KOREAN GYNECOLOGIC ONCOLOGY GROUP

SURGICAL MANUAL FOR GYNECOLOGIC ONCOLOGY

Version 1.0

September 2016

KGOG
Korean Gynecologic Oncology Group

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CONTENTS

Abbreviation

IMA: Inferior Mesenteric Artery

KGOG: Korean Gynecologic Oncology Group

LN: Lymph Node

LND: Lymph Node Dissection

LNS: Lymph Node Sampling

NAC: Neoadjuvant Chemotherapy

PALND: Para-aortic Lymph Node Dissection

PLND: Pelvic Lymph Node Dissection

TMC: Treatment Modality Committee

I. Purpose

The purpose of this manual is to facilitate clinical trials and to improve communication between investigators by standardizing and describing operative procedures.

The surgical procedures provided here represent the minimum requirements for participating in a clinical trial. It is recommended to describe these procedures systematically and properly in the operating report form that is offered in the appendix.

This manual will be updated as appropriate to cover various clinical trials and to reflect the latest trends.

II. Hysterectomy

1. Anatomical Nomenclature

1) **Paracervix** (cardinal ligament, Mackenrodt's ligament, or parametrium): dorsolateral attachment of the cervix, tissues that surround the uterine artery between the uterine corpus and pelvic sidewall cranial to the ureter, connective tissue, and lymph channels [1]
2) **Vesicouterine ligament** (ventral parametrium): After complete separation of the uterine artery and superficial uterine vein from the ureter, the genuine connective tissue of the anterior leaflet of the vesicouterine ligament that is the anterior portion of the so-called ureteral tunnel can be identified. The posterior leaflet of the vesicouterine ligament is the tissue residing under the ureter connecting the posterior wall of the bladder and the lateral cervix/upper lateral vagina [2].
3) **Uterosacral ligament** (dorsal parametrium): fibrous tissue and non-striated muscular fibers that are attached to the front of the sacrum and travel from the uterus to the anterior aspect of the sacrum

2. Nerve Preservation

It is meant to identify the hypogastric nerves, the inferior hypogastric nerve plexus (pelvic plexus), and its bladder branches, allowing resection of oncologically relevant pericervical structures while preserving the sympathetic and parasympathetic innervations of pelvic organs [3].

3. Classification of Hysterectomy

This is mainly based on the new classification of radical hysterectomy by Querleu and Morrow [1], because it is considered contemporary and adequate for worldwide communication. However, it has been modified and adapted to Korean circumstances by the Surgery TMC of the KGOG.

Table 1. KGOG Classification of Hysterectomy[1, 6]

	Extent of resection	Ureter
A – Minimum resection of the paracervix[2]	Paracervix: transected medial to the ureter but lateral to the cervix Uterosacral and vesicouterine ligaments: transected closely to the uterus Vaginal resection: generally less than10 mm, without removal of the paracervix	Palpation or direct visualization without freeing from its bed
A (T)[3]	Simple trachelectomy (cervicectomy) Surgical removal of the uterine cervix without removal of the paracervix or vagina, very large conization	
B – Transection of paracervix at the ureter[4]	Paracervix: transected at the level of the ureteral tunnel Uterosacral and vesicouterine ligaments: partial resection Neural component of the paracervix: no resection Vaginal resection: at least 10 mm of the vagina from the cervix or tumor	Unroofed and rolled laterally
B (T)[3]	Radical trachelectomy (cervicectomy) Surgical removal of the uterine cervix with the paracervix and vagina	
C – Transection of the paracervix at the junction with the internal iliac vascular system[5]	Transection of the uterosacral ligaments at the rectum Transection of the vesicouterine ligaments at the bladder Resection: 15–20 mm of the vagina from the tumor or cervix and corresponding paracervix	Completely mobilized
C1 C2	With autonomic nerve preservation Without autonomic nerve preservation	
D –Entire resection of paracervix with vessels	Ultraradical procedures, mostly indicated at the time of pelvic exenteration	Completely mobilized
D1 D2	Resection of the paracervix at the pelvic side, with vessels arising from the internal iliac system, exposing the roots of the sciatic nerve Resection of the paracervix at the pelvic side, with the internal iliac vessels plus the adjacent fascial or muscular structures	

1. Modification of the new classification of radical hysterectomy by Querleu & Morrow [1].
2. It is similar to type I of the "Piver-Rutledge-Smith (PRS) classification" [4].
3. (T) means trachelectomy (cervicectomy).
4. It is similar to type II of the PRS classification.
5. It is similar to type III of the PRS classification.
6. For a clearer understanding, a medical animation is available on the KGOG website (http://goo.gl/aSuRo1).

1) Type A: minimum resection of the paracervix

This is an extrafascial hysterectomy. The paracervix is transected medial to the ureter and lateral to the cervix. The ureter does not need to be unroofed. The uterosacral and vesicouterine ligaments are transected closely to the uterus. The length of vaginal resection is generally less than 10 mm, without removal of the vaginal part of the paracervix.

2) Type B: transection of the paracervix at the ureter

Partial resection of the uterosacral and vesicouterine ligaments is a standard element of this category. The ureter is unroofed and rolled laterally, permitting transection of the paracervix at the level of the ureteral tunnel. The neural component of the paracervix caudal to the deep uterine vein is not resected. At least 10 mm of the vagina from the cervix or tumor is resected.

3) Type C: transection of the paracervix at the junction with the internal iliac vascular system

After the complete mobilization of the ureter, transection of the uterosacral ligament at the rectum and the transection of the vesicouterine ligament at the bladder are characteristics of type C. In addition, 15–20 mm of vagina from the tumor or cervix and the corresponding paracolpos is resected, depending on the extent of vaginal and paracervical involvement and the surgeon's preference. Type C is divided into two types:

C1—with autonomic nerve preservation

C2—without autonomic nerve preservation

In Type C1, the uterosacral ligament is transected after separation of the hypogastric nerves. The bladder branches of the pelvic plexus are preserved in the lateral ligament of the bladder (i.e., the lateral part of the bladder pillar). If the caudal part of the paracervix is transected, careful identification of bladder nerves is subsequently required.

For Type C2, the paracervix is transected completely, including the part caudal to the deep uterine vein.

4) Type D: entire resection of paracervix with vessels

This rare type of operation is characterized by additional ultraradical procedures, primarily indicated at the time of pelvic exenteration. In this type of surgery, the entire paracervix is resected. Type D is divided into two types:

D1—resection of the entire paracervix along with the internal iliac vessels

D2—resection of the entire paracervix, with the internal iliac vessels and adjacent fascial or muscular structures

Type D1 is a resection of the entire paracervix at the pelvic sidewall along with the internal iliac vessels, exposing the roots of the sciatic nerve. The procedure involves a total resection of the vessels of the lateral part of the paracervix. These vessels (i.e., inferior gluteal, internal pudendal, and obturator vessels) arise from the internal iliac vessel system.

Type D2 is the same as D1 plus resection of the entire paracervix with the internal iliac vessels and adjacent fascial or muscular structures (i.e., pubococcygeus, iliococcygeus, coccygeus, and obturator muscles).

III. Lymphadenectomy

1. Types of Lymphadenectomy by Level

Anatomically, arteries are the most stable landmarks for lymphadenectomy.

Four areas or levels are defined according to corresponding arterial anatomy:

1) Level 1, external and internal iliac (including obturator)
2) Level 2, common iliac (including presacral)
3) Level 3, para-aortic infra-IMA
4) Level 4, para-aortic infra-renal

If the other lymph nodes are resected, specify it.

Although lymph nodes can cross borders,

1) The limit between level 1 and level 2 is the bifurcation of the common iliac artery,
2) The limit between level 2 and level 3 is the bifurcation of the aorta,
3) The limit between level 3 and level 4 is the inferior mesenteric artery.

2. Types of Lymphadenectomy by Radicality

1) **Lymph node sampling (LNS):** sampling of a sentinel node, suspicious nodes, or random sampling [5]
2) **Systematic lymph node dissection (LND):** For a systematic pelvic LND (PLND), all lymph nodes and fatty tissues between the external and internal iliac arteries, from the bifurcation of the common iliac artery up to the circumflex vein and above the obturator nerve, should be removed. A systematic para-aortic LND (PALND) includes resection of all lymph nodes and fatty tissue surrounding the aorta, inferior vena cava and renal vessels from the renal vein cranially to the midpoint of the common iliac vessels caudally, and extending laterally to the edge of the psoas major muscle. The range of the minimum number of lymph nodes for an adequate systematic PLND has been previously found to be between 10-25 [5-10]. The number of lymph nodes required can be modified according to the characteristics of a clinical trial.
3) **Debulking:** resection of bulky nodes [8, 11]

IV. Surgical Procedures in Ovarian, Tubal, and Peritoneal Cancers

1. Purpose

1) In cases of suspected early stage diseases, the primary objective of surgical staging of ovarian, tubal, and peritoneal cancers is to establish adjuvant treatment strategies.
2) In cases of suspected advanced stage diseases, optimal debulking surgery of ovarian, tubal, and peritoneal cancers should be achieved with acceptable morbidity.

2. Indications

All cases of suspicious ovarian, tubal, and peritoneal cancers

3. Contents of Procedure

1) Midline vertical abdominal incision from the pubic symphysis to the xiphoid process is recommended for adequate exposure and evaluation of the whole abdomen. Minimally invasive surgical techniques (laparoscopy or robotic surgery) may be performed to accomplish surgical staging for selected patients based on preoperative imaging, such as CT, MRI, or PET/CT [12-18].
2) Prior to systematic exploration, free peritoneal fluid should be aspirated for cytology. Washing cytology with at least 20–50 ml of saline should be obtained in case of no free fluid in abdominal cavity. Patients with stage III or IV disease do not require cytologic assessment [12, 17, 19].
3) A systematic exploration is recommended to check the tumor involvement in the pelvic and abdomen organs, and peritoneal surface; clockwise or counterclockwise examination is usually performed from the cecum cephalad along the right paracolic gutter. The following are investigated sequentially: ascending colon, liver, right diaphragm, stomach, lesser sac, porta hepatis, transverse colon, left diaphragm, spleen, distal pancreas, descending colon, left paracolic gutter, rectosigmoid colon, uterus, ovary, and bladder [12, 17].
4) Biopsy should be performed at any suspicious sites with tumor involvement if the suspected disease affects the surgical staging or adjuvant treatment. Multiple intraperitoneal biopsies from the cul-de-sac, vesical peritoneum, both pelvic sidewalls, and both paracolic gutters should be conducted in case of no evidence of disease [12, 17].

5) Ovarian tumor should be removed intact, and frozen biopsy is strongly recommended during operation, if possible. Hysterectomy with bilateral salpingo-oophorectomy is recommended. Tumors throughout the abdomen should be removed as much as possible. Omentectomy should be fulfilled during surgical staging [20].

6) All visible and palpable tumor volume should be minimized as much as possible with debulking operations, such as visceral and parietal peritonectomy: peritoneal stripping, diaphragmatic resection, cholecystectomy, hepatic resection, splenectomy, distal pancreatectomy, appendectomy, bowel resection, urinary tract resection, partial cystectomy, and lymph node dissection [18, 21-26].

7) Retroperitoneal inspection should be carried out to check for metastasis to pelvic and para-aortic lymph nodes. Pelvic and para-aortic lymph node should be systemically evaluated in case of stage I or II, and the extent of retroperitoneal lymph node dissection could be modified based on the degree of the intraperitoneal residual tumor and the status of the lymph node on the preoperative image (please, see the description of lymphadenectomy) [27-29].

8) Unilateral salpingo-oophorectomy with preservation of the uterus may be considered to preserve fertility for selected patients [30, 31].

9) Before the neoadjuvant chemotherapy (NAC), the method for pathologic diagnosis of ovarian, tubal, and peritoneal cancers is recommended as follows: laparoscopic biopsy, image-guided gun biopsy or aspiration, or cell block from the aspiration of ascites. In case of interval debulking surgery, the traced lesion after NAC should be evaluated carefully and its management should be recorded clearly [32, 33].

10) Operation record is recommended to describe the extent of initial tumors before surgery at pelvis, mid-abdomen, or upper abdomen. Demonstration of the status of residual tumors after surgery, complete or incomplete, is recommended to identify the size and number of remaining lesions. Photograph or video recording is one of the methods used to describe the preoperative and postoperative tumor, and surgical procedures.

V. Perioperative Preparation

1. Antibiotic Prophylaxis

The use of prophylactic antibiotics before surgery is suggested for the prevention of postoperative gynecological infections. Antibiotics are recommended to be given immediately before skin incision. Antibiotic regimen can be selected according to the types of surgery or surgeon's preference. Additional use of prophylactic antibiotics is recommended to maintain effective levels of intravascular antibiotics in certain clinical situations, like massive bleeding or prolonged operative time [34, 35].

2. Prevention of Thromboembolic Disease

Prophylaxis with anticoagulants can be selectively suggested to cancer patients with high risk of deep vein thrombosis and thromboembolic disease.

Table 2. The Methods for the Prevention of Thromboembolic Disease [36-40]

Class	Example
Pharmacologic	Unfractionated heparin, low-molecular weight heparin, fondaparinux, warfarin, dextran
Mechanical	External pneumatic compression, elastic stocking
Behavioral	Short preoperative hospitalization, early postoperative mobilization, feet elevation above heart level

3. Patient's Position

Lithotomy position is recommended for patients who undergo laparotomy, and gel pads can be used for prevention of pressure sores [23].

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VII. Appendix

1. Operation Record Form

Operation Record Form for Cervical Cancer

General information

Patient ID

Name

Operation date

Operator

Assistant

FIGO staging

☐ Ia1 ☐ Ia2 ☐ Ib1 ☐ Ib2 ☐ IIa1 ☐ IIa2 ☐ IIb ☐ IIIa ☐ IIIb ☐ IVa ☐ IVb

Preoperative histologic diagnosis

☐ CIN 1 (mild dysplasia) ☐ CIN 2 (moderate dysplasia) ☐ CIN 3 (severe dysplasia & CIS)

☐ Squamous cell carcinoma ☐ Adenocarcinoma ☐ Adenosquamous cell carcinoma

☐ Neuroendocrine carcinoma ☐ Others (_____)

Disease status

☐ Primary disease ☐ After neoadjuvant chemotherapy

☐ After chemoradiation ☐ Recurrent disease

☐ Others (_____)

Preoperative tumor marker

☐ SCC-Ag (_____) ☐ CA-125 (_____) ☐ CEA (_____)

Anesthesia

☐ General ☐ Spinal ☐ Epidural ☐ Local ☐ Others

Patient's position

☐ Supine ☐ Lithotomy ☐ Others

Approach

Laparotomy

☐ Lower midline incision ☐ Extended lower midline incision

☐ Pfannenstiel's incision ☐ Maylard incision ☐ Others (_____)

Minimally invasive surgery

☐ Laparoscopic ☐ Port numbers(_____)

☐ Robotic ☐ Port numbers(_____)

Conversion ☐ No

☐ Yes from (_____) to (_____)

Reason ☐ Bleeding ☐ Adhesion ☐ Organ injury

☐ Other organ invasion ☐ Others (_____)

Operation type - Hysterectomy (KGOG classification)

☐ **Conization** ☐ LLETZ (LEEP) ☐ Cold knife conization

☐ **Trachelectomy (Cervicectomy)**

☐ Type A(T) Minimum resection of paracervix (Simple trachelectomy;Simple cervicectomy)

☐ Type B(T) Transection of the paracervix at the ureter (Radical trachelectomy;Radical cervicectomy)

☐ **Hysterectomy**

☐ Type A Minimum resection of paracervix (Extrafascial hysterectomy)

☐ Type B Transection of the paracervix at the ureter (Modified radical hysterectomy)

☐ Right ☐ Left

☐ Type C1 Transection of paracervix at the junction with the internal iliac vascular system

With nerve preservation (Nerve-sparing radical hysterectomy)

☐ Right ☐ Left

☐ Type C2 Transection of paracervix at the junction with the internal iliac vascular system

Without nerve preservation (Conventional radical hysterectomy)

☐ Right ☐ Left

☐ Type D1 Resection of the entire paracervix along with the internal iliac vessels

☐ Bladder ☐ Rectum ☐ Inferior gluteal vessel

☐ Internal pudendal vessel ☐ Obturator vessel

☐ Others (_____)

☐ Type D2 Resection of the entire paracervix, with the internal iliac vessels and adjacent fascial or muscular structure

(specify site: _____)

☐ **Aborted** (specify the reason: _____)

☐ **Others** (_____)

Operation type - Lymphadenectomy (KGOG classification)

☐ None

Pelvic LN / Level 1	☐ Rt LNS	☐ Rt LND	☐ Lt LNS	☐ Lt LND
Common iliac LN / Level 2	☐ Rt LNS	☐ Rt LND	☐ Lt LNS	☐ Lt LND
Para-aortic LN (infra-IMA) / Level 3	☐ LNS	☐ LND		
Para-aortic LN (infra-renal) / Level 4	☐ LNS	☐ LND		

☐ Debulking (specify site: _____)

☐ Others (_____)

Combined procedures

Oophorectomy	☐ Right	☐ Left	☐ Bilateral
Salpingectomy	☐ Right	☐ Left	☐ Bilateral
Ovarian cystectomy	☐ Right	☐ Left	☐ Bilateral
Ovarian transposition	☐ Right	☐ Left	☐ Bilateral

☐ Other operation 1 (surgeon: _____) (procedure: _____)

☐ Other operation 2 (surgeon: _____) (procedure: _____)

Intraoperative findings

Frozen biopsy ☐ No ☐ Yes (specify, if yes: _____)

Ascites ☐ No ☐ Yes (_____ mL)

Adhesion ☐ No ☐ Yes (specify, if yes: _____)

Suspicious invasion to adjacent organ

☐ No ☐ Yes

☐ Vagina (_____)

☐ Paracervix (_____)

☐ Vesico-uterine ligament (_____)

☐ Uterosacral ligament (_____)

Lymph node enlargement

☐ No ☐ Yes (specify, if yes: _____)

Nerve preservation procedure ☐ No ☐ Yes

identify nerve, if yes ☐ Superior hypogastric plexus

☐ Right hypogastric nerve ☐ Left hypogastric nerve

☐ Right pelvic plexus ☐ Left pelvic plexus

☐ Right bladder branch ☐ Left bladder branch

Specimen examination during surgery

Size of primary tumor (_____ cm of largest diameter)

Right paracervix width (_____ cm) length (_____ cm)

Left paracervix width (_____ cm) length (_____ cm)

Vaginal length (_____ cm)

Anti-adhesive used ☐ No ☐ Yes (_____)

Intraoperative injury

☐ Ureter (specify, if yes: _____)

☐ Vessel (specify, if yes: _____)

☐ Nerve (specify, if yes: _____)

☐ Others (specify, if yes: _____)

Estimated blood loss (_____ mL)

Transfusion ☐ No ☐ Yes

(p-RBC____pint, Plt conc____pint, FFP____pint, WB____pint)

Drain ☐ No ☐ Yes

Location ☐ LLQ ☐ RLQ ☐ LUQ ☐ RUQ ☐ Others (_____)

Gauze count ☐ Checked ☐ Not checked

Wound closure

Peritoneum ☐ No ☐ Yes

Fascia ☐ No ☐ Yes

Subcutaneous ☐ No ☐ Yes

Skin ☐ No ☐ Yes

Remarks

Operation Record Form for Ovarian, Tubal, and Peritoneal Cancers

General information

Patient ID

Name

Operation date

Operator

Assistant

FIGO staging

☐ IA ☐ IB ☐ IC1 ☐ IC2 ☐ IC3 ☐ IIA ☐ IIB ☐ IIIA1(i) ☐ IIIA1(ii) ☐ IIIA2 ☐ IIIB ☐ IIIC ☐ IVA ☐ IVB

Primary site

☐ Ovary ☐ Fallopian tube ☐ Peritoneum ☐ Unknown

Disease status

☐ Primary disease ☐ After neoadjuvant chemotherapy

☐ Re-staging ☐ Recurrent disease

☐ Others (_____)

Preoperative tumor marker

☐ CA-125 (_____) ☐ CA-19-9 (_____) ☐ HE-4 (_____) ☐ CEA (_____) ☐ Others (_____)

Anesthesia

☐ General ☐ Spinal ☐ Epidural ☐ Local ☐ Others

Patient's position

☐ Supine ☐ Lithotomy ☐ Others

Approach

Laparotomy

☐ Midline incision from xiphoid process to symphysis pubis

☐ Lower midline incision

☐ Pfannenstiel's incision ☐ Maylard incision ☐ Others (_____)

Minimally invasive surgery

☐ Laparoscopic ☐ Port numbers (_____)

☐ Robotic ☐ Port numbers (_____)

Conversion ☐ No

☐ Yes from (_____) to (_____)

Reason ☐ Bleeding ☐ Adhesion ☐ Organ injury

☐ Other organ invasion ☐ Others (_____)

Operation

Fertility preservation ☐ No ☐ Yes

Hysterectomy ☐ No ☐ Yes

☐ Type A ☐ Type B ☐ Type C

Salpingo-oophorectomy, Left ☐ No ☐ Biopsy ☐ Yes

Right ☐ No ☐ Biopsy ☐ Yes

Peritonectomy ☐ No ☐ Yes ☐ Biopsy

Pelvic ☐ Left side wall ☐ Right side wall ☐ Bladder serosa ☐ Cul-de-sac

Abdominal ☐ Left ☐ Right

Diaphragmatic ☐ Left ☐ Right

Omentectomy ☐ No ☐ Yes

☐ Biopsy ☐ Infracolic ☐ Total

Bowel resection ☐ No ☐ Yes (specify, if yes: _____)

Prophylactic stomy ☐ No ☐ Yes (specify, if yes: _____)

Permanent stomy ☐ No ☐ Yes (specify, if yes: _____)

Splenectomy ☐ No ☐ Yes

Other organ resection ☐ No ☐ Yes (specify, if yes: _____)

Video-assisted thoracic surgery ☐ No ☐ Yes (specify, if yes: _____)

Lymphadenectomy (KGOG classification)

☐ None

Pelvic LN / Level 1 ☐ Rt LNS ☐ Rt LND ☐ Lt LNS ☐ Lt LND

Common iliac LN / Level 2 ☐ Rt LNS ☐ Rt LND ☐ Lt LNS ☐ Lt LND

Para-aortic LN (infra-IMA) / Level 3 ☐ LNS ☐ LND

Para-aortic LN (infra-renal) / Level 4 ☐ LNS ☐ LND

☐ Debulking (specify site: _____)

☐ Others (_____)

Other operation (procedure: _____) (surgeon: _____)

Intraoperative findings

Frozen biopsy ☐ No ☐ Yes (specify, if yes: _____)

Ascites ☐ No ☐ Yes (_____ mL)

Adhesion ☐ No ☐ Yes (specify, if yes: _____)

Ovarian tumor ☐ No ☐ Yes (largest tumor size_____ cm/residual tumor size_____cm)

Intraperitoneal tumor ☐ No ☐ Yes (largest tumor size_____ cm/residual tumor size_____cm)

Lymph node enlargement ☐ No ☐ Yes (specify, if yes: _____)

Extraperitoneal tumor ☐ No ☐ Yes (site:___ largest tumor size __ cm/residual tumor size ___cm)

Largest residual tumor

☐ No gross residual ☐ ≤ 0.5cm ☐ ≤ 1cm ☐ ≤ 2cm ☐ > 2cm

Anti-adhesive used ☐ No ☐ Yes (_____)

Intraoperative injury

☐ Ureter (specify, if yes: _____)

☐ Vessel (specify, if yes: _____)

☐ Bowel (specify, if yes: _____)

☐ Others (specify, if yes: _____)

Estimated blood loss (_____mL)

Transfusion ☐ No ☐ Yes

(p-RBC____pint, Plt conc____pint, FFP____pint, WB_____pint)

Drain ☐ No ☐ Yes

☐ LLQ ☐ RLQ ☐ LUQ ☐ RUQ ☐ Others (_____)

Gauze count ☐ Checked ☐ Not checked

Wound closure

Peritoneum	☐ No	☐ Yes
Fascia	☐ No	☐ Yes
Subcutaneous	☐ No	☐ Yes
Skin	☐ No	☐ Yes

Remarks

Tumor Burden Index (TBI) for Ovarian, Tubal, and Peritoneal Cancers

Region	Location	Pre-operative largest diameter (cm)	Post-operative largest diameter (cm)	Findings (describe)	Operation name	Others (describe)
1 Omentum	Omentum					
2 LUQ	Left diaphragm Spleen Distal pancreas					
3 Epigastric	Lesser omentum & lesser sac Stomach Falciform ligament Porta hepatis					
4 RUQ	Right diaphragm Liver Gall bladder Morrison pouch (between right liver and kidney)					
5 Colon	Sigmoid colon, Rectum Cecum, Appendix Ascending colon, Hepatic flexure, Transverse colon, Descending colon, Splenic flexure, Mesentery					
6 Small bowel	Small bowel Mesentery					
7 Para-colic gutter	Right paracolic gutter Left paracolic gutter					
8 Pelvis	Right ovary & pelvic peritoneum Left ovary & pelvic peritoneum Uterus Urinary bladder					
9 LN	Pelvic LN / L1					
	Common iliac LN / L2					
	PALN (infra-IMA) / L3					
	PALN (infra-renal) / L4					

Other sites	Others (describe)_____					

The largest residual tumor	None ( ) or _____mm, Location_____

VII. Appendix

2. Pathologic Report Form

Pathologic Report Form for Cervical Cancer (Excision)

Operation:

☐ Cold knife conization

☐ Loop electrosurgical excision procedure (LEEP)

☐ Other (specify)

Tumor site: uterine cervix

☐ Left superior quadrant (12 to 3 o'clock),

☐ Left inferior quadrant (3 to 6 o'clock)

☐ Right inferior quadrant (6 to 9 o'clock)

☐ Right superior quadrant (9 to 12 o'clock)

☐ Other (specify)

Histologic type: ☐ Microinvasive (T1a1, T1a2) ☐ Invasive

☐ Squamous cell carcinoma

☐ Adenocarcinoma

- ☐ Endocervical, usual type
- ☐ Mucinous (Gastric/Intestinal/Signet-ring cell)
- ☐ Villoglandular
- ☐ Endometrioid
- ☐ Clear cell
- ☐ Serous
- ☐ Other (specify)

☐ Other (specify)

Histologic grade:

☐ Keratinizing ☐ Non-keratinizing

☐ G1 ☐ G2 ☐ G3 ☐ Cannot be assessed ☐ Not applicable

Tumor size:

☐ **Microinvasive**

Depth: ___ mm

Horizontal extent: ___ mm

☐ **Invasive**

Greatest dimension: ___ cm

Additional dimensions (optional): ___ x ___ cm

Depth: ___ mm

Margin:

(1) Endocervical Margin:

☐ Not involved: ___ mm free from margin (specify location, if possible)

☐ Involved by invasive carcinoma/HSIL/LSIL/AIS (specify location, if possible)

(2) Exocervical Margin:

☐ Not involved: ___ mm free from margin (specify location, if possible)

☐ Involved by invasive carcinoma/HSIL/LSIL/AIS (specify location, if possible)

(3) Deep Margin:

☐ Not involved: ___ mm free from margin (specify location, if possible)

☐ Involved by invasive carcinoma/HSIL/LSIL/AIS (specify location, if possible)

Vascular/lymphatic invasion:

☐ Absent ☐ Present ☐ Indeterminate

Pathologic Report Form for Cervical Cancer (Trachelectomy, Hysterectomy, Pelvic Exenteration)

Operation:

- ☐ Simple trachelectomy
- ☐ Radical trachelectomy
- ☐ Total hysterectomy
- ☐ Radical hysterectomy
- ☐ Pelvic extenteration
- ☐ Salpingectomy (Right/Left/Bilateral)
- ☐ Salpingo-oophorectomy (Right/Left/Bilateral)
- ☐ Lymph node sampling/dissection (specify)
- ☐ Other (specify)

Tumor site: uterine cervix

- ☐ Left superior quadrant (12 to 3 o'clock)
- ☐ Left inferior quadrant (3 to 6 o'clock)
- ☐ Right inferior quadrant (6 to 9 o'clock)
- ☐ Right superior quadrant (9 to 12 o'clock)
- ☐ Other (specify):

Histologic type: ☐ Microinvasive (T1a1, T1a2) ☐ Invasive

- ☐ Squamous cell carcinoma
- ☐ Adenocarcinoma
  - ☐ Endocervical, usual type
  - ☐ Mucinous (Gastric/Intestinal/Signet-ring cell)
  - ☐ Villoglandular
  - ☐ Endometrioid
  - ☐ Clear cell
  - ☐ Serous
  - ☐ Other (specify)
- ☐ Other (specify)

Histologic grade:

☐ Keratinizing ☐ Non-keratinizing

☐ G1 ☐ G2 ☐ G3 ☐ Cannot be assessed ☐ Not applicable

Tumor size:

- ☐ Microinvasive
  - Depth: ___ mm
  - Horizontal extent: ___ mm
- ☐ Invasive
  - Greatest dimension: ___ cm
  - Additional dimensions (optional): ___ x ___ cm
  - Depth: ___ mm

Distal margin:

- ☐ Not involved: ___ mm free from margin (specify location, if possible)
- ☐ Involved by invasive carcinoma/HSIL/LSIL/AIS (specify location, if possible)

Endocervical margin: (required in trachelectomy)

☐ Not involved: ___ mm free from margin (specify location, if possible)

☐ Involved by invasive carcinoma/HSIL/LSIL/AIS (specify location, if possible)

Parametrial invasion:

☐ Absent

☐ Present (Right/Left/Bilateral): ___ mm free from margin (optional)

Vascular/lymphatic invasion:

☐ Absent ☐ Present ☐ Indeterminate

Other site involvement:

☐ Absent

☐ Present: Uterine corpus/Right ovary/Left ovary/Right salpinx/Left salpinx/Vagina/Urinary bladder/Rectum

☐ Other (specify)

Lymph node metastasis: ☐ Absent ☐ Present

Greatest metastatic tumor dimension: ___ mm

Extranodal extent: ☐ Absent, ☐ Present (___ mm)

Level 1, external and internal iliac (including obturator): Right (/), Left (/)

Level 2, common iliac (including presacral): Right (/), Left (/)

Level 3, para-aortic infra-IMA: (/)

Level 4, para-aortic infra-renal: (/)

Other (specify)

Pathologic Report Form for Ovarian, Tubal, and Peritoneal Cancers

Operation:

☐ Oophorectomy (Right/Left/Bilateral)
☐ Salpingo-oophorectomy (Right/Left/Bilateral)
☐ Salpingectomy (Right/Left/Bilateral)
☐ Hysterectomy
☐ Omentectomy
☐ Peritoneal biopsy (specify)
☐ Lymph node sampling/dissection (specify)
☐ Other (specify)

Primary tumor site:

☐ Ovary (Right/Left/Bilateral)
☐ Fallopian tube (Right/Left/Bilateral)
☐ Peritoneum
☐ Other (specify)

Tumor size:

Greatest dimension: ___ cm

Additional dimensions (optional): ___ x ___ cm

Fragmented: ___ gm, and/ or ___ x ___ x ___ cm in aggregates

Histologic type:

☐ High-grade serous carcinoma
☐ Low-grade serous carcinoma
☐ Serous tubal intraepithelial carcinoma (STIC)
☐ Mucinous carcinoma (expansile/ infiltrative)
☐ Endometrioid carcinoma
☐ Clear cell carcinoma
☐ Malignant Brenner tumor
☐ Seromucinous carcinoma
☐ Undifferentiated carcinoma
☐ Carcinosarcoma
☐ Other (specify)

Histologic grade:

☐ G1 ☐ G2 ☐ G3 ☐ Not applicable ☐ Cannot be assessed

Tumor extension:

(1) Ovarian surface involvement: Absent/Present (Right/Left/Bilateral)

(2) Fallopian tube surface involvement: Absent/Present (Right/Left/Bilateral)

(3) Ovarian capsule: intact/ruptured/opened (Right/Left/Bilateral)

(4) Pelvic extension below pelvic brim: Absent/Present
(Uterus, Ovary, Fallopian tube, Pelvic peritoneum, Urinary bladder, Sigmoid colon, Rectum, Anterior cul-de-sac, Posterior cul-de-sac, Right pelvic wall, Left pelvic wall, Other (specify))

(5) Involvement of extrapelvic peritoneum: Absent/ Present (Greatest metastatic tumor dimension: __ mm)
(Omentum, Abdominal peritoneum, Stomach, Small bowel, Mesentery, Appendix, Cecum, Ascending colon, Transverse colon, Right paracolic gutter, Descending colon, Left paracolic gutter, Diaphragm, Liver surface, Liver parenchyma, Spleen surface, Spleen parenchyma, Other (specify))

Lymph node metastasis: ☐ Absent ☐ Present

Greatest metastatic tumor dimension: ___ mm

Extranodal extent: ☐ Absent, ☐ Present (___ mm)

Level 1, external and internal iliac (including obturator): Right (/), Left (/)

Level 2, common iliac (including presacral): Right (/), Left (/)

Level 3, para-aortic infra-IMA: (/)

Level 4, para-aortic infra-renal: (/)

Other (specify)

Vascular/lymphatic invasion:

☐ Absent ☐ Present ☐ Indeterminate

Additional pathologic findings:

☐ Endometriosis (specify site) ☐ Endosalpingiosis (specify site) ☐ Other (specify)

Cytology (optional):

Peritoneal washing: ☐ No malignant cells ☐ Malignant cells ☐ Other (specify)

Ascites: ☐ No malignant cells ☐ Malignant cells ☐ Other (specify)

pTNM: pT( ) pN( ) M( )

VII. Appendix

3. Timeline

1) July 30, 2015: KGOG organized and convened a Surgery TMC, which consisted of two teams (uterus and ovary team). Chair, co-chair, team leader, team secretary, and committee members were appointed. The Surgery TMC decided that the purpose of the surgical manual is to facilitate clinical trials and to improve communications between investigators by standardizing and describing operative procedures.

2) August 29, 2015: The Surgery TMC defined the anatomical nomenclatures such as paracervix, lymphadenectomy, and nerve preservation. The Surgery TMC decided to make the KGOG classification of hysterectomy based on the hysterectomy classification by Querleu and Morrow, because it is considered contemporary and adequate for worldwide communication.

3) October 5, 2015: The Surgery TMC decided to make the KGOG operation record format based on the Synoptic Operative Template for Ovarian Cancer of the National Cancer Center. The development strategies about surgical procedures in ovary, tube, and peritoneal cancers were discussed.

4) November 24, 2015: It was decided that the pathologic report forms should be compatible with the Gynecological Pathology Study Group. The necessity of the figures and animations to facilitate understanding of a surgical anatomy was discussed.

5) January 11, 2016: The Surgery TMC checked on the progress of the KGOG surgical manual. The timetable for the manual presentation at the KGOG workshop and the final announcement of the surgical manual was confirmed.

6) February 16, 2016: There was an in-depth discussion of the Gynecological Pathology Study Group's opinion about how to develop the pathologic report forms. The first and corresponding authors of the article dealing with the development of the KGOG surgical manual for gynecologic oncology, which would be submitted to the Journal of Gynecologic Oncology, were determined.

7) March 29, 2016: The draft form of the surgical manual was rechecked to fix some errors such as mistyping and to reflect the Korean context.

8) April 7, 2016: The final form of the surgical manual was presented and released to members of KGOG at the 22nd KGOG Symposium and Workshop.