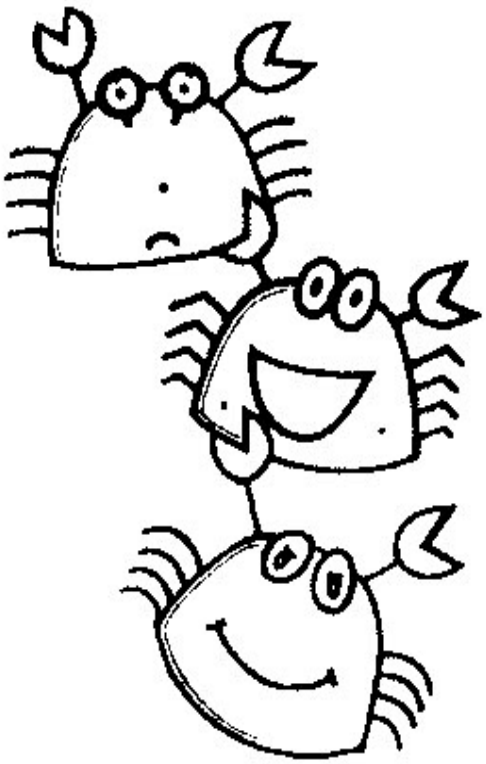
ANNUAL REPORT
ON
GYNECOLOGIC ONCOLOGY
2014



DIVISION OF GYNECOLOGIC ONCOLOGY

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

FACULTY OF MEDICINE, CHIANG MAI UNIVERSITY

CHIANG MAI, THAILAND

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GYNECOLOGIC ONCOLOGY

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WEBSITE : http://www.med.cmu.ac.th/dept/obgyn/Unit/onco/oncofront.htm

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หน่วยมะเร็งวิทยานรีเวช

ภาควิชาสูติศาสตร์และนรีเวชวิทยา

คณะแพทยศาสตร์ มหาวิทยาลัยเชียงใหม่

อนุสาขามะเร็งวิทยานรีเวช

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คุณอรทัย ใบใส

PREFACE

The Department of Obstetrics and Gynaecology was founded in 1958, the same time as the establishment of Faculty of Medicine which is the third medical school in Thailand. The Faculty of Medicine, Chiang Mai university and Maharaj Nakorn Chiangmai Hospital have grown continuously and become the biggest medical school in Northern Thailand. The department consists of 26 staff responsible for teaching and training of 33 residents, 15 clinical fellows, 4 interns and 743 medical students. There is also a growing number of visiting residents, clinical fellows, interns and medical students from others institutes.

This annual report shows data from the Division of Gynecologic Oncology. The gynecologic cancers, in particular cervical cancer, have a high prevalence in Northern Thailand. Many patients come for the treatment. A lot of specialized procedures and operations were performed each year. Therefore, the department has become a well-known training center for gynecologic oncologist. In addition, the Division of Gynecologic Oncology acquired over 30 million baht of funding from Thailand Research Fund (TRF) and National Research Council of Thailand (NRCT) into the department, generating several scientific publications and textbooks during the recent years. Associate professor Prapaporn Suprasert is the head of the Gynecologic oncology unit.

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PREFACE

This Annual Report 2014 is the eighteenth volume of our work in gynecologic oncology. We served around 509 new gynecologic cancer patients in this year which slightly decreased from the last year's number. The leading cancer is still cervical cancer, followed by uterine cancer and ovarian cancer. However, it is to be noted that cervical cancer was more than last year for 12 cases.

Sixty-one Wertheim operations were performed in our hospital. Of these patients, 3 cases were operated via laparoscopic route and 1 case via Robotic surgery. This year 2 cervical cancer patients were underwent laparoscopic radical trachelectomy with successful outcome. About publication, eighteen original studies were published in the peer-reviewed journals in 2014.

This report is divided into 2 sections. The first section provides the statistics of all gynecologic cancer patients in the year 2014 in which the data has been accumulated since 1997. The latter section presents the infrastructure, diagnostic procedures and operations in gynecologic cancer, abstracts of the publications in 2014. This report used the new version of FIGO staging system except in section of ovarian cancer.

I gratefully acknowledge the contributions of the following individuals, without whom this Annual Report could not have been possible. Dr. Manatsawee Manopunya who collected the research data. My research team, Khun Narisa Sribanditmongkol, Khun Sukanya Yanunto and Khun Orathai Baisai gave their help greatly to collect and analyze the patients' data. All staff in Radiation Oncology, Gynecologic Pathology, Medical Oncology, and Oncology Nursing Divisions consistently collaborated on our patients care. I would like to take this opportunity to appreciate my colleagues and fellows for their perseverance and dedication. Finally, a special word of thankfulness goes to our Head Department of OB&GYN, Assoc. Professor Doctor Wirawit Piyamongkol for his continuous support.

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CONTENT

TABLE 1 : Gynecologic Oncology Registry :Chiang Mai University 1997-2014

Site	1997 Number (%)	1998 Number (%)	1999 Number (%)	2000 Number (%)	2001 Number (%)	2002 Number (%)	2003 Number (%)	2004 Number (%)	2005 Number (%)	2006 Number (%)
Cervix	547 (75.3)	483 (72.9)	497 (75.3)	502 (71.3)	500 (70.8)	521 (69.7)	624 (71.7)	532 (66.9)	525 (66.4)	488 (66.8)
Ovary	87 (12.0)	83 (12.5)	82 (12.4)	96 (13.6)	90 (12.7)	110 (14.7)	111 (12.8)	126 (15.8)	121 (15.3)	114 (15.6)
Corpus	48 (6.6)	47 (7.1)	49 (7.4)	56 (8.0)	63 (8.9)	61 (8.2)	67 (7.7)	89 (11.2)	97 (12.3)	84 (11.5)
Vulva	20 (2.7)	21 (3.2)	15 (2.2)	29 (4.1)	23 (3.3)	25 (3.3)	29 (3.3)	22 (2.8)	19 (2.4)	15 (2.1)
Vagina	11 (1.4)	10 (1.5)	3 (0.5)	2 (0.3)	9 (1.3)	6 (0.8)	12 (1.4)	5 (0.6)	4 (0.5)	5 (0.7)
FT	-	2 (0.3)	3 (0.5)	5 (0.7)	3 (0.4)	4 (0.5)	6 (0.7)	5 (0.6)	4 (0.5)	7 (1.0)
PPA	-	-	2 (0.3)	1 (0.1)	-	2 (0.3)	7 (0.8)	3 (0.4)	4 (0.5)	6 (0.8)
GTT	14 (1.9)	16 (2.4)	8 (1.2)	13 (1.9)	18 (2.6)	19 (2.5)	14 (1.6)	13 (1.6)	17 (2.1)	12 (1.6)
Total	**727 (100)**	**662 (100)**	**660 (100)**	**704 (100)**	**706 (100)**	**748 (100)**	**870 (100)**	**795 (100)**	**791 (100)**	**731 (100)**

PPA = Primary Peritoneal Adenocarcinoma FT = Fallopian Tube GTT = Gestational Trophoblastic Tumors

TABLE 1 : Gynecologic Oncology Registry :Chiang Mai University 1997-2014(continue)

Site	2007 Number (%)	2008 Number (%)	2009 Number (%)	2010 Number (%)	2011 Number (%)	2012 Number (%)	2013 Number (%)	2014 Number (%)
Cervix	480 (63.6)	473 (63.2)	436 (58.1)	449(64.2)	387(57.1)	345 (57.9)	285(54.8)	297(58.3)
Ovary	132 (17.5)	115 (15.2)	141 (18.8)	105(15.0)	118(17.5)	86 (14.4)	85(16.3)	87(17.1)
Corpus	91 (12.0)	117 (15.4)	116 (15.5)	94(13.4)	114(16.9)	106 (17.8)	109(21.0)	92(18.1)
Vulva	11 (1.5)	21 (2.8)	24 (3.2)	21(3.0)	16(2.4)	27 (4.5)	24(4.6)	11(2.2)
Vagina	6 (0.7)	7 (0.9)	7 (0.9)	12(1.7)	11(1.6)	5 (0.8)	2(0.4)	2(0.4)
FT	7 (0.9)	4 (0.5)	4 (0.5)	6(0.9)	3(0.4)	4 (0.7)	3(0.6)	7(1.4)
PPA	11 (1.5)	7 (0.9)	8 (1.1)	-	5(0.7)	8 (1.3)	4(0.8)	6(1.2)
GTT	17 (2.3)	15 (2.0)	14 (1.9)	12(1.7)	22(3.3)	15 (2.5)	8(1.5)	7(1.4)
Total	**755 (100)**	**759 (100)**	**750 (100)**	**699(100)**	**676(100)**	**596(100)**	**520(100)**	**509(100)**

PPA = Primary Peritoneal Adenocarcinoma FT = Fallopian Tube GTT = Gestational Trophoblastic Tumors

Gynecologic Oncology Multiple Primary Cancers : Chiang Mai University 2002-2014

Multiple Primary Cancers	2002 Number	2003 Number	2004 Number	2005 Number	2006 Number	2007 Number	2008 Number	2009 Number	2010 Number	2011 Number	2012 Number
Ovarian and Cervical Cancer	**2**	**1**	**1**	**1**	**-**	**-**	**1**	**-**	**-**	**-**	**-**
Ovarian and Corpus Cancer	**7**	**-**	**5**	**13**	**5**	**4**	**8**	**5**	**7**	**4**	**4**
Corpus and Cervical Cancer	**1**	**-**	**-**	**1**	**-**	**1**	**-**	**-**	**-**	**-**	**-**
Corpus and Fallopian Tube Cancer	**1**	**-**	**-**	**-**	**1**	**-**	**-**	**1**	**1**	**-**	**1**
Corpus and Peritoneal Cancer	**-**	**1**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Corpus and ChorioCA	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**
Cervical and Fallopian Tube Cancer	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
Ovarian and Fallopian Tube	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**1**	**-**	**-**
Ovarian and Fallopian Tube and Corpus Cancer	**-**	**-**	**-**	**-**	**1**	**1**	**-**	**-**	**1**	**-**	**-**
Cervical and Vulva Cancer	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**	-	**1**
Corpus and Colon Cancer	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	-	-
Corpus and Bladder cancer	-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	-
Cervix and Ileal cancer	-	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	-

Gynecologic Oncology Multiple Primary Cancers : Chiang Mai University 2002-2014

Multiple Primary Cancers	2013 Number	2014 Number
Ovarian and Cervical Cancer	-	1
Ovarian and Corpus Cancer	4	4
Corpus and Cervical Cancer	-	1
Corpus and Fallopian Tube Cancer	-	1
Corpus and Peritoneal Cancer	-	-
Corpus and ChorioCA	-	-
Cervical and Fallopian Tube Cancer	-	-
Ovarian and Fallopian Tube	-	-
Ovarian and Fallopian Tube and Corpus Cancer	-	-
Cervical and Vulva Cancer	-	-
Corpus and Colon Cancer	-	-
Corpus and Bladder cancer	-	-
Cervix and Ileal cancer	-	-

Operations and Procedures in Gynecologic Oncology

Operations and Procedures	1997 Number	1998 Number	1999 Number	2000 Number	2001 Number	2002 Number	2003 Number	2004 Number	2005 Number	2006 Number
Surgery for Ovarian & Tubal Cancer	64	43	64	70	45	69	88	79	80	111
Surgery for Corpus Cancer	33	28	26	36	43	39	47	60	75	53
Surgery for Vulvar Cancer	10	14	5	19	12	14	21	19	14	12
Radical hysterectomy*	55	77	113	120	116	135	150	151	149	143
Laparoscopic Radical Hysterectomy*	-	-	-	-	-	-	-	4	18	21
Radical Parametrectomy*	2	2	1	1	1	3	4	1	1	2
Laparoscopic Radical Parametrectomy*	-	-	-	-	-	-	-	1	1	3
Extrafacial Hysterectomy	118	110	155	182	121	89	43	35	52	55
Total Laparoscopic Hysterectomy		-	-	-	-	-	10	11	9	4
CKC	66	65	79	13	14	22	16	9	10	5
LEEP	61	35	166	207	194	221	380	276	261	309
Cryosurgery	20	15	18	8	4	3	1	-	2	-
Colposcopy	227	235	463	371	369	306	357	399	499	627

*** with pelvic lymphadenectomy**

CKC = Cold Knife Conization

LEEP = Loop Electrosurgical Excision Procedure

Operations and Procedures in Gynecologic Oncology (continue)

Operations and Procedures	**2007** Number	**2008** Number	**2009** Number	**2010** Number	**2011** Number	**2012** Number	**2013** Number	**2014** Number
Surgery for Ovarian & Tubal Cancer	89	95	115	87	117	103	88	92
Surgery for Corpus Cancer	80	106	83	87	96	94	100	81
Surgery for Vulvar Cancer	8	21	18	20	14	17	20	28
Radical hysterectomy*	120	121	103	125	89	71	58	57
Modified Radical hysterectomy*	-	-	18	12	17	12	7	10
Abandon Hysterectomy*	-	-	1	1	3	7	2	2
Radical Parametrectomy*	1	-	1	-	2	2	-	2
Laparoscopic surgical staging for Corpus cancer	-	-	-	6	4	3	2	5
Laparoscopic Radical Hysterectomy*	11	16	5	-	9	9	8	3
Laparoscopic Radical Trachelectomy*	-	-	-	-	-	-	-	2
Laparoscopic Radical Parametrectomy*	-	-	-	2	-	-	-	-
Total Laparoscopic Hysterectomy	4	2	2	2	2	1	1	3
Robotic Radical Hysterectomy*	-	-	-	-	-	-	2	1
CKC	15	6	5	6	2	-	1	-
LEEP	317	235	175	203	157	173	239	144
Colposcopy	519	556	474	409	406	494	728	659

*** with pelvic lymphadenectomy**

CKC = Cold Knife Conization

LEEP = Loop Electrosurgical Excision Procedure

Cancer of the Cervix

➢ Distribution by

- Age
- Parity
- Stage and Substage
- HIV Status
- Histological Type
- Treatment

TABLE 2 : Cancer of the Cervix : Age Distribution

Age	Number	Percent
≤ 30	12	4.1
31-40	40	13.5
41-50	85	28.6
51-60	90	30.3
61-70	39	13.1
71-80	23	7.7
81-90	8	2.7
Total	**297**	**100.0**

Minimum age 23 years, Maximum age 88 years
Mean age 52.3±12.8 years

TABLE 3 : Cancer of the Cervix : Parity Distribution

Parity	Number	Percent
0	29	9.8
1	69	23.2
2	113	38.0
3	41	13.8
4	12	4.0
5	11	3.7
6	8	2.7
7	4	1.3
9	7	2.4
10	1	0.3
12	1	0.3
14	1	0.3
Total	**297**	**100**

TABLE 4 : Cancer of the Cervix: Stage Distribution.

Stage	Number	Percent
I	98	33.0
II	95	32.0
III	77	25.9
IV	27	9.1
Total	**297**	**100**

TABLE 5 : Cancer of the Cervix: Stage and Substage Distribution.

	Stage	Number	Percent
I	IA1	20	6.7
	IA2	5	1.7
	IB1	58	19.5
	IB2	15	5.1
II	IIA1	11	3.7
	IIA2	10	3.4
	IIB	74	24.9
III	IIIA	4	1.3
	IIIB	73	24.6
IV	IVA	10	3.4
	IVB	17	5.7
Total		**297**	**100**

TABLE 6 : HIV Status in Cervical Cancer Patients dividing by Stage

Stage	Number Negative HIV(%)	Number Positive HIV(%)	Number not done (%)	Total
IA1	18 (6.1)	2(0.7)	0(0)	20(6.7)
IA2	4(1.4)	1(0.3)	0(0)	5(1.7)
IB1	51(17.2)	6(2.0)	1(0.3)	58(19.5)
IB2	12(4.0)	3(1.0)	0(0)	15(5.1)
IIA1	8(2.7)	0(0)	3(1.0)	11(3.7)
IIA2	8(2.7)	1(0.3)	1(0.3)	10(3.4)
IIB	54(18.2)	4(1.3)	16(5.4)	74(24.9)
IIIA	4(1.3)	0(0)	0(0)	4(1.3)
IIIB	61(20.5)	2(0.7)	10(3.4)	73(24.6)
IVA	8(2.7)	2(0.7)	0(0)	10(3.4)
IVB	15(5.1)	0(0)	2(0.7)	17(5.7)
Total	**243(81.8)**	**21(7.1)**	**33(11.1)**	**297(100)**

TABLE 7 : Cancer of the Cervix : Distribution by Histological Type

Histological Type	Number	Percent
Squamous cell carcinoma	**228**	**76.7**
Well differentiation	17	5.7
Moderately differentiation	136	45.8
Poorly differentiation	47	15.8
Not define differentiation	31	10.4
Adenocarcinoma	**46**	**15.5**
Adenosquamous	**11**	**3.7**
Small cell NE	**6**	**2.0**
Clear cell CA	**1**	**0.3**
Mixed small cell NE+ SCCA	**2**	**0.7**
Total	**297**	**100**

SCCA = Squamous cell carcinoma MD = Moderately differentiation
NE = Neuroendocrine WD = Well differentiation
CA = Carcinoma PD = Poorly differentiation

TABLE 8 : Treatment of cancer of the Cervix.

Treatment	Number	Percent
Surgery alone		
TAH	10	3.4
RHPL	20	6.7
Radical parametrectomy with BPL	1	0.3
LRHPL	2	0.7
Laparoscopic assisted vaginal RHPL	1	0.3
Extended hysterectomy with BPL	7	2.4
Laparoscopic Extended hysterectomy with BPL	1	0.3
Laparoscopic Radical Trachelectomy with BPL	2	0.7
Robotic Radical hysterectomy with BPL	1	0.3
Chemotherapy alone	**15**	**5.1**
Concurrent chemoradiation+ Brachytherapy	**130**	**43.8**
RT+Brachytherapy	**50**	**16.8**
Combined treatment		
LRHPL+ RT+Brachytherapy	1	0.3
TAH+Pelvic RT+Brachytherapy	2	0.7
TAH+Brachytherapy	2	0.7
RHPL+RT+ Brachytherapy	7	2.4
RHPL+Brachytherapy	2	0.7
RHPL+CCRT+ Brachytherapy	22	7.4
RHPL+CT	1	0.3
Subtotal hysterectomy with BPL + RT+ Brachytherapy	1	0.3
Extended hysterectomy with BPL + CCRT+ HDR	4	1.3
Debulking tumor+ Chemo	1	0.3
Debulking tumor+ CCRT	1	0.3
Abandon Hysterectomy with BPL +CCRT+ Brachytherapy	4	1.3
Abandon Hysterectomy with BPL +CT	1	0.3
Others		
Lost to FU without treatment	4	1.3
Supportive treatment	4	1.3
Total	**297**	**100**

RHPL Radical Hysterectomy and bilateral pelvic lymphadenectomy
TAH Total Abdominal Hysterectomy
LRHPL Laparoscopic Radical Hysterectomy with Pelvic Lymphadenectomy
TLH Total laparoscopic hysterectomy
CCRT Concurrent Chemoradiation
RT Radiation Therapy
NAC Neoadjuvant Chemotherapy
CT Chemotherapy
BPL Bilateral Pelvic Lymphadenectomy

N.B. Number of RH& BPL = 56 cases

Cancer of the Ovary

➢ Distribution by

- Age
- Parity
- Histology
- Histology Subtype
  - Epithelial Group
  - Germ Cell Tumor Group
  - Sex cord-stromal Group
  - Others Group
- Stage
  - Epithelial Group
  - Germ Cell Group
  - Sex cord-stromal Group
  - Other Group
- Stage and Histology
- Treatment

TABLE 9 : Cancer of the Ovary **:** Age Distribution

Age	Number	Percent
≤20	3	3.4
21-30	5	5.7
31-40	12	13.8
41-50	20	23.0
51-60	29	33.3
61-70	16	18.4
71-80	1	1.1
>80	1	1.1
Total	**87**	**100**

Minimum age 16 years, Maximum age 81 years
Mean age 49.48 ± 13.22 years

TABLE 10 : Cancer of the Ovary : Parity Distribution

Parity	Number	Percent
0	38	43.7
1	12	13.8
2	31	35.6
3	4	4.6
4	1	1.1
8	1	1.1
Total	**87**	**100**

TABLE 11 : Cancer of the Ovary : Histological Distribution

Histology	Number	Percent
Epithelium	72	82.8
Germ Cell	10	11.5
Sex cord-stromal	4	4.6
Unknown	1	1.1
Total	**87**	**100**

* Unknown : refer from provincial hospital without pathology result

TABLE 12 : Epithelial Ovarian Cancer : Histological Subtype Distribution

Histological Subtype	Number	Percent
Serous LMP	6	8.3
Serous adenoCA	18	25.0
Mucinous LMP	12	16.7
Mucinous adeno CA	2	2.8
Endometrioid CA	3	4.2
Clear cell CA	22	30.6
Mixed epithelial CA	4	5.6
AdenoCA	3	4.2
Anaplastic CA associate with Brenner tumor	1	1.4
Epithelial cystic tumor of undetermined nature	1	1.4
Total	**72**	**100**

CA = Carcinoma
LMP = Low malignant potential

TABLE 13 : Ovarian Germ Cell Tumor (GCT) : Histological Subtype Distribution

Histological Subtype	Number	Percent
Mucinous LMP arising in mature cystic teratoma	1	10
Dysgerminoma	1	10
Endodermal sinus tumor	1	10
Immature teratoma	3	30
SCCA arising in mature teratoma	1	10
Thyroid follicular CA arising in struma ovarii	1	10
Mixed germ cell tumor (Immature teratoma gr.3+ Dysgerm cell)	1	10
Anaplastic CA arising in mature cystic teratoma (malignant transformation of mature teratoma)	1	10
Total	**10**	**100**

SCCA = squamous cell carcinoma
gr = grade

TABLE 14 : Sex cord-stromal tumor : Histological Subtype Distribution

Subtype	Number	Percent
Adult granulosa cell tumor	4	100
Total	**4**	**100**

TABLE 15 : Epithelial Ovarian Cancer : Stage Distribution

Stage	Number	Percent
IA	13	18.1
IB	1	1.4
IC	20	27.8
IIA	1	1.4
IIB	3	4.2
IIC	4	5.6
IIIA	2	2.8
IIIB	3	4.2
IIIC	14	19.4
IV	3	4.2
IVB	4	5.6
Advance	4	5.6
Total	**72**	**100**

TABLE 16 : Germ Cell Ovarian Cancer: Stage Distribution

Stage	Number	Percent
IA	2	20.0
IC	6	60.0
IIIC	2	20.0
Total	**10**	**100**

TABLE 17 : Sex cord-stromal tumor: Stage Distribution

Stage	Number	Percent
IA	2	50.0
IC	2	50.0
Total	**4**	**100**

TABLE 18 : Ovarian Cancer : Stage and Histology Distribution

	Epithelial	Percent	Germ cell	Percent	Sex cord stromal tumor	Percent
IA	13	18.1	2	20	2	50
IB	1	1.4	-	-	-	-
IC	20	27.8	6	60	2	50
IIA	1	1.4	-	-	-	-
IIB	3	4.2	-	-	-	-
IIC	4	5.6	-	-	-	-
IIIA	2	2.8	-	-	-	-
IIIB	3	4.2	-	-	-	-
IIIC	14	19.4	2	20	-	-
IV	3	4.2	-	-	-	-
IVB	4	5.6	-	-	-	-
Advance	4	5.6	-	-	-	-
Total	**72**	**100**	**10**	**100**	**4**	**100**

TABLE 19 : Cancer of the Ovary : Primary Treatment and Adjuvant Chemotherapy

Treatment	Number	Percent
Complete SSP with adjuvant chemotherapy	27	31.0
Complete SSP without adjuvant chemotherapy	7	8.0
Incomplete SSP with adjuvant chemotherapy	27	31.0
Incomplete SSP without adjuvant chemotherapy	16	18.4
NAC with Incomplete SSP with adjuvant chemotherapy	6	6.9
NAC plan surgery	1	1.1
NAC plan surgery then to loss	1	1.1
Chemotherapy only	1	1.1
Incomplete SSP plan Chemotherapy loss to FU	1	1.1
Total	**87**	**100**

SSP = Surgical Staging Procedure

NAC = Neoadjuvant Chemotherapy

FU = Follow up

TABLE 20 : Ovarian Cancer : Outcome of Treatment

Outcome	Number	Percent
Under FU without disease	47	54.0
During treatment	27	31.0
During treatment with progress/persist of disease	4	4.6
Palliative treatment	1	1.1
Lost to FU	5	5.7
Death of disease	2	2.3
Refer to provincial hospital for chemotherapy	1	1.1
Total	**87**	**100**

FU = Follow up

Cancer of the Uterine Corpus

➢ Distribution by

- Age
- Menopausal Status
- Underlying Medical Diseases
- Parity
- Clinical Staging
- Surgical Staging
- Histology
- Treatment

TABLE 21 : Cancer of the Corpus : Age Distribution

Age	Number	Percent
≤40	4	4.3
41-50	12	13.0
51-60	41	44.6
61-70	27	29.3
71-80	7	7.6
>80	1	1.1
Total	**92**	**100**

Minimum age 34 years, Maximum age 84 years
Mean age 58.39±9.31 years

TABLE 22 : Cancer of the Corpus: Distribution by Menopausal Status

Menopausal Status	Number	Percent
Yes	79	85.9
No	13	14.1
Total	**92**	**100**

TABLE 23 : Cancer of the Uterine Corpus: Distribution by Underlying Diseases

Medical disease	Number	Percent
None	36	39.1
CA breast	3	3.3
Hypertension	15	16.3
Hypertension+ DM	4	4.3
Hypertension+ DM+ Dyslipidemia	7	7.6
Hypertension+ Dyslipidemia	10	10.9
Hypertension+ Dyslipidemia+ Gout	1	1.1
Hypertension+ Dyslipidemia+ Stroke	1	1.1
Hypertension+ Adrenal insufficiency	1	1.1
Hypertension+ History of CA cervix	1	1.1
Hypertension+ CA breast	1	1.1
Dyslipidemia	2	2.2
Dyslipidemia+ Thyrotoxicosis	1	1.1
DM	2	2.2
Anemia	1	1.1
Asthma	1	1.1
History of CA caecum	1	1.1
History of CA vagina	1	1.1
Ischemic heart disease	1	1.1
Mental retardation	1	1.1
Peptic ulcer	1	1.1
Total	**92**	**100**

DM = Diabetes mellitus

TABLE 24 : Cancer of the Uterine Corpus : Distribution by Parity

Parity	Number	Percent
0	25	27.2
1	11	12.0
2	31	33.7
3	15	16.3
4	7	7.6
5	2	2.2
9	1	1.1
Total	**92**	**100**

TABLE 25 : Cancer of the Uterine Corpus : Distribution by Surgical Staging

	Stage	Number	Percent
I	IA	27	29.3
	IB	18	19.6
II	II	8	8.7
	IIB	1	1.1
III	IIIA	12	13.0
	IIIB	3	3.3
	IIIC1	4	4.3
	IIIC2	7	7.6
IV	IVB	9	9.8
Advance		3	3.3
Total		**92**	**100**

TABLE 26 : Cancer of the Uterine Corpus : Histologic Distribution

Histology Type	Number	Percent
Endometrioid adenoCA		
Grade I	23	25.0
Grade II	11	12.0
Grade III	13	14.1
Carcinosarcoma	14	15.2
Leiomyosarcoma	4	4.3
Low grade ESS	1	1.1
Serous adenoCA	8	8.7
Clear cell adenoCA	5	5.4
Mixed type	12	13.0
Choriocarcinoma	1	1.1
Total	**92**	**100**

CA = carcinoma
ESS = endometrial stromal sarcoma

TABLE 27 : Treatment of Corpus Cancer

Treatment	Number	Percent
Complete SSP	14	15.2
Complete SSP+ Chemotherapy	12	13.0
Complete SSP+ Radiation therapy +Brachytherapy	13	14.1
Complete SSP+Brachytherapy	5	5.4
Complete SSP+ Sequential chemoradiation therapy +Brachytherapy	19	20.7
Incomplete SSP	5	5.4
Incomplete SSP+ Chemotherapy	13	14.1
Incomplete SSP+Brachytherapy	2	2.2
Incomplete SSP+ Radiation therapy +Brachytherapy	3	3.3
Incomplete SSP+ Sequential chemoradiation therapy	1	1.1
Radiation therapy alone	2	2.2
Chemotherapy alone	3	3.3
Total	**92**	**100**

SSP = Surgical Staging Procedure

TABLE 28 : Outcome of Treatment of Corpus Cancer

Outcome	Number	Percent
Under FU without disease	37	40.2
During treatment	40	43.5
Under FU with disease	2	2.2
During treatment with progress/persist of disease	2	2.2
Refer to provincial hospital for chemotherapy	1	1.1
Died of disease	2	2.2
Loss to FU	8	8.7
Total	**92**	**100**

FU = Follow up

Cancer of the Vulva

- **Distribution by**
  - Age
  - Stage
  - Histology
  - Treatment

TABLE 29 : Cancer of the Vulva : Age Distribution

Age	Number	Percent
≤40	2	18.2
41-50	3	27.3
51-60	3	27.3
61-70	2	18.2
>70	1	9.1
Total	**11**	**100**

Minimum age 40 years, Maximum age 75 years
Mean age 53.45. ± 12.10 years

TABLE 30 : Cancer of the Vulva : Stage Distribution

Age	Number	Percent
IB	5	45.5
II	1	9.1
III	2	18.2
IIIA	1	9.1
IIIC	2	18.2
Total	**11**	**100**

TABLE 31 : Cancer of the Vulva : Histological Type Distribution

Histological Type distribution	Number	Percent
Squamous cell carcinoma		
Well differentiation	2	18.2
Moderately differentiation	3	27.3
Poorly differentiation	6	54.5
Total	**11**	**100**

TABLE 32 : Treatment of cancer of the vulva

Treatment	Number	Percent
WLE+small field RT	1	9.1
TAH c BSO* c Hemivulvectomy+BGND+ CCRT	1	9.1
Hemivulvectomy+BGND+ CCRT	1	9.1
Radical local excision+ BGND+ CCRT	1	9.1
Radical local excision+ BGND+ RT	1	9.1
Radical vulvectomy	1	9.1
Radical vulvectomy+ BGND+ RT	2	18.2
Excisionional Biopsy with Left groin node sampling+ CCRT	1	9.1
BGND	2	18.2
Total	**11**	**100**

* TAH c BSO due to co-existing ovarian tumor (Dermoid cyst)

WLE = Wide local excision
BGND = Bilateral groin node dissection
RT = Radiation therapy
CCRT = Concurrent chemoradiation
NAC = Neoadjuvant chemotherapy
CT = Chemotherapy
TAH = Total abdominal hysterectomy
BSO = Bilateral salpingo-oophorectomy

Cancer of the Vagina

- **Distribution by**
  - Age
  - Stage
  - Histology
  - Treatment

TABLE 33 : Cancer of the Vagina

No	HN	Age	Stage	Histology	Treatment	Outcome
1	2327127	50	III	SCCA	CCRT (RT+ Brachyherapy+ Cisplatin)	partial response
2	3565032	69	III	SCCA	Palliative treatment	loss to FU

FU = follow up
SCCA = squamous cell carcinoma
CCRT = concurrent chemo radiation

Cancer of the Fallopian Tube

TABLE 34 : Cancer of the Fallopian Tube 2014

Data	Case 1	Case 2	Case 3
HN	1444061	2650393	2746374
Age	69	50	52
Marital status	Married	Single	Married
Parity	3-0-0-3	0	1-0-0-1
Presenting symptoms	Abnormal bleeding/vagina	Abnormal bleeding/vagina	Pelvic pain
Stage	IIIC	IC1	IIIC
Histology	High grade serous adenoCA	High grade serous adenoCA	Mixed serous and endometrioid adenoCA
Treatment	NAC(Carboplatin x3) TAH & Rt.SO c omental biopsy> Carboplatin x6	TAH &BSO with partial omentectomy c pelvic node sampling c peritoneal washing > PT	TAH &BSO c debulking tumor in pelvic cavity> PTx6
Outcome	Under follow up without disease	During treatment	Under follow up without disease

Data	Case 4	Case 5	Case 6
HN	2771674	3552998	3601097
Age	37	58	51
Marital status	single	married	married
Parity	0	2-0-0-2	0
Presenting symptoms	Abdominal distension	Pelvic mass	Pelvic mass
Stage	IV	IIIA	II at least
Histology	Serous adenoCA	Serous adenoCA, MD	High grade serous adeno CA
Treatment	PTx6> TAH c BSO > PT	TAH c BSO c partial omentectomy> PTx6> Gemcitabide	TAH c BSO > PT
Outcome	During treatment	During treatment	During treatment

Data	**Case 7**
HN	3612500
Age	68
Marital status	married
Parity	3-0-1-1
Presenting symptoms	Pelvic mass
Stage	IIIC
Histology	Serous adenoCA, PD
Treatment	Subtotal hysterectomy c BSO c omentectomy >PT
Outcome	During treatment

CA = Carcinoma
TAH&BSO = Trans abdominal hysterectomy and bilateral salpingo oophorectomy
PT = Paclitaxel and Carboplatin
MD = Moderately differentiated
Rt = Right
SO = Salpingo oophorectomy

Cancer of The Peritoneum

TABLE 35 : Cancer of The Peritoneum 2014

Data	Case 1	Case 2	Case 3
HN	2487475	2505525	2522734
Age	58	77	62
Marital status	married	married	married
Parity	2-0-0-2	4-0-0-4	3-0-1-3
Presenting symptoms	Pelvic mass, dyspepsia	Pelvic mass, dyspepsia	Abdominal distension
Stage	IIIC	IIIC	IV
Histology	Clear cell adenocarcinoma	Adenocarcinoma	Adenocarcinoma
Treatment	PT	Carboplatin	NAC(PT)x2>Palliative treatment
Outcome	During treatment	During treatment	Died of disease

Data	Case 4	Case 5	Case 6
HN	3454167	3580591	3584746
Age	66	63	70
Marital status	Married	Single	Married
Parity	3-0-0-3	0	2-0-1-2
Presenting symptoms	Abdominal distension	Pelvic pain	Pelvic mass
Stage	IV	IIB	IV c brain metastasis
Histology	Papillary CA	Carcinosarcoma	Serous adenoCA
Treatment	NAC(PT)> Debulking tumor	TAH c BSO c Hartmann's procedure > PTx6	Debulking tumor >PTx5> WBRT
Outcome	During treatment	Under follow up without disease	Progression of disease >palliative care at home

PT = Paclitaxel + Carboplatin
PD = Poorly differentiation
MD = Moderate differentiation
NAC = Neoadjuvant chemotherapy
TAH&BSO = Trans abdominal hysterectomy and bilateral salpingo-oophorectomy

Cancer of Two Primary Gynecologic Organs

TABLE 36 : Cancer of the Two Primary Gynecologic Organs 2014

Data	Case 1 CA Ovary+ CA Cervix	Case 2 CA Corpus+ CA Cervix	Case 3 CA Corpus+ CA Tube
HN	2034197	2472969	3437398
Age	75	61	57
Marital status	Married	Married	Single
Parity	3-0-0-3	2-0-0-2	0
Presenting symptoms	Pelvic mass	Menopausal bleeding	Pelvic mass
Stage	Ovary: IC Cervix: IIIB	Corpus: IVB Cervix: IV	Corpus: IIC Tube: IB
Histology	Ovary: Mucinous LMP Cervix: refer from provincial hospital data not available	Corpus: Endometrioid adenoCA gr.1 Cervix: WD, adenoCA	Corpus: Endometrioid adenoCA gr.3 Tube: Endometrioid adenoCA gr.1
Treatment	BSO	PTx6>TAH c BSO> PTx3> Adriamycinx1	TAH c BSO> PTx6
Outcome	Under follow up without disease	Under follow up without disease	Under follow up without disease

Cancer of the Two Primary Gynecologic Organs (continue)

Data	Case 4 CA Corpus+ CA Ovary	Case 5 CA Corpus+ CA Ovary	Case 6 CA Corpus+ CA Ovary
HN	3558469	3570283	3579476
Age	53	49	54
Marital status	Married	single	Single
Parity	1-0-0-1	0	0
Presenting symptoms	Bleeding per vagina	Pelvic mass	Pelvic mass
Stage	Corpus: II Ovary: IC	Corpus: IA Ovary: IIC	Corpus: IA Ovary: IC
Histology	Corpus: Endometrioid adenoCA gr.1 Ovary: Endometrioid adenoCA gr.1	Corpus: Endometrioid adenoCA gr.3 Ovary: Endometrioid adenoCA gr.2	Corpus: Endometrioid adenoCA gr.1 Ovary: Endometrioid adenoCA gr.1
Treatment	TAH c BSO c BPND PANS c partial omentectomy c peritoneal washing > Sequential chemo – RT (PTx6+ RT)	TAH c BSO c Omental Bx > PTx6+ Vaginal brachytheratpy	TAH c BSO + BPND+ PANS+Omentectomy+ Appendectomy+ peritoneal washing > PTx6
Outcome	During treatment	During treatment	Under follow up without disease

Data	Case 7 CA Corpus+ CA Ovary
HN	3613088
Age	43
Marital status	Single
Parity	0
Presenting symptoms	Pelvic pain, bleeding per vagina
Stage	Corpus: IIIA Ovary: IC
Histology	Corpus: Endometrioid adenoCA gr.2 Ovary: Endometrioid adenoCA gr.1
Treatment	TAH c BSO c omentectomy > Sequential Chemo+ RT(PTx6+ RT)
Outcome	During treatment

CA = carcinoma
MD = Moderately differentiation
PT = Paclitaxel and Carboplatin
RT = Radiation therapy
TAH&BSO = Transabdominal hysterectomy and bilateral salpingo-oophorectomy
gr = grade
SCCA = Squamous Cell Carcinoma
BPND = Bilateral pelvic node dissection
PANS = Paraaortic node sampling

Gestational Trophoblastic Disease

- Gestational Trophoblastic Tumor
- Molar Pregnancy

TABLE 37 : Gestational Trophoblastic Tumors in 2014

No	HN	Age (yr)	Initial HCGtiter	Prognosis Classification	Diagnosis	FIGO	Treatment	Result
1	3230506	23	1,156	NMGTT	Choriocarcinoma (patho from TAH& Rt.salpingectomy)	II	EMPx4 C4 17/4/2557	Loss to follow up
2	3552098	25	42,016	NMGTT	Persistent mole	I	MTXx4	Refer to provincial hospital for CT
3	3553320	22	3,203	NMGTT	Persistent mole	I	MTXx15 > Etoposidex3	Refer FU nearby hospital
4	3557779	33	718.8	NMGTT	Persistent mole	I	EM-COx3	Refer to provincial hospital for CT
5	3566118	16	1,000,000	MGTT (lung, brain)	Invasive mole	IV	EM-CO+ WBRT> ICE	During treatment
6	3581235	49	31,234	NMGTT	Persistent mole	I	MTX	Remission
7	3589772	34	317,296	MGTT (lung, liver)	Choriocarcinoma (patho from TAH&BSO)	IV	EMA-Cox4 > TAH&BSO> EMA-EP	During treatment

MGTT = Metastatic Gestational Trophoblastic tumor
NMGTT = Non-metastatic Gestational Trophoblastic tumor
EMA = Etoposide + Methotrexate + Actinomycin D
EMA-CO = Etoposide + Methotrexate + Actinomycin D + Cyclophosphamide+ Vincristine
MTX = Methotrexate
S&C = suction curettage
WBRT = whole brain radio therapy
ICE = Ifosfamide+ Cisplatin+ Etoposide
CT = Chemotherapy

TABLE 38 : Molar Pregnancy in 2014

No	HN	Age	Gravida	GA (wk)	UT Size (wk)	HCG titer	Risk	Treatment	Pathology	Result
1	3581742	31	G1 P 0	10	14-16	185,237	high risk	Suction & curettage	Complete hydatidiform mole	Remission
2	3568328	23	G2 P 1-0-0-1	16	12	270,000	high risk	Suction & curettage	Complete hydatidiform mole	Refer to FU nearby hospital
3	3596512	27	G1 P0	9	12	285,412	high risk	Suction & curettage	Complete hydatidiform mole	Remission

FU = Follow up
UT = Uterine
GA = Gestational age

SECTION II

- **Medical Personnel and Facilities**
- **Diagnostic Procedures and Gynecologic Oncology Operations**
- **Publications & Presentations**

Medical Personnel and Facilities

TABLE 39 : Medical Personnel and Facilities in Division of Gynecologic Oncology, Chiang Mai University

Personnel and Facilities	Number
Medical doctor	8
General nurse	25
Practical nurse	18
Helper	11
Research nurse	2
Research assistant	1
Inpatient bed	50
One day chemo bed	19
Outpatient bed	7
Colposcope	3
Cryosurgery set	1
Radiosurgery (Surgitron)	3

Funds (**กองทุนของหน่วยมะเร็งวิทยานรีเวช**)

1. Gynecologic Cancer Fund (กองทุนมะเร็งทางนรีเวช)
2. Cervical Cancer Surgery Fund (กองทุนผ่าตัดมะเร็งปากมดลูก)

1st Year Fellow

- Kuanoon Buapaijitr
- Tanyalak Wongluecha

2nd Year Fellow

- Rathasart Mahathep, M.D.
- Kamonnut Prapunwatana, M.D.
- Apiwat Aueaungkul, M.D.

Radiation Oncologists

1. Associate Professor Imjai Chitapanarux, M.D.
2. Ekkasit Tharavijitkul, M.D.
3. Somwilai Mayurasakorn, M.D.

Gynecologic Pathologists

1. Associate Professor Sumalee Siriaunkgul, M.D.
2. Associate Professor Surapan Khunamornpong, M.D.
3. Associate Professor Jongkolnee Settakorn, M.D.
4. Assistant Professor Kornkanok Sukapan, M.D.

Medical Oncologists

1. Assistant Professor Chaiyut Charoentum, M.D.
2. Assistant Professor Busyamas Chewaskulyong, M.D.

Diagnostic Procedures and Operations

TABLE 40 : Diagnostic Procedures and Operations for Cervical Neoplasia

Procedures & Operations	Number
Colposcopy	659
LEEP	144
TLH	1
Simple Hysterectomy	23
Subtotal hysterectomy & PL	2
Extrafascia Hysterectomy	1
Modified Hysterectomy &PL	10
Abandoned Radical Hysterectomy & PL	2
Radical Hysterectomy & PL	56
Radical parametrectomy & PL	2
Explor lap to BSO	1
Laparoscopic Radical Hysterectomy & PL	3
Laparoscopic to Lymph node biopsy	1
Laparoscopic assisted vaginal RHPL	1
Laparoscopic cystectomy	1
Laparoscopic Radical Trachelectomy & PL	3
Robotic Radical Hysterectomy & PL	1

CKC = Cold knife Conization
LEEP = Loop Electrosurgical Excision Procedure
TLH = Total Laparoscopic Hysterectomy
PL = Pelvic Lymphadenectomy

TABLE 41 : Operations for Ovarian, Corpus and Vulvar Cancer.

Operations	Number
CRS for Ovarian Cancer	86
CRS for Fallopian Tube Cancer	6
CRS for Peritoneal Cancer	6
Surgical Staging for Corpus Cancer	89
Hemi Vulvectomy & BGND for Vulvar Cancer	1
Wide Local Excision & BGND for Vulvar Cancer	5
Radical Vulvectomy & BGND for Vulvar Cancer	6
Radical Hemivulvectomy & BGND for Vulvar Cancer	5
Radical Local Excision & BGND for Vulvar Cancer	3
Vulva biopsy	3
BGND	6

CRS = Cytoreductive Surgery
BGND = Bilateral Groin Node Dissection

PUBLICATIONS & PRESENTATIONS

2014

Performance of HPV DNA Testing with Hybrid Capture 2 in Triaging Women with Minor Cervical Cytologic Abnormalities (ASC-US/LSIL) in Northern Thailand.

Khunamornpong S[1], Settakorn J, Sukpan K, Srisomboon J, Suprasert P, Siriaunkgul S.

BACKGROUND: Minor cervical cytologic abnormalities include atypical squamous cells of undetermined significance (ASC-US) and low-grade squamous intraepithelial lesion (LSIL). Approximately 10-20% of women with minor cytologic abnormalities have histologic high-grade squamous intraepithelial or worse lesions (HSIL+). In Thailand, women with minor cytologic abnormalities have a relatively high risk of cervical cancer, and referral for colposcopy has been suggested. A triage test is useful in the selection of women at risk for histologic HSIL+ to reduce the colposcopy burden. The aim of this study was to assess the performance of high-risk HPV DNA test in triage of women with minor cytologic abnormalities in northern Thailand.

MATERIALS AND METHODS: All women with ASC-US/LSIL cytology who were referred to our colposcopy clinic from October 2010 to February 2014 were included. HPV DNA testing was performed using Hybrid Capture 2 (HC2). All patients received colposcopic examination. Accuracy values of HC2 in predicting the presence of histologic HSIL+ were calculated.

RESULTS: There were 238 women in this study (121 ASC-US and 117 LSIL). The HC2 positivity rate was significantly higher in the LSIL group than in ASC-US group (74.8% versus 41.0%, $p<0.001$). Histologic HSIL+ was detected in 9 women (7.4%) in the ASC-US group and 16 women (13.7%) in the LSIL group ($p=0.141$). There was no histologic HSIL+ detected among HC2-negative cases (sensitivity and negative predictive value of 100%). The performance of HC2 triage was highest among women aged >50 years with ASC-US cytology. An increase in the cut-off threshold for positive HC2 resulted in a substantial decrease of sensitivity and negative predictive value.

CONCLUSIONS: HPV DNA testing with HC2 shows very high sensitivity and negative predictive value in triage of women with minor cervical cytologic abnormalities in northern Thailand. An increase of the cut-off threshold for HC2 triage is not recommended in this region.

Published in: Asian Pac J Cancer Prev. 2014;15(24):10961-6.

Population-based cervical cancer screening using high-risk HPV DNA test and liquid-based cytology in northern Thailand.

Siriaunkgul S1, Settakorn J, Sukpan K, Srisomboon J, Suprasert P, Kasatpibal N, Khunamornpong S.

BACKGROUND: Northern Thailand is a region with a high cervical cancer incidence. Combined high-risk HPV (hrHPV) DNA testing and cytology (co-testing) has increasingly gained acceptance for cervical cancer screening. However, to our knowledge, data from a population-based screening using co-testing have not been available in this region. This study therefore aimed to evaluate the performance of cytology and hrHPV test in women in northern Thailand.

MATERIALS AND METHODS: Cervical samples were collected for hybrid capture 2 (HC2) testing and liquid-based cytology from women aged 30 to 60 years who were residents in 3 prefectures of Chiang Mai in northern Thailand between May and September 2011. Women with positive cytology were referred to colposcopy, while women with positive for HC2 only were followed for 2 years.

RESULTS: Of 2,752 women included in this study, 3.0% were positive in both tests, 4.1% for HC2 only, and 1.3% had positive cytology only. At baseline screening, positive HC2 was observed in 70.6% among cytology-positive women compared with 4.3% among cytology-negative women. The prevalence of positive HC2 or cytology peaked in the age group 35-39 years and was lowest in the age group 55-60 years. High-grade squamous intraepithelial lesion or worse lesions (HSIL+) were histologically detected in 23.5% of women with positive baseline cytology and in 9.8% of women with positive baseline HC2 only on follow-up. All women with histologic HSIL+ had positive baseline HC2.

CONCLUSIONS: The hrHPV test is superior to cytology in the early detection of high-grade cervical epithelial lesions. In this study, the prevalence of histologic HSIL+ on follow-up of women with positive hrHPV test was rather high, and these women should be kept under careful surveillance. In northern Thailand, hrHPV testing has a potential to be used as a primary screening test for cervical cancer with cytology applied as a triage test.

Published in: Asian Pac J Cancer Prev. 2014;15(16):6837-42

Histopathological outcomes of women with abnormal cervical cytology: a review of literature in Thailand.

Kietpeerakool C1, Tangjitgamol S, Srisomboon J.

Cervical cytology remains the principal screening method to detect pre-invasive and invasive cervical lesions. Management of abnormal cervical cytology depends on the risk of encountering a significant cervical lesion or high-grade cervical disease. These risks may vary in different areas across the country. Thus, determining the rate of significant cervical lesion associated with each type of abnormal cervical cytology in each area is of critical importance for designing area-specific management approach. This review was conducted to evaluate the rate of high-grade cervical disease among Thai women with abnormal cervical cytology. A relatively high incidence of underlying significant lesions including invasive disease was demonstrated even in those having only minimal smear abnormality. This baseline information is crucial and must be taken into consideration in management of women with abnormal cytological screening to achieve the goals of comprehensive cervical cancer control in Thailand.

Published in: Asian Pac J Cancer Prev. 2014;15(16):6489-94

HPV detection and genotyping in vulvar squamous cell carcinoma in northern Thailand.

Siriaunkgul S1, Settakorn J, Sukpan K, Srisomboon J, Utaipat U, Lekawanvijit S, Khunamornpong S.

BACKGROUND: The study was aimed to evaluate the prevalence and genotype distribution of HPV infection in vulvar squamous cell carcinoma (SCC) in northern Thailand and the clinicopathological difference with regard to HPV infection status.

MATERIALS AND METHODS: Formalin-fixed paraffin-embedded tissue samples of vulvar SCC diagnosed between January 2006 and December 2012 were collected. HPV infection was detected by nested polymerase chain reaction (PCR) with primers MY09/11 and GP5+/6+. HPV genotyping was performed using the Linear Array Genotyping Test, followed by type-specific PCR targeting the E6/E7 region of HPV16/18/52 if the Linear Array test was negative. The histologic slides of vulvar lesions and the medical records were reviewed.

RESULTS: There were 47 cases of vulvar SCC included in the study (mean patient age 57.9 ± 13.2 years). HPV infection was detected in 29 cases (62%), all of which had single HPV infections. HPV16 accounted for 23 (49%). The patients with HPV-positive SCC had a significantly younger mean age than those with HPV-negative tumors (52.7 years vs 66.2 years, $p<0.001$). There was no significant difference in tumor stage distribution with regard to the status of HPV infection. The presence of vulvar intraepithelial neoplasia (VIN) of usual type (basaloid or warty) was significantly more frequent in HPV-positive cases compared with HPV-negative cases (62% vs 6%, $p<0.001$), whereas differentiated-type VIN was more common in HPV-negative cases (24% vs 0%, $p=0.019$).

CONCLUSIONS: HPV infection was detected in 62% of vulvar SCC in northern Thailand. HPV16 was the predominant genotype similar to the data reported from other regions. HPV-positive SCC occurred in younger patients compared with HPV-negative SCC, and was associated with usual-type VIN. Vaccination against HPV16/18 may potentially prevent almost one half of vulvar SCC in northern Thailand.

Published in: Asian Pac J Cancer Prev. 2014;15(8):3773-8

Survival and prognostic factors of patients with primary fallopian tube cancer receiving adjuvant paclitaxel and carboplatin chemotherapy.

Kietpeerakool C, Srisomboon J, Phongsaranantakul S, Khunamornpong S, Cheewakriangkrai C, Sribanditmongkol N.

AIM: To determine the survival and prognostic factors of patients with primary fallopian tube cancer (PFTC) who had been treated with paclitaxel and carboplatin chemotherapy.

METHODS: The records of patients with PFTC who had been treated between 2002 and 2010, identified through the report of Chiang Mai University Hospital, were reviewed. All patients had pathological materials initially reported or reviewed by a gynecologic pathologist before initiation of treatment.

RESULTS: Thirty patients met the inclusion criteria. Median age was 51 years. Serous adenocarcinoma was observed in the majority of patients (76.7%). Approximately 46% of patients were in stage I–II. The 5-year progression-free survival (PFS) for all patients was 37.2%. The 5-year PFS was 75.0% for stage I, 51.4% for stage II and 18.5% for stage III. Median PFS of the entire cohort was 26.0 months with a 95% confidence interval (CI) of 18.7–33.3 months. This rate was 18.5 months (95% CI, 6.7–35.6) for stage III whereas it was not reached for patients of stage I–II. Serous histology and stage were noted to be significant independent predictors of PFS with an adjusted hazards ratio of 7.54 (95% CI, 1.34–42.4) and 6.19 (95% CI, 1.59–24.08), respectively.

CONCLUSION: The 5-year PFS of the whole cohort was 37.2% with a median survival of 26 months. International Federation of Gynecology and Obstetrics stage and histological subtype were a significant independent factor for predicting PFS.

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Predicting factors for positive vaginal surgical margin following radical hysterectomy for stage IB1 carcinoma of the cervix.

Sethasathien S1, Charoenkwan K, Settakorn J, Srisomboon J.

BACKGROUND: To examine the incidence of positive vaginal surgical margins and determine the predicting factors following radical hysterectomy for stage IB1 carcinoma of the cervix.

MATERIALS AND METHODS: The clinical and histological data of 656 FIGO stage IB1 cervical cancer patients who had radical hysterectomy with bilateral pelvic lymphadenectomy (RHPL) from January 2003 to December 2012 were retrospectively reviewed and were analyzed for their association with a positive vaginal surgical margin. A p-value of < 0.05 was considered significant.

RESULTS: Thirty-five patients (5.3%) had positive vaginal surgical margins following RHPL; 24 (3.7%) for intraepithelial lesions and 11 (1.7%) for carcinoma. On multivariate analysis, microscopic vaginal involvement by high-grade squamous intraepithelial lesion and/or carcinoma (adjusted odd ratio (OR) 186.8; 95% confidence interval (CI) 48.5-718.5) and squamous histology (OR 8.7; 95% CI 1.7-44.0), were significantly associated with positive vaginal surgical margin.

CONCLUSIONS: Microscopic vaginal involvement by HSIL and/ or carcinoma are strong predictors for positive vaginal surgical margins for stage IB1 cervical cancer patients undergoing radical hysterectomy. Preoperative 'mapping' colposcopy or other strategies should be considered to ensure optimal vaginal resection.

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Locoregional spread and survival of stage IIA1 versus stage IIA2 cervical cancer.

Hongladaromp W1, Tantipalakorn C, Charoenkwan K, Srisomboon J.

This study was undertaken to compare surgical outcomes and survival rates of patients with the 2009 International Federation of Gynecology and Obstetrics (FIGO) stage IIA1 versus IIA2 cervical cancer treated with radical hysterectomy and pelvic lymphadenectomy (RHPL). Patients with stage IIA cervical cancer undergoing primary RHPL between January 2003 and December 2012 at Chiang Mai University Hospital were retrospectively reviewed. The analysis included clinicopathologic variables, i.e. nodal metastasis, parametrial involvement, positive surgical margins, deep stromal invasion (DSI)), lymph-vascular space invasion (LVSI), adjuvant treatment, and 5-year survival. The chi square test, Kaplan-Meier method and log-rank test were used for statistical analysis. During the study period, 133 women with stage IIA cervical cancer, 101 (75.9 %) stage IIA1, and 32 (24.1 %) stage IIA2 underwent RHPL. The clinicopathologic variables of stage IIA1 compared with stage IIA2 were as follows: nodal metastasis (38.6% vs 40.6%, p=0.84), parametrial involvement (10.9% vs 15.6%, p=0.47), positive surgical margins (31.7% vs 31.3%, p=1.0), DSI (39.6% vs 53.1%, p=0.18), LVSI (52.5% vs 71.9%, p=0.05) and adjuvant radiation (72.3% vs 84.4%, p=0.33). With a median follow-up of 60 months, the 5-year disease-free survival (84.6% vs 88.7%, p=0.67) and the 5-year overall survival (83.4% vs 90.0%, P=0.49) did not significantly differ between stage IIA1 and stage IIA2 cervical cancer. In conclusion, patients with stage IIA1 and stage IIA2 cervical cancer have comparable rates of locoregional spread and survival. The need for receiving adjuvant radiation was very high in both substages. The revised 2009 FIGO system did not demonstrate significant survival differences in stage IIA cervical cancer treated with radical hysterectomy. Concurrent chemoradiation should be considered a more suitable treatment for patients with stage IIA cervical cancer.

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Survival outcomes of recurrent epithelial ovarian cancer: experience from a Thailand northern tertiary care center.

Jansaka N[1], Suprasert P.

To assess survival outcomes in a retrospective study, recurrent epithelial ovarian cancer patients were divided into three groups according to the platinum free interval as follows: platinum refractory that included the patients with tumor progression during treatment; platinum resistant and platinum sensitive that included the patients with tumor progression less than or more than six months, respectively. Clinical data for tumor progression in epithelial ovarian cancer patients treated at Chiang Mai University Hospital between January, 2006 and December, 2010 were reviewed. Thirty-nine patients were in the platinum refractory group while 27 were in the platinum resistant group and 75 in the platinum sensitive group. The mean age, the parity, the administration of neoadjuvant chemotherapy and the serous type did not significantly different across groups while the mean total number of chemotherapy regimens, the early stage patients, the patients with complete surgery and the surviving patients were significant more frequent in the platinum sensitive group. Regarding subsequent treatment after tumor recurrence, 87.2% underwent chemotherapy. With the median follow up time at 29 months, the median overall survival rates were 20 months, 14 months and 42 months in platinum refractory, platinum resistant and platinum sensitive groups, respectively ($p<0.001$). In addition, when the platinum sensitive patients developed the next episode of tumor progression, the median progression free interval time was only three to four months. In conclusion, the outcomes for platinum refractory and the platinum resistant groups was poorer than the platinum sensitive group. However, subsequent progression in the platinum sensitive group was also associated with a poor outcome.

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Outcomes of malignant ovarian germ-cell tumors treated in Chiang Mai University Hospital over a nine year period.

Neeyalavira V1, Suprasert P.

Malignant ovarian germ cell tumors (MOGCT) are rare neoplasms that most frequently occur in women at a young reproductive age. There have been limited data regarding this disease from Southeast Asian countries. We therefore conducted a retrospective study to analyze the clinical characteristics and the treatment outcomes of MOGCT treated at our institute between January, 2003 and December, 2012. Seventy-six patients were recruited from this period with the mean age of 21.6 years and 11.8% were pre-puberty. The two most common symptoms were pelvic mass and pelvic pain. Two-thirds of the studied patients presented at an early stage. The most common histology was immature teratoma (34.2%) followed by endodermal sinus tumor (28.9%), dysgerminoma (25%), mixed type (10.5%) and choriocarcinoma (1.3%). Over 80% of these patients received fertility sparing surgery and about 70% received adjuvant chemotherapy with the complete response rate at 73.3% and partial response at 11.1%. The most frequent chemotherapy was BEP regimen (bleomycin, etoposide, cisplatin). With the mean follow up time at 56.0 months, 12 patients (15.8%) developed recurrence and only an advanced stage was the independent prognostic factor. The ten year progression free survival (PFS) and overall survival rate of our study were 81.9% and 86.2%, respectively. In conclusion, MOGCT often occurs at a young age. Treatment with fertility sparing operations and adjuvant chemotherapy with a BEP regimen showed a good outcome. An advanced stage is a significant prognostic factor for recurrence.

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Clinical characteristics of gynecologic cancer patients who respond to salvage treatment with Lingzhi.

Suprasert P1, Apichartpiyakul C, Sakonwasun C, Nitisuwanraksa P, Phuackchantuck R.

Lingzhi or Ganoderma lucidum is a popular medicinal mushroom used as a health promotion herb in China and other Asian countries for thousands of years. There have many previous studies about the anti-cancer effects of lingzhi especially in vitro. The present study reports the clinical data of 5 gynecologic cancer patients who achieved stability in the disease after ingestion of lingzhi in the form of fruit body water extract and spores in a salvage setting. This report has been written to enhance the data describing the effect of lingzhi in cancer patients.

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Outcomes with single agent LIPO-DOX in platinum-resistant ovarian and fallopian tube cancers and primary peritoneal adenocarcinoma - Chiang Mai University Hospital experience.

Suprasert P[1], Manopunya M, Cheewakriangkrai C.

Single pegylated liposomal doxorubicin (PLD) is commonly used as a salvage treatment in platinum-resistant ovarian cancer, fallopian tube cancer and primary peritoneal adenocarcinoma (PPA) with a satisfactory outcome. However, the data for second generation PLD administered in this setting are still limited. We conducted a retrospective study to evaluate the outcome of patients who received single-agent second generation PLD (LIPO-DOX) after the development of clinical platinum resistance. The study period was between March 2008 and March 2013. LIPO-DOX was administered intravenously 40 mg/m2 every 28 days until disease progression, but for not more than six cycles. The response rate was evaluated using the Gynecologic Cancer Intergroup (GCIG) criteria while the toxicity was evaluated according to WHO criteria. Twenty-nine patients met the inclusion criteria in the study period with an overall response rate of 13.8%. The median progression free survival and overall survival were three and eleven months, respectively. With the total of 96 cycles of chemotherapy, the patients developed grades 3 and 4 hematologic toxicity as follows: anemia, 0%, leukopenia, 9.6%, neutropenia, 32.3% and thrombocytopenia, 0%. In conclusion, the single agent second generation PLD demonstrated modest efficacy in patients with platinum-resistant ovarian cancer, fallopian tube cancer and PPA without serious toxicity.

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Primary ovarian mucinous adenocarcinoma of intestinal type: a clinicopathologic study of 46 cases.

Khunamornpong S[1], Settakorn J, Sukpan K, Suprasert P, Siriaunkgul S.

This study was aimed to evaluate the clinicopathologic details of primary ovarian mucinous adenocarcinoma and their prognostic significance. The clinicopathologic characteristics of 46 cases of mucinous adenocarcinoma were reviewed. The diagnosis of mucinous adenocarcinoma required the presence of stromal invasion of either the expansile (confluent glandular) pattern or the infiltrative pattern in an area size >10 mm(2). The cases were stratified using different grading methods and different cutoff limits of stromal invasion. Regarding the invasive pattern, 20 cases had the infiltrative pattern only, 8 had both infiltrative and expansile patterns, 7 had the expansile pattern only, and 11 had the expansile pattern with infiltrative microinvasion (area ≤10 mm(2)). The patients with tumors containing the expansile pattern had a younger mean age compared with those with the infiltrative pattern only (42.3 vs. 53.7 yr; P=0.004). On follow-up, 12 patients had tumor recurrence, 9 of whom died of disease. Tumor recurrence was associated with stage ≥II (P<0.001) and infiltrative area >10 mm(2) (P=0.015). Decreased progression-free survival and cancer-specific survival was strongly associated with tumor stage ≥II (P<0.001 for each survival) and infiltrative area >50 mm(2) (P=0.003 and 0.010, respectively). Among 27 stage IA patients, the infiltrative extent (area >50 mm or dimension >20 mm) was the only variable that was significantly associated with recurrence and decreased survival. Tumor grading was not significantly associated with the recurrence risk or the survival. The extent of infiltrative invasion in ovarian mucinous adenocarcinoma may provide additional prognostic value to the tumor stage and the pattern of stromal invasion.

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Early versus delayed oral fluids and food for reducing complications after major abdominal gynaecologic surgery.

Charoenkwan K[1], Matovinovic E.

BACKGROUND: This is an updated version of the original Cochrane review published in 2007. Traditionally, after major abdominal gynaecologic surgery postoperative oral intake is withheld until the return of bowel function. There has been concern that early oral intake would result in vomiting and severe paralytic ileus with subsequent aspiration pneumonia, wound dehiscence, and anastomotic leakage. However, evidence-based clinical studies suggest that there may be benefits from early postoperative oral intake.

OBJECTIVES: To assess the effects of early versus delayed (traditional) initiation of oral intake of food and fluids after major abdominal gynaecologic surgery.

SEARCH METHODS: We searched the Menstrual Disorders and Subfertility Group's Specialised Register, the Cochrane Central Register of Controlled Trials (CENTRAL), electronic databases (MEDLINE, EMBASE, CINAHL), and the citation lists of relevant publications. The most recent search was conducted 1 April 2014. We also searched a registry for ongoing trials (www.clinicaltrials.gov) on 13 May 2014.

SELECTION CRITERIA: Randomised controlled trials (RCTs) were eligible that compared the effect of early versus delayed initiation of oral intake of food and fluids after major abdominal gynaecologic surgery. Early feeding was defined as oral intake of fluids or food within 24 hours post-surgery regardless of the return of bowel function. Delayed feeding was defined as oral intake after 24 hours post-surgery and only after signs of postoperative ileus resolution.

DATA COLLECTION AND ANALYSIS: Two review authors selected studies, assessed study quality and extracted the data. For dichotomous data, we calculated the risk ratio (RR) with a 95% confidence interval (CI). We examined continuous data using the mean difference (MD) and a 95% CI. We tested for heterogeneity between the results of different studies using a forest plot of the meta-analysis, the statistical tests of homogeneity of 2 x 2 tables and the I^2 value. We assessed the quality of the evidence using GRADE methods.

MAIN RESULTS: Rates of developing postoperative ileus were comparable between study groups (RR 0.47, 95% CI 0.17 to 1.29, P = 0.14, 3 RCTs, 279 women, I^2 = 0%, moderate-quality evidence). When we considered the rates of nausea or vomiting or both, there was no evidence of a difference between the study groups (RR 1.03, 95% CI 0.64 to 1.67, P = 0.90, 4 RCTs, 484 women, I^2 = 73%, moderate-quality evidence). There was no evidence of a difference between the study groups in abdominal distension (RR 1.07, 95% CI 0.77 to 1.47, 2 RCTs, 301 women, I^2 = 0%) or a need for postoperative nasogastric tube

placement (RR 0.48, 95% CI 0.13 to 1.80, 1 RCT, 195 women).Early feeding was associated with shorter time to the presence of bowel sound (MD -0.32 days, 95% CI -0.61 to -0.03, P = 0.03, 2 RCTs, 338 women, I^2 = 52%, moderate-quality evidence) and faster onset of flatus (MD -0.21 days, 95% CI -0.40 to -0.01, P = 0.04, 3 RCTs, 444 women, I^2 = 23%, moderate-quality evidence). In addition, women in the early feeding group resumed a solid diet sooner (MD -1.47 days, 95% CI -2.26 to -0.68, P = 0.0003, 2 RCTs, 301 women, I^2 = 92%, moderate-quality evidence). There was no evidence of a difference in time to the first passage of stool between the two study groups (MD -0.25 days, 95% CI -0.58 to 0.09, P = 0.15, 2 RCTs, 249 women, I^2 = 0%, moderate-quality evidence). Hospital stay was shorter in the early feeding group (MD -0.92 days, 95% CI -1.53 to -0.31, P = 0.003, 4 RCTs, 484 women, I^2 = 68%, moderate-quality evidence). Infectious complications were less common in the early feeding group (RR 0.20, 95% CI 0.05 to 0.73, P = 0.02, 2 RCTs, 183 women, I^2 = 0%, high-quality evidence). In one study, the satisfaction score was significantly higher in the early feeding group (MD 11.10, 95% CI 6.68 to 15.52, P < 0.00001, 143 women, moderate-quality evidence).

AUTHORS' CONCLUSIONS: Early postoperative feeding after major abdominal gynaecologic surgery for either benign or malignant conditions appeared to be safe without increased gastrointestinal morbidities or other postoperative complications. The benefits of this approach include faster recovery of bowel function, lower rates of infectious complications, shorter hospital stay, and higher satisfaction.

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Retroperitoneal drainage versus no drainage after pelvic lymphadenectomy for the prevention of lymphocyst formation in patients with gynaecological malignancies.

Charoenkwan K[1], Kietpeerakool C.

BACKGROUND:

This is an updated version of the original Cochrane review published in Issue 1, 2010. Pelvic lymphadenectomy is associated with significant complications including lymphocyst formation and related morbidities. Retroperitoneal drainage using suction drains has been recommended as a method to prevent such complications. However, this policy has been challenged by the findings from recent studies.

OBJECTIVES: To assess the effects of retroperitoneal drainage versus no drainage after pelvic lymphadenectomy on lymphocyst formation and related morbidities in gynaecological cancer patients.

SEARCH METHODS: We searched the Cochrane Gynaecological Cancer Specialised Register, the Cochrane Central Register of Controlled Trials (CENTRAL 2013, Issue 12) in The Cochrane Library, electronic databases MEDLINE (Nov Week 3, 2013), EMBASE (2014, week 1), and the citation lists of relevant publications. The latest searches were performed on 10 January 2014.

SELECTION CRITERIA: Randomised controlled trials (RCTs) that compared the effect of retroperitoneal drainage versus no drainage after pelvic lymphadenectomy in gynaecological cancer patients. Retroperitoneal drainage was defined as placement of passive or active suction drains in pelvic retroperitoneal spaces. No drainage was defined as no placement of passive or active suction drains in pelvic retroperitoneal spaces.

DATA COLLECTION AND ANALYSIS: We assessed studies using methodological quality criteria. For dichotomous data, we calculated risk ratios (RRs) and 95% confidence intervals (CIs). We examined continuous data using mean difference (MD) and 95% CI.

MAIN RESULTS: Since the last version of this review, no new studies have been identified for inclusion. The review included four studies with 571 participants. Considering the short-term outcomes (within four weeks after surgery), retroperitoneal drainage was associated with a comparable rate of overall lymphocyst formation when all methods of pelvic peritoneum management were considered together (two studies, 204 patients; RR 0.76, 95% CI 0.04 to 13.35). When the pelvic peritoneum was left open, the rates of overall lymphocyst formation (one study, 110 patients; RR 2.29, 95% CI 1.38 to 3.79) and symptomatic lymphocyst formation (one study, 137 patients; RR 3.25, 95% CI 1.26 to 8.37) were higher in the drained group. At 12 months after surgery, the rates of overall lymphocyst formation were comparable between the groups (one

study, 232 patients; RR 1.48, 95% CI 0.89 to 2.45). However, there was a trend toward increased risk of symptomatic lymphocyst formation in the group with drains (one study, 232 patients; RR 7.12, 95% CI 0.89 to 56.97). The included trials were of low to moderate risk of bias.

AUTHORS' CONCLUSIONS: Placement of retroperitoneal tube drains has no benefit in prevention of lymphocyst formation after pelvic lymphadenectomy in patients with gynaecological malignancies. When the pelvic peritoneum is left open, the tube drain placement is associated with a higher risk of short and long-term symptomatic lymphocyst formation.

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Accuracy of intraoperative gross examination of myometrial invasion in stage I-II endometrial cancer.

Sethasathien P[1], Charoenkwan K, Siriaunkgul S.

BACKGROUND: To assess the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), and accuracy of intraoperative gross examination (IGE) of uterine specimens in determining deep myometrial invasion and cervical invasion compared to final histology.

MATERIALS AND METHODS: The clinical, surgical and histological data of all FIGO stage I-II endometrial cancer (EC) patients who had primary surgery were reviewed. RESULTS of the IGE for myometrial invasion and cervical invasion were compared to the final histology. The sensitivity, specificity, PPV, NPV, and accuracy of the IGE in determining deep myometrial invasion and cervical invasion were calculated. Association between clinico-pathological factors and discrepancy between IGE and final histology in the determination of myometrial invasion was also assessed. A p-value of <0.05 was considered significant.

RESULTS: From January 2007 to December 2012, 179 patients diagnosed with clinical stage I-II endometrial cancer underwent surgical staging. The sensitivity and specificity of IGE in detecting deep myometrial invasion were 42.4% and 90.0%, respectively, and the PPV and NPV were 67.6% and 76.1%. The overall accuracy of IGE was 74.3%. The sensitivity and specificity of IGE in identifying cervical invasion were 28.6% and 97.5%, respectively, while the PPV and NPV were 60.0% and 91.1%. The overall accuracy of IGE was 89.4%.

CONCLUSIONS: The sensitivity of IGE for detecting deep myometrial invasion and cervical invasion in early-stage EC is too low to be used alone. Alternative methods including intraoperative frozen section analysis, preoperative three dimensional ultrasound, and preoperative magnetic resonance imaging should be strongly considered.

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Effective use of the Bakri postpartum balloon for posthysterectomy pelvic floor hemorrhage.

Charoenkwan K[1].

After hysterectomy, massive pelvic floor hemorrhage sometimes occurs, especially in those who underwent complicated procedures. Conventional methods frequently fail to control this type of life-threatening bleeding. This report demonstrates the successful application of the large-volume Bakri balloon as a pelvic pressure pack for the control of intractable pelvic floor hemorrhage after hysterectomy in 3 consecutive cases. The Bakri balloon was introduced through the laparotomy incision and was passed inflation port first through a small posterior culdotomy to the vagina. The shaft of the balloon then was pulled through the vaginal canal. When proper tamponade position was achieved, the balloon was inflated gradually with sterile normal saline solution up to the minimal volume that effectively compressed against the pelvic floor and successfully controlled the hemorrhage. Continuous traction was used by the connection of the balloon shaft to a 1-L intravenous fluid bag that was hanging from the end of the bed. In all cases, the bleeding was controlled promptly when the balloons were filled up to 400-550 mL. The balloons were removed at bedside 24-30 hours after the operation. On follow-up examination, all patients recovered well without complication. From the author's experience, pelvic pressure packing with the Bakri balloon can be an immediate lifesaver. It is safe and readily applicable and provides a period of temporary hemostasis during which time volume replacement and coagulation defect correction can be obtained. The balloon pack can be removed vaginally without the need for reexploration. It is easy and fast to assemble, apply, and remove. In addition, the size of the balloon pack is adjustable easily to match the size of hemorrhagic areas by merely inflating or deflating the balloon. Furthermore, it is convenient to monitor continuing intraabdominal blood loss through the balloon's drainage port without the need for an additional drain. Further exploration on its use would be worthwhile.

KEYWORDS: Bakri balloon; hysterectomy; pelvic floor hemorrhage; pelvic packing; umbrella pack

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IOTA simple rules in differentiating between benign and malignant ovarian tumors.

Tantipalakorn C[1], Wanapirak C, Khunamornpong S, Sukpan K, Tongsong T.

BACKGROUND: To evaluate the diagnostic performance of IOTA simple rules in differentiating between benign and malignant ovarian tumors.

MATERIALS AND METHODS: A study of diagnostic performance was conducted on women scheduled for elective surgery due to ovarian masses between March 2007 and March 2012. All patients underwent ultrasound examination for IOTA simple rules within 24 hours of surgery. All examinations were performed by the authors, who had no any clinical information of the patients, to differentiate between benign and malignant adnexal masses using IOTA simple rules. Gold standard diagnosis was based on pathological or operative findings.

RESULTS: A total of 398 adnexal masses, in 376 women, were available for analysis. Of them, the IOTA simple rules could be applied in 319 (80.1%) including 212 (66.5%) benign tumors and 107 (33.6%) malignant tumors. The simple rules yielded inconclusive results in 79 (19.9%) masses. In the 319 masses for which the IOTA simple rules could be applied, sensitivity was 82.9% and specificity 95.3%.

CONCLUSIONS: The IOTA simple rules have high diagnostic performance in differentiating between benign and malignant adnexal masses. Nevertheless, inconclusive results are relatively common.

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A case of ovarian paragonimiasis mimicking ovarian carcinoma.

Tantipalakorn C1, Khunamornpong S, Tongsong T.

BACKGROUND: The purpose of this report is to describe ovarian paragonimiasis, a rare form of lung fluke infestation, mimicking ovarian cancer.

CASE: A 47-year-old Thai woman presented with a pelvic mass. Imaging suggested ovarian cancer with pulmonary and hepatic metastases. She was scheduled for complete surgical staging. However, a frozen section revealed Paragonimus eggs in the enlarged ovarian mass. A total abdominal hysterectomy with bilateral salpingo-oophorectomy was performed instead of complete staging. All other lesions were also proven later to be Paragonimus infestation. Postoperative treatment with antiparasitic drugs resulted in dramatic improvement, with nearly complete resolution of all lesions at 4 months of follow-up.

CONCLUSION: This is an unusual case of ovarian paragonimiasis mimicking ovarian cancer, which is instructive and informative for differential diagnoses of pelvic masses.

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