intestinal paralysis (case 19). Cases with agreement rates of severity between 80% and 90% were those describing anemia after surgery (case 1), intra-abdominal abscess treated with drainage in local anesthetics and antibiotics (case 8), a patient describing pain in the postoperative period (case 14), and the need for clean intermittent catheterization (18). Hence, agreement regarding severity of complication was >80% in 85% (17/20) of cases and >90% for 65% (13/20) of cases.

The agreement in classification according to Clavien-Dindo was >90% in 16 cases. One of the cases with lower agreement was only rated by four individuals to be a complication and should hence be interpreted with caution (case 3). The three remaining cases with inconsistent ratings by the respondents regard how iron supplements for anemia (case 1), clean intermittent catheterization (case 14), and medication to stimulate the bowels in postoperative paralysis (case 19) should be rated (Table 4).

For 14 of the 20 cases, the agreements on both severity and Clavien-Dindo were >80%. There was only one case, concerning postoperative intestinal paralysis (case 19), where the agreements of both severity and Clavien-Dindo were <80%, Two cases with <80% agreement on severity had higher agreement with Clavien-Dindo, describing pyelonephritis treated by oral antibiotics (case 9) and incontinence after hysterectomy due to prolapse (case 15). In contrast, three cases with agreement <80% on Clavien-Dindo had higher agreement on severity, regarding anemia after myomectomy

TABLE 4 Interrater variability in physicians' assessment of complications according to method in the Swedish National Quality Register of Gynecological Surgery. *N* (%).

		Severity[b]		Classification according to Clavien-Dindo[b]				
	Complication[a]	Minor	Severe	I	II	IIIA	IIIB	IV
Case 1. 32-year-old patient who underwent resection of a uterine fibroid, perioperative hemorrhage of 800 mL. Hemoglobin was 93 at discharge from the hospital and the patient was prescribed iron supplements.	41 (39)	33 **(80)**	7 (17)	15 (37)	26 (63)			
Case 2. 48-year-old patient who underwent hysterectomy due to heavy bleeding. Reported a minor complication in the postoperative survey 8 weeks after surgery. "Difficult to pass stools after the surgery, the bowel movements have not quite normalized yet."	14 **(14)**	13 **(93)**	1 (7)	13 **(93)**	1 (7)			
Case 3. 28-year-old patient who underwent hysteroscopic resection of endometrial polyp. The polyp was discovered due to intermittent bleeding. The patient report continued intermittent bleeding in the 8-week follow-up survey.	4 **(4)**	4 **(100)**		3 (75)		1 (25)		
Case 4. 41-year-old patient who had a unilateral salpingo-oophorectomy due to an 8-cm ovarian cyst with benign characteristics. One week after surgery the patient experienced a burning sensation when voiding and a prescription for antibiotics was issued from the health center.	91 **(88)**	91 **(100)**		5 (5)	86 **(95)**			
Case 5. 60-year-old patient who had surgery due to endometrial carcinoma. The day after surgery the patient is in respiratory distress and blood saturation level is measured at 89%. CT angiogram reveals pulmonary embolism. The patient is treated with high doses of low-molecular-weight heparin and does not need to be transferred to intensive care.	104 **(100)**		104 **(100)**		96 **(92)**	7 (7)		1 (1)
Case 6. 31-year-old patient who has undergone laparoscopic sterilization as an outpatient. Four days after surgery assessed at the health center due to a clear exudate from one of the surgical wounds. Wound cleaned and dressed, no antibiotics needed.	41 (39)	41 **(100)**		41 **(100)**				
Case 7. 60-year-old patient who has undergone hysteroscopy due to postmenopausal bleeding, with resection of a polyp. Assessed at the gynecological clinic 5 days after surgery with lower abdominal pain and discharge. The patient was prescribed antibiotics in tablet form.	101 **(97)**	100 **(99)**	1 (1)	3 (3)	98 (97)			
Case 8. 49-year-old patient who underwent hysterectomy and bilateral salpingectomy due to 8-cm myoma with compression. Five days after surgery admitted to hospital with fever and abdominal pain and radiology reveals an abscess. Treated with intravenous antibiotics and drainage of the abscess under local anesthesia.	104 **(100)**	17 (16)	87 **(84)**		5 (5)	97 **(93)**	2 (2)	
Case 9. 40-year-old patient who underwent hysterectomy and bilateral salpingo-oophorectomy in a Pfannenstiel incision due to endometriosis. Assessed at the accident and emergency department with fever and abdominal pain 7 days after surgery. The patient was prescribed antibiotics because of pyelonephritis but was not admitted.	102 **(98)**	62 (61)	40 (39)		101 **(99)**	1 (1)		

(Continues)

TABLE 4 (Continued)

	Complication[a]	Severity[b]		Classification according to Clavien-Dindo[b]				
		Minor	Severe	I	II	IIIA	IIIB	IV
Case 10. 48-year-old patient who underwent hysterectomy due to myoma and dysfunctional bleeding. The surgery was complicated due to a large uterus and adhesions but no per-operative complication was described . Postoperatively increasing creatinine level was noted and radiology revealed damage to the ureter with obstruction of urinary flow. Percutaneous nephrostomy was administered under local anesthetic. Follow-up radiology after a few weeks revealed clearance of the obstruction and free urinary flow.	104 **(100)**	6 (6)	98 **(94)**	1 (1)		99 **(95)**	4 (4)	
Case 11. 60-year-old patient with body mass index BMI 40 kg/m^2 who underwent a hysterectomy and bilateral salpingo-oophorectomy due to atypical hyperplasia. Postoperatively the surgical wound is exuding, and computed tomography indicates a fascial rupture. Reoperation in general anesthetics confirms the suspicion.	104 **(100)**	6 (6)	98 **(94)**			5 (5)	99 **(95)**	
Case 12. 23-year-old patient who had emergent surgery due to ruptured ectopic pregnancy. Underwent unilateral salpingectomy in Pfannenstiel incision. In the 8-week follow-up questionnaire the patient reported a minor complication, "Deprived sensation and a tingling feeling over the scar"	14 **(14)**	14 **(100)**		14 **(100)**				
Case 13. 45-year-old patient who underwent hysterectomy due to cervical dysplasia, where local resection was not possible due to short cervix. Assessed at the gynecological clinic 5 days after surgery presenting low abdominal pain and discharge but no signs of abscess or hematoma. The patient was prescribed antibiotics in tablet form.	91 **(88)**	90 **(99)**	1 (1)		90 **(99)**	1 (1)		
Case 14. 43-year-old patient who underwent hysterectomy due to a large myoma, after surgery problems with emptying the bladder. Taught clean intermittent catheterization before discharge from hospital.	84 **(82)**	75 **(89)**	9 (11)	56 (67)	19 (23)	9 (11)		
Case 15. 60-year-old patient who underwent vaginal hysterectomy due to prolapse. In the 8-week questionnaire the patient writes, "I do not make it to the toilet, the urine just flows. I had no problems before surgery."	50 (48)	34 (68)	16 (32)	46 **(92)**	3 (6)		1 (2)	
Case 16. 28-year-old patient, 7 weeks pregnant with a normal intrauterine pregnancy. Underwent emergent surgery due to a bleeding corpus luteum. Two weeks after surgery diagnosed with deep thrombosis in the calf and treatment with low-molecular-weight heparin was initiated.	93 **(89)**	3 (3)	90 **(97)**		90 **(97)**	2 (2)	1 (1)	
Case 17. 42-year-old patient who underwent vaginal hysterectomy due to dysfunctional bleeding. Assessed 5 days after surgery due to abdominal pain, sonogram reveals a 5 cm hematoma above the vagina. Hemoglobin level 110, no sign of infection. A follow-up visit was planned, but no medications were administered.	93 **(89)**	92 **(99)**	1 (1)	92 **(99)**	1 (1)			

TABLE 4 (Continued)

	Complication[a]	Severity[b]		Classification according to Clavien-Dindo[b]				
		Minor	Severe	I	II	IIIA	IIIB	IV
Case 18. 23-year-old patient who underwent inconclusive diagnostic laparoscopy due to abdominal pain. The patient reported serious complication in the 8-week questionnaire, "Severe pain after the surgery, still more pain than before the surgery".	19 **(18)**	16 **(84)**	3 (16)	18 **(95)**	1 (5)			
Case 19. 56-year-old patient who underwent hysterectomy with bilateral salpingo-oophorectomy. Re-admitted 4 days after surgery with postoperative intestinal paralysis. Spent 2 days in hospital with intravenous fluids and medication to stimulate intestinal movement.	91 **(88)**	63 (69)	28 (31)	20 (22)	69 (76)	2 (2)		
Case 20. 49-year-old patient who underwent vaginal hysterectomy. Assessed at the gynecological clinic due to continued bleeding 2 weeks after surgery, no anemia or sign of infection.	20 **(19)**	20 **(100)**		20 **(100)**				

Note: A summary of the case descriptions with rating by respondents on the presence of a complication, severity of complication, and classification according to Clavien-Dindo classification.

[a]Number of respondents who assessed the case as a complication.

[b]Classification of severity of complication and classification according to Clavien-Dindo was rated by the respondents who categorized the case description as a complication. Cases with an agreement rate ≥80% are marked in bold (≤20% of respondents marking the cases as a complication equals ≥80% agreement on the case not being a complication).

(case 1), bleeding after hysteroscopic resection of polyp (case 3), and urinary retention necessitating clean intermittent catheterization (case 14).

The survey included the option of adding a free text comment after rating all cases, a possibility that 27 of the 104 respondents chose. The free text responses can be seen in the supplementary material (Figure S2).

4 | DISCUSSION

In this study we found that gynecologists and resident gynecologists considered it relevant to register both types of complication and severity of complication after surgery. A quarter of the respondents expressed uncertainty in the relevance and simplicity of the Clavien-Dindo method. However, in rating the fictional cases there was a high agreement between respondents in using the Clavien-Dindo classification. There was also high agreement in the presence of a complication, and severity of the described complication in traditionally severe complications such as pulmonary embolism and ureteral damage. In contrast, there was some disparity regarding the presence of complications in cases bordering between normal postoperative course and minor complication.

The results are limited by using fictional cases and additional scenarios could have provided further information. However, the number of cases was selected to achieve a reasonable timeframe for completing the questionnaire and extending the survey might have reduced the response rate further. The response rate was 41% and was lower than initially calculated for; further clinics were recruited to reach a sufficient number of responses, according to the sample size calculation. The relatively low response rate is likely to have been caused by initial technical problems with the digital survey, where not all potential respondents received the survey. The response rate was calculated on the number of the intended respondents and could be an underestimation. A strength of the study is the support of SNAKS, the Swedish national network for clinical studies, which resulted in physicians from 16 different clinics responding to the survey. Through free text comments at the conclusion of the survey the respondents expressed an opinion that the cases were relevant, and that the study was important. The research group composition of experienced gynecological surgeons and researchers, as well as pilot testing of the cases, contributes to the relevance of the fictional cases. The transferability of the results is increased through the survey mimicking the system in GynOp, which is used nationally.

Dindo et al. divide undesirable events after surgery into three different categories: complication, failure to cure, and symptoms inherent to the surgery;[9] the case descriptions in this study were developed to display a variety of these categories in the gynecological setting. As previously stated, there have been several attempts to define what should be considered a surgical complication. One such definition presented in an editorial by Dindo and Clavien reads "any deviation from the ideal postoperative course that is not inherent in the procedure and does not comprise a failure to cure".[4] As indicated by our results the difficulty might not only lie in having a common general definition for complications. It might also be relevant to discuss what should be seen as symptoms inherent to the specific surgical procedure performed. For example, should incontinence after a hysterectomy due to prolapse be considered a complication or not? The hysterectomy does not necessarily cause the incontinence

but exposes symptoms that have been masked by the prolapse, i.e. occult stress incontinence.[13] Furthermore, certain surgeries confer certain perioperative risks, such as bleeding at myomectomy.[14] Do the consequences of these anticipated events in surgery then represent a complication or is it to be expected?

Patient-reported symptoms after surgery are seen to improve the registration of complications[5,15] and are a central part of the method used for follow up after gynecological surgery in Sweden. The registration of complications in GynOp is aided by a questionnaire sent to the patient at 8 weeks and 1 year after surgery, which is then reviewed by the gynecological clinic where the surgery took place. Some of the case descriptions in the survey mimic the information that a physician would get from the patient questionnaire 8 weeks after surgery, to display the variation in how complications can be first presented before assessment. Functional problems related to bladder and intestines are known to be inherent to abdominal surgery and are represented in the cases. However, there is a lack of common definition to differentiate functional intestinal problems from postoperative paralysis,[16] and the patient's description of the grade of discomfort might be the deciding factor if it is regarded as a complication. In a study with women waiting for gynecological surgery in Sweden the women described insufficient knowledge of what to expect in the recovery after surgery[17] and an association between presurgical expectations and quality of life after surgery has been found.[18] The preoperative information that the woman receives most likely affects what symptoms she accepts to be a part of normal recovery and how she experiences them. If, and to what extent, the patient's description affects the doctor's assessment warrants further study.

To enable quality control of surgical outcome, such as complications, the data need to be collected via an objective method and to be comparable.[9] The Clavien-Dindo classification was introduced in GynOp in 2017 as a complement to the existing registration of type and severity of complication. The method has a rising popularity in scientific papers and its addition was with the intent of enabling international comparisons. An important note is that the Clavien-Dindo classification is quite frequently presented as a scale of severity in scientific articles,[11,19,20] which was not intended according to the authors. Clavien et al. argue that different terms of severity, such as minor and major, always confer a subjective assessment and that the Clavien-Dindo classification is a means for more objective assessments.[2] A weakness in the method, which is acknowledged by the authors, is that grading according to which action is taken depends on the routines at the treating hospital. For example, the same procedure can be performed under either general or regional anesthesia depending on local tradition and this would result in different grades. In addition, routines for management of complications might change over time, hence reducing the comparability both within and between units. Furthermore, a higher grade on the scale does not necessarily infer a higher risk for negative outcome for the patient, eg early intervention with surgery for a ureteral injury rather than nephrostomy.

The use of the Clavien-Dindo classification as a severity score in published articles[11,19,20] indicates a wish, or a tradition, of using severity in grading complication. It also points to a possible inadequacy of Clavien-Dindo on its own. This is supported by our results, where the respondents regarded both type and severity as important to register. In an article validating the use of Clavien-Dindo in urology, the authors also stated a need to adjust the method to fit the specialty.[10] In the Swedish setting, we already have the method of grading complications after gynecological surgery according to type and severity of complication. The addition of Clavien-Dindo to GynOp was an important step in enabling further comparison, due to its international acceptance. The results from this study indicate a unity in assessment in both type, severity, and Clavien-Dindo in gynecology, but with the need to further define what is inherent to each type of surgery.

5 | CONCLUSION

We need unity in assessment of complications to enable continued medical progress, in which comparison of outcome of surgical methods is essential. The Swedish National Quality Register for Gynecological Surgery provides a well-established system for reporting complications. This study provides validation for the methods used in the quality register, including the use of the Clavien-Dindo classification in gynecology. However, there is a need to define what should be considered symptoms inherent to each type of surgical procedure, to be able to differentiate from complications or even failure to cure.

AUTHOR CONTRIBUTIONS

AI was the principal investigator. AI, EC, PL, and AS developed the study protocol, which was revised and approved by all authors. EC designed the case descriptions, with adjustments after discussions with all authors. EC coded the survey, gathered the data, and performed the statistical analysis with advice from PL. EC and AI drafted the manuscript, which was then revised and approved by all authors.

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CONFLICT OF INTEREST STATEMENT

All authors report no conflicts of interest.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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