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**Uterine intracavitary lesions and hysteroscopy- Sonographic evaluation of
endometrial and uterine-related diseases**

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This lecture summarizes the salient literature on the diagnosis and management of endometrial disease including endometrial polyps, endometrial hyperplasia and endometrial cancer. There is a paucity of level I evidence in the literature on the diagnosis and management of this common gynecologic disease. Noninvasive investigations such as transvaginal ultrasonography, with or without the use of 3-dimensional ultrasonography and contrast techniques remain the mainstay of first-line investigation. Another type endometrial-related disease is endometriosis and adenomyosis. Endometriosis affects between 5 and 45% of women in reproductive age, is associated with significant morbidity, and constitutes a major public health concern. The correct diagnosis is fundamental in defining the best treatment strategy for endometriosis. Therefore, non-invasive methods are required to obtain accurate diagnoses of the location and extent of endometriotic lesions. Transvaginal sonography and magnetic resonance imaging are used most frequently to identify and characterize lesions in endometriosis. Subjective impression by an experienced sonologist for identifying endometriomas by ultrasound showed a high accuracy. A detailed non-invasive diagnosis of the extension in the pelvis of endometriosis and adenomyosis can facilitate the choice of a safe and adequate surgical or medical treatment.

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Office hysteroscopy: Should we perform D&C for AUB?

The hysteroscope is an optical instrument connected to a video unit with a fiber optic light source, and to the channels for delivery and removal of a distention medium. The uterine cavity is a potential cavity and needs to be distended to allow for inspection. Thus during hysteroscopy D10 fluids is introduced to expand the cavity.

A hysteroscope is in fact a modification of the traditional resectoscope, which is used for transurethral resection of the prostate. It has a double-channeled sheath allowing for continuous flow of fluid or gas media into the uterus through the larger channel, while allowing for fewer outflows through the smaller channel. This results in the distention of the uterine cavity. With modern optical technologies, hysteroscopes are getting smaller in diameter yet able to provide larger and brighter images for surgeons' convenience.

After cervical dilation, the hysteroscope is guided into the uterine cavity and an inspection is performed. If abnormalities are found, an operative hysteroscope with a channel to allow specialized instruments to enter the cavity is used to perform the surgery. Typical procedures include endometrial ablation, submucosal fibroid resection, and endometrial polypectomy. Typically hysteroscopy intervention is done under general anesthesia or paracervical lidocain injection, but a short diagnostic procedure can be performed in a gynecologist's office without any anesthesia.

Office hysteroscopy, 2.7mm in diameter, is a minimally invasive intervention that can be used to diagnose many intrauterine and endocervical problems. Hysteroscopic polypectomy, myomectomy, and endometrial ablation are just a few of the commonly performed procedures after office hysteroscopy. Given their safety and efficacy, diagnostic and operative hysteroscopy have become standards in gynecologic practice.

Feasibility of hysteroscopy was evaluated in "Efficacy of office diagnostic hysteroscopy". The efficacy of the hysteroscopic diagnosis was evaluated by comparison with the histopathologic diagnosis after the TCR. The diagnostic accuracy of hysteroscopy was 74% in comparison with a traditional histopathologic examination.

Hysteroscopy is feasible for the investigation of the uterine cavity in an outpatient setting without anesthesia with acceptable reliability, although some confusion may occur when differentiating between endometrial polyps and submucosal myoma. Postprocedural complications were mostly attributed to vigorous dilation of the cervix.

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Recent trend in fertility-sparing treatment for endometrial cancer

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Endometrial carcinoma (EC) is the most common gynecologic cancer in developed countries. The incidence of EC appears to be rising globally, and the incidence of EC in Asian countries is also rapidly increasing. Although EC usually affects postmenopausal women, 28% of the women diagnosed with EC are premenopausal and 7.8% are younger than 40 years of age. The gold-standard treatment for patients with EC is total hysterectomy, bilateral salpingo-oophorectomy and para-aortic and pelvic lymphadenectomy. However, definitive surgical treatment may not be an acceptable option for young women who wish to remain fertile. Several successful pregnancies after conservative management have since been reported, however a decreased response and increased risk of disease persistence/recurrence with conservative treatment of EC have been reported to be more than complex atypical hyperplasia. Thus, women with EC opting for fertility-sparing treatment should be extensively screened and counseled regarding the risk of disease progression and response.

The selection of endometrial cancer patients for whom fertility-sparing progestin therapy is appropriate is of paramount importance to achieve the best outcomes. In almost all relevant studies on this issue, fertility-sparing progestin therapy has been recommended for patients with presumed early-stage, well-differentiated, endometrioid type endometrial adenocarcinoma with no evidence of myometrial invasion or extrauterine spread. According to the revised International Federation of Obstetrics and Gynecology staging system (2009), stage IA (confined to endometrium), grade 1 endometrioid adenocarcinoma cases are eligible for fertility-sparing progestin therapy. It is important that well-differentiated tumors are verified and documented by an experienced gynecologic pathologist. Well-differentiated tumors have a very low risk of myometrial invasion and extrauterine spread including lymph node, ovarian, or peritoneal metastasis.

Fertility-sparing progestin therapy is highly effective in selected young women with primary and recurrent endometrial cancer. The selection of appropriate patients through comprehensive pretreatment evaluations is of paramount importance to achieve the best outcomes without compromising survival outcomes. Because of the high rate of recurrence after successful fertility-sparing management, close surveillance is mandatory, and prophylactic hysterectomy is the best option after a successful pregnancy. Pregnancy outcomes are very promising in these cases with the aid of assisted reproductive technologies.

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Complications in operative hysteroscopy: prevention and management

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Operative hysteroscopy is the surgical treatment of benign uterine disorders. It is minimally invasive, cost- and time-effective, and may let patients spare major surgical interventions. Hysteroscopy is considered a relatively safe procedure. Operative hysteroscopic surgeries include adhesiolysis, metroplasty, and myomectomy. However, prevention of complications is important in daily practice to improve patient care quality.

Complications can divide into two categories, early and delayed postoperative complications. Early complications include bleeding, uterine perforation, infection, and fluid overload. Delayed postoperative complications include incomplete resection and intrauterine adhesions. Fluid management is important for intraoperative safety. Fluid management should be carefully monitored. If fluid overload or hyponatremia is suspected, stop the procedure and consult a critical care specialist are mandatory.

Using misoprostol preoperatively can decrease the risk of uterine perforation. Detail preoperative examination is essential for determining the surgical skill and expertise needed, surgical time, and the probability of completing the operative procedure. Overall, the complications of operative hysteroscopy are not frequent and easier to manage. Knowledge of management of complications, as well as the use of possible preventive methods, will increase the quality and safety of operative hysteroscopy. In this lecture, I will share the current knowledge and our experience of managing operative hysteroscopy complications.

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To Triage patients with uterine myoma who desire to conceive

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Myoma is the most common benign uterine tumor in women. It can be classified as subserosal, intramural and submucosal types, and has different symptoms to affect the daily life of reproductive-age women. The way to manage symptomatic myoma includes medical, less invasive and invasive (surgical) approaches. The goal of this talk is to compare the indication, contraindication, benefit, cost-effectiveness, successful rate, complications following the consecutive pregnancy and recurrent rate among these different approaches.

The medical approaches which are proof to decrease volume of myoma evidently include oral contraceptive pills, progestin, levonogestrol releasing intra-uterine system (LNG-IUS), gonadotropine releasing hormone agonist (GnRHa), progesterone receptor antagonist and selective progesterone receptor modulator (SPRM). They can decrease the 17%-50% volume of myoma according to varies literature but pregnancy-ongoing is contraindicated during therapeutic period. In addition, GnRH antagonist also shows the same effect of myoma shrinkage but currently this indication has not been approved yet.

The less invasive approaches include high intensive focus ultrasound (HIFU) ablation and radio-frequency ablation (RFA). These ideas came from the cancer ablative therapy such like HIFU on bony metastatic prostate cancer and RFA on metastatic cancer of liver. These approaches require unique instruments (RFA puncture needles) and power generators (both RFA and HIFU) and, of course, expensive cost is their weakness. The effect of myoma shrinkage needs to be observed for varies months and the following pregnant outcome/complications are not very clear based on limited experience and literature.

The invasive approaches, also known as surgical approaches, are carried out by most gynecological surgeons for over hundreds years. It is the easiest and most effective method to decrease the volume of myoma. Pathology checking is also available. Current surgical approaches include traditional laparotomic, minimally invasive (MIS, traditional laparoscopic or robotic assisted laparoscopic) or hysteroscopic method for only submucosal myoma. Based on the improvement of minimal invasive instruments (FlexDex needle driver TM), digital camera system (high definition, 3-D visual system) and Barbed suture wound closure device, the MIS procedures are increasing while traditional open surgeries are decreasing in nowadays. However, the rate of uterine rupture following pregnancy is still higher in MIS group than traditional surgery.

Based on the different clinical consideration, benefits and weakness, the most appropriate method to manage different myoma needs intensive discussion before therapy begins. Currently, share decision making of myoma management is important, frequent and easily encountered in our daily clinical practice as well.

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Technical pearls of laparoscopic myomectomy in the consideration of future conception

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There are several controversial issues related to laparoscopic myomectomy (LM) in the consideration of future conception, such as the necessary of LM to improve pregnancy rate, the risk of uterine rupture during subsequent pregnancy, and the safety of vaginal delivery after LM. Kameda S et al reported that LM is appropriate for uterine fibroid less than 10 in infertility women without other cause except for uterine fibroid. The incidence of uterine rupture after LM during subsequent pregnancy is rare (approximate 1 to 0.3%). Robotic myomectomy did not show superior to LM in preventing uterine rupture in subsequent pregnancy. The key pearls to success pregnancy and safe vaginal delivery are: 1. Preserve blood supply by saving the fibroid pseudocapsule and less diathermy use to enhance good myometrial healing. 2. Avoid endometrial penetration. 3. Good myometrial approximation through good suture technique, either interrupted or continuous suture.

Reference:

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Updates of global responses to the controversial LACC study

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Recently, Dr. Pedro T. Ramirez et al. has published an article in the New England Journal of Medicine (NEJM) titled “Minimally Invasive versus Abdominal Radical Hysterectomy for Early- Stage Cervical Cancer LACC Clinical Trial” . The article has caused public controversy worldwide, since there is discrepancy between the results of this study and the majority of published researches. Dr. Pedro T. Ramirez's article produces man-bites-dog effect because the results of this article are at variance with the majority. However, clear bias shown in the trial renders this article unsound. Therefore, TAMIG has responsibility for releasing a statement as follows:

1. TAMIG (Taiwan Association for Minimally Invasive Gynecology) has opposing views towards the conclusion from the articles published in the New England Journal of Medicine (NEJM) titled “Minimally Invasive versus Abdominal Radical Hysterectomy for Early- Stage Cervical Cancer LACC Clinical Trial” and “Survival after Minimally Invasive Radical Hysterectomy for Early-Stage Cervical Cancer.” According to international expert and our reviews, outcomes for both minimally invasive surgery and laparotomy are comparable, while minimally invasive surgery raises healthcare quality.
2. This trial contains bias as the study design neglects critical aspects including the surgical competence and experience of the participating surgeons and standardization of the operation procedures, thereby impacting the study results. The LACC trial must take into consideration the surgical proficiency and experience of the surgeons involved as well as the standardization of the operation procedures with more discretion.
3. The number of operations and a surgeon's surgical dexterity influence the quality of oncology treatment and outcome. Regrettably, the investigators in this trial recruited on average 2.1 cases per year per participating hospital site, rendering the study design and the method of evaluating surgical treatment outcomes questionable. Minimally

invasive radical hysterectomy for the treatment of cervical cancer demands a high level of surgical dexterity, proficiency, and accumulated experience owing to the level of difficulty of this type of surgery. Thus, it is without a doubt that an inexperienced surgeon or an amateur will negatively impact the surgical outcome and result in a poor prognosis. Consequently, the technical variability of each participating surgeon is a serious confounding factor that should be subjected to further scrutiny.

4. To date, minimally invasive surgery for radical hysterectomy has yet to be standardized worldwide, and the surgical experience for minimally invasive radical hysterectomy in each country varies greatly. Furthermore, in this trial, each participating site was only required to submit outcomes from ten laparoscopic radical hysterectomies from a portion of surgeons who were willing to enroll in this trial. The discrepancy in surgical competency as well as the lack of standardized operation procedure suggests performance bias and a flaw in study design and concept formation.
5. Poor methodologic quality and study selection lead to inaccurate and invalid outcomes. The investigators ought to know the disparity of surgical competency and experience of the surgeons as a large confounding factor. This lack of discretion in study selection results in erroneous outcomes, thereby interfering with the rights of patients to choose minimally invasive surgery.
6. Considerable innovations and breakthroughs have been achieved in the development of laparoscopic surgeries with respect to surgical techniques and mentality. Surgical methods and instruments are continuously being refined, and researches to date have shown the breadth of benefits of minimally invasive surgery. These advantages should not be overlooked or tarnished. Thus, the results from this trial should not be overemphasized; instead, extensive analyses and research efforts are compulsory.
7. TAMIG strongly advocates minimally invasive surgery for the treatment of endometrial cancer. As for the treatment of cervical cancer, detailed discussion and counselling to the patient should be offered and provided. Should the patient choose minimally invasive surgery for treatment of cervical cancer, she should be allowed and subjected to this operation by a qualified and experienced surgeon.

Finally, minimally invasive surgery indeed provides a new vision in the patient's care, because undeniable evidence has suggested the life quality and outcomes of minimally invasive therapy is much better than laparotomy not only for benign tumor but also for endometrial cancer. We will discuss more about the response from all over the world in this lecture.