Special Articles

Role of Hysteroscopy in Modern Gynaecology

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In only a few years, operative hysteroscopy has become very popular among gynecologists, whereas more than a century passed before diagnostic hysteroscopy attained wide acceptance. At present, with the development of miniaturized cameras, this endoscopic operative technique can be used in the management of all non-cancerous intrauterine lesions, with the entire procedure being performed under video monitoring. In this chapter we will review the present indications of diagnostic hysteroscopy and also report our results of hysteroscopic submucous myomectomy, polypectomy, adhesiolysis, septoplasty, and endometrial ablation.

Keywords: Diagnostic hysteroscopy, Operative hysteroscopy, Myomectomy, Polypectomy, Adhesiolysis, Septoplasty, Endometrial ablation

Over past decades, the developments in fiberoptics, light sources, high-resolution lenses, and endoscopic surgical instrumentation have led hysteroscopy to become an important diagnostic and therapeutic tool in patients with intrauterine disease. Hysteroscopy permits panoramic visualization of the uterine cavity and direct biopsy of lesions, thus increasing precision and accuracy in diagnosing intrauterine conditions.

Intrauterine adhesions, submucous leiomyoma, and endometrial polyps could be visualized and in many cases treatment could be done, under direct vision, on the same setting. Hysteroscopy helps in defining some types of congenital anomalies of the uterus so that treatment could be planned and postoperative results assessed. This endoscopic technique aided in the accurate localization of misplaced IUDs and enabled their recovery under visual guidance. The combination of hysteroscopy and endometrial biopsy is an accurate method for the early detection of endometrial neoplasia, its precursors, and benign lesions that cause abnormal uterine bleeding (AUB).

As an operative technique, hysteroscopy increases the precision of surgery and minimizes trauma to the endometrial lining, and on many occasions, may preclude major surgical intervention. Hysteroscopic

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operation is considered a type of minimally invasive surgery. The procedure offers the advantages to the patients of a shorter hospital stay and recovery time.

Indications for diagnostic hysteroscopy (Table 1)
Abnormal uterine bleeding

Abnormal uterine bleeding (AUB) is one of the most common problems to confront the gynecologists. It can be caused by hormonal, systemic or pathologic conditions in the uterine cavity. In the clinical practice, dilatation and curettage is a traditional method for detection of intrauterine pathologies. However, it is a blind technique and may miss pathologies such as focal lesions. Panoramic hysteroscopy is superior to curettage in making an accurate diagnosis of intrauterine pathology[1,2]. Uterine causes of AUB, such as submucous myomas, endometrial polyps and cancer, can be accurately diagnosed by hysteroscopy with directed biopsy[1,2]. Hysteroscopy permits the diagnosis and biopsy of focal lesions under vision or at least will allow the surgeon to identify the site of a directed curettage[3,4]. Between 40-85% of patients with abnormal uterine bleeding will demonstrate a uterine abnormality[2,5,6]. Our study demonstrated that of the 52 hysteroscopic examinations on premenopausal patients with AUB, 45 (86.54%) had intrauterine abnormalities. These included endometrial polyps in 22, submucous leiomyomas in 19, and endometrial hyperplasia in 4 patients. One of the most consistent findings in this study was the detection of endometrial polyps and

Table 1. Indications for diagnostic hysteroscopy

- Abnormal uterine bleeding in pre or postmenopausal patients
- As part of the basic infertility work up: abnormal HSG with suspected intrauterine lesions: diagnosis of uterine synechiae, endometrial polyps or submucous myoma
- Investigation of causes of recurrent pregnancy loss (RPL)
- Localization of a lost intrauterine contraceptive device or foreign body
- Diagnosis of cervical and uterine neoplasia
- Investigation of scars after uterine surgery

submucous myomas by hysteroscopy in patients who had multiple curettage procedures with no pathologic conditions demonstrated[2]. Since hysteroscopy is not widely available therefore, patients who should be referred to hysteroscopists are those with AUB who fail with previous hormonal or medical treatment or fail to detect intrauterine pathologies after traditional D&C, and whom there is a high suspicion of intrauterine pathology.

As part of the basic infertility work up

One of the basic steps of the infertility work up is to assess the shape and regularity of the uterine cavity. Historically, and still today as it turns out, the HSG has been the most commonly used test for this purpose. During the last two decades, however, several studies have demonstrated that when the uterine cavity has to be investigated in the infertility work up, hysteroscopy is much more accurate than HSG. [7-9] Hysteroscopy provides much more specific information and clarifies uncertain aspects of indirect techniques. We have shown that patients with abnormal hysterosalpingograms, hysteroscope not only helps to confirm the presence of a lesion but also helps to determine the location and nature of it.

We have reported a prospective comparative study between HSG and hysteroscopy in the detection of intrauterine pathology in 336 patients with infertility. Intrauterine abnormalities were shown on HSG in 286 and confirmed in 200 patients at hysteroscopy. Contrarily intrauterine lesions were detected by hysteroscopy in 4 out of 50 patients in whom HSG were normal. The most common intrauterine finding of 336 patients on hysteroscopy were intrauterine adhesions 74, followed by endometrial polyps 56, and submucous myoma 26 patients. Statistical analysis revealed that HSG in the detection of intrauterine pathology had a sensitivity of 98.0%, specificity of 34.9% and positive predictive value of 69.9% , negative predictive value of 92.0%, and accuracy rate of 73.2% with false positive and false negative rate of 30.1 and 8.0% respectively. The common incorrect diagnosis of HSG were misdiagnosing a condition of cervical stenosis as severe intrauterine adhesion in 24 patients, endometrial polyps as submucous myoma in 22 out of 50, and submucous myoma as endometrial polyps in 12 out of 72 patients.

We concluded that hysteroscopy is a safe, accurate, and useful diagnostic method in the evaluation of the uterine cavity in an infertile woman. HSG is a simple, noninvasive, and important screening procedure for the study of the uterine cavity and whenever it is combined with hysteroscopy the two techniques are complementary in their application to female infertility[9].

Investigation of causes of recurrent pregnancy loss (RPL)

Uterine anomalies may contribute to RPL. When in the course of the investigation of such couples it is deemed appropriate to seek such lesions. Clinically significant incomplete mullerian fusion or septum resorption occurs in 0.1% of females. Approximately 20-25% of women with unicornuate, bicornuate, didelphys, and or septate uteri will experience difficulty with reproductive functioning, including RPL[10]. Uterine fusion defects are generally associated with recurrent losses occurring in the second trimester. The incidence of spontaneous abortion in a woman with a unicornuate uterus is 48%; with uterine didelphys 43%; with bicornuate uterus 35% and with septate uterus 67%[11]. Hysteroscopy provides an instant diagnosis upon which further treatment can be planned or started. However, differentiation between a septate and a bicornuate uterus needs simultaneous laparoscopy for assessing the external configuration of the uterus. Hysteroscopic resection is currently a good treatment of choice for the patients with RPL and a uterine septum.

Misplaced intrauterine contraceptive device

When the intrauterine contraceptive device (IUCD) is misplaced. Radiologic investigation in the form of abdominal or pelvic x-ray or ultrasound is usually required to determine the site of a misplaced (IUCD). However, misdiagnoses of these two techniques may occur. The hysteroscope permits immediate confirmation of the presence and the position of a lost IUCD in the uterine cavity. If the device is identified, removal is easily performed under hysteroscopic

control by introducing the grasping forceps and pulling out the string as well as the IUCD. Therefore, hysteroscopy is probably an ideal method of removing the device, the missing piece or other foreign body[2].

Diagnosis of endometrial and cervical neoplasia

The most common form of malignancy found in the endometrium is adenocarcinoma. The most common symptom associated with endometrial carcinoma is AUB. Since this tumor occurs most frequently in postmenopausal patients, the onset of unexpected spotting or bleeding usually causes a woman to seek gynecologic consultation. Fractional dilatation and curettage has been the traditional way to evaluate such patients. Since curettage is a blind technique, intra-uterine lesions may be missed easily. Hysteroscopy is now playing an important role to detect these lesions. Hysteroscopy is useful for excluding those patients with AUB who show no signs of intrauterine pathology. The combination of hysteroscopy and endometrial biopsy is ideal for use in symptomatic patients for the early detection of endometrial neoplasia, its precursors, and benign lesions that cause AUB[12].

Hysteroscopy is not indicated for evaluation of invasive squamous cell carcinoma of the cervix. The information that could potentially be added would not change the treatment plan. Also, very heavy bleeding could occur. Although panoramic and contact hysteroscopy are of no value in case of cervical neoplasia, the magnifying power of the microcolpohysteroscope and its ability to penetrate the cervical canal to regions inaccessible to the colposcope permit the role in the assessment of pre-cancerous and CIS lesions of the cervix. However, this skill is difficult to acquire and is best performed only by those who have extensive experience[13].

Investigation of scars after uterine surgery

Uterine rupture during pregnancy is unlikely in women who have undergone cesarean section for non-obstructive obstetric causes, myomectomy, metroplasty or tubal reimplantation. In the event that information about such a scar is required, the degree of fibrosis and depth of any defect can be accurately assessed hysteroscopically[14].

Contraindications of hysteroscopy

Hysteroscopy is absolutely contraindicated in acute pelvic infection, the presence of desired intrauterine pregnancy, and cervical cancer. Acute uterine bleeding, recent uterine perforation, and patients with cardiovascular diseases are relative contra-indications to hysteroscopy.

Therapeutic hysteroscopy (Table 2)
Hysteroscopic submucous myomectomy

Leiomyomas uteri are found in 20-25% of women over the age of 35 years. These tumors can cause menorrhagia, infertility, spontaneous abortion, premature labor, and pelvic pain depending upon their size and location. Surgical management is either hysterectomy or myomectomy. Although myomectomy was introduced to gynecologic surgery nearly 150 years ago, it has been, during recent years, becoming an increasingly important procedure performed with greater frequency. This increased use of myomectomy rather than hysterectomy results from the desire and necessity of patients to retain or improve reproductive potential. In the past, myomectomy was performed abdominally by laparotomy and removal of the myoma through a uterine incision followed by repair of the uterine incision. This procedure is potentially hazardous because of the limited exposure and difficulty in controlling bleeding from the hysterotomy. In addition this procedure often disrupts the integrity of the uterine cavity. Neuwirth and Amin [15] have suggested that transcervical hysteroscopy may be the procedure of choice for the diagnosis and treatment of submucous myoma. The use of resectoscopic technique is a less invasive surgical alternative than an abdominal myomectomy for symptomatic submucous myomas while maintaining the patient's fertility. The immediate advantages of this procedure are apparent. The need for laparotomy is avoided as it is possible to remove the myoma without dissecting through the uterine wall. This results in reduced morbidity and eliminates the need for elective cesarean section at delivery.

We reported an initial result of the safety and efficacy of myomectomies performed by the hysteroscopic resectoscope in 50 patients. The indications for hysteroscopy and/or hysteroscopic myomectomy were menorrhagia in 23, metrorrhagia in 3, menometrorrhagia in 2, infertility with abnormal uterine bleeding in 12, abnormal uterine bleeding during hormonal replacement therapy (HRT) in 4 , and suspected submucous

Table 2. Therapeutic hysteroscopy

• Hysteroscopic submucous myomectomy
• Hysteroscopic polypectomy
• Lysis of intrauterine adhesions
• Transection and/or resection of uterine septum
• Endometrial ablation

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myomas detected by ultrasonography and/or sonohysterography in 6 patients. The mean age of the 50 patients was 39.5 years with a range of 26 to 66 years. The sizes of the submucous myomas ranged from 1-5 cm. The mean of operation time was 32 minutes (range 15-60 minutes) The mean volume of 1.5% glycine required for irrigation was 800 with a range of 600-2000 ml, and the mean deficit at the end of operation was 300 with a range of 200-1000 ml. The mean estimation of blood loss during the operation was 80 ml with a range of 50-200 ml. Postoperatively 28 out of 30 patients with menorrhagia had improvement in excessive bleeding (93.33%). One patient has undergone subsequent hysterectomy due to persistent heavy uterine bleeding from recurrent submucous myoma. All patients with infertility and patients under HRT had normal menstruation after this procedure. 5 out of 12 (41.67%) patients with infertility became pregnant after submucous resection. No serious complications occurred. One patient had a cervical laceration repaired by simple stitches. One patient had mild endometritis responding to outpatient antibiotics. Forty-eight patients were discharged from hospital the day after the operation, the remaining two staying overnight for observing post-operative bleeding. We have shown that resectoscopic myomectomy is a safe and effective surgical procedure. The procedure offers the advantage to the patients of a shorter hospital stay along with a low complication rate. The hysteroscopic approach to the symptomatic submucous myoma has dramatically changed the treatment options for patients who classically would be offered abdominal myomectomy or hysterectomy[16].

Hysteroscopic polypectomy

Endometrial polyps may be implicated as possible cause of infertility and repeated pregnancy loss or they may be totally asymptomatic. When they become symptomatic, they most commonly cause abnormal uterine bleeding and usually intermittent menstrual bleeding. The removal of endometrial polyps is very easily and safely accomplished hysteroscopically using either scissors, grasping forceps, electric probe or resectoscope.

We have reported a result of hysteroscopic polypectomy in 240 premenopausal and postmenopausal women who mostly suffered from abnormal uterine bleeding and infertility. Our study revealed that resectoscopic polypectomy needed more operating time, had more glycine absorption and complications but less recurrence than other hysteroscopic tech-

niques. The resectoscope had a 0% recurrence rate and that grasping forceps had a 15% recurrence rate. A total of 21(8.7%) complications occurred, but no major complications were noted. After long term follow up of 9 years and two months, those with abnormal uterine bleeding resumed normal menstruation in 93.1 % and those with infertility had a cumulative pregnancy rate of 42.3%. There was no statistical difference in reproductive outcome between patients having polyps £2.5 cms and >2.5cms. We concluded that hysteroscopic polypectomy is an effective, safe, minimally invasive procedure with low rate and mild complications. Restoration of reproductive ability did not depend on the size of the removed lesion. Resectoscopic surgery is more preferable to prevent recurrence of polyps[17].

Lysis of intrauterine adhesion (IUA)

Intrauterine adhesions may result in infertility and/or recurrent pregnancy loss. The incidence of intrauterine adhesions is steadily increasing. The main offender in the etiology of this disorder is trauma to a pregnant uterus, especially after curettage in puerperium or after missed abortion. Other causes include genital tuberculosis and previous uterine surgery.

Amenorrhea and/or menstrual aberations, infertility, and recurrent pregnancy loss after any uterine trauma should cause the physician to suspect the presence of IUA. Pregnancy achieved after IUA may be complicated by RPL, premature labor, placenta previa and placenta increta, andplacenta accreta. The diagnosis of this condition is mainly made by hysterosalpingography and/or hysteroscopy. The clinical use of hysterosalpingography (HSG) has made it possible to diagnose the condition of IUA fairly accurately. However, hysteroscopy is of great help in avoiding misleading of HSG, in that it can confirm the presence and location of the adhesions more distinctly.

One significant advantage of hysteroscopic lysis of adhesions is its ability to cut only scar tissue during dissection under direct vision. Thus, normal endometrium is not traumatized as it is with curettage, and hence the risk of reformation of adhesions is diminished.

In our study, 65 cases of intrauterine adhesions were reported. The characteristic clinical pictures were amenorrhea or hypomenorrhea accompanied by periodic lower abdominal pain in 50 patients, complained of recurrent pregnancy loss (RPL) in 5 and infertility in 45 patients. Of the 65 patients studied, 29 had mild adhesions, 26 had moderate adhesions, and 10 had severe adhesions. Adhesions were lysed with hys-

teroscopic scissors in 25, with biopsy forceps through hysteroscope in 10, with electrosurgery using a monopolar probe in 22 patients, and with resectoscope in 8 patients. The mean duration of the procedure was 15 minutes (range 10-45 minutes). Of the 44 patients who originally presented with secondary amenorrhea, 40(90.9%) have normal menses, 4 (9.1%) have hypomenorrhea. Of the 6 patients who had hypomenorrhea, 5(83.3%) have normal menses. Cyclic abdominal pain disappeared after treatment in all patients. Of the 45 patients with intrauterine adhesions and infertility, 18 (40%) conceived. Two (20%) of the infertile patients with initially severe adhesions conceived. One out of five patients with RPL delivered a premature baby at 29 weeks of gestation. All 19 patients who delivered, had live births. Adhesion reformation was absent in patients with initially mild and moderate adhesion but occured in 2 out of 10(20%) patients with severe adhesions. There was no complications attributed to this study.

We concluded that hysteroscopy is a good method of choice to diagnose, classify, treat, and follow-up patients with intrauterine adhesions. Hysteroscopic adhesiolysis is a safe, effective procedure and benefit patients suffering from infertility and amenorrhea, hypomenorrhea and/or periodic lower abdominal pain[18].

Transection and/or resection of uterine septum

A uterine septum is the most frequent malformation (60%) related to Mullerian defects. It is found in 1.9-3 % of the female population[19]. Reproductive results in women with a septate uterus include increased incidence of spontaneous abortion, premature birth, and abnormal presentations. Septate uterus is seen most often in women with reproductive wastage. When this defect is present, Fedele et al [20] reported 30-75% of miscarriages of first trimester, with also a high rate of late miscarriages, dystocia presentation in 30%, and 15-58% premature deliveries. Overall, 33% will not have a term delivery. Infertility that is related to a septum is still controversial.

Transection the septum with scissors is the simplest method. The laser may be used to excise the septum in a fasion very similar to the scissors. The uterine septum may be rapidly and safely resected using the resectoscope. Reproductive outcome following surgery is improved, with approximately 80-90% of patients achieving term pregnancy[21,22].

In our study, 28 cases of hysteroscopic treatment of septate uterus were reported. The majority of septa were partial. Most of the patients had recurrent pregnancy losses. Ten patients had suffered from spontaneous first-trimester losses. Sixteen had pregnancy losses in the second trimester. One had previous history of premature delivery. The other one had suffered from long duration of primary infertility. Division of the septum was performed with scissors in 7 , Versapoint bipolar electrode in 10, and by means of resectoscope in 11 patients. The operating time varied from 45 to 70 minutes with an average time of 50±5.5 minutes which included the time for laparoscopy. The blood loss during the operation was minimal. All patients were told to have barrier methods of contraception for two months after hysteroscopic treatment. Of the 28 patients, 4 patients have not tried to conceive because of personal reasons, and the other 5 patients were lost to follow-up. Fifteen patients who had postoperative hysterosalpingograms, demonstrated a normal uterine cavity. None was evaluated by repeat hysteroscopy. There were a total of 20 pregnancies after a mean period of 24 ±1.4 (range 6-42) months following hysteroscopic treatment, of which 15(75.0%) were carried to term, 3(15.0%) were spontaneous abortions, and 2(10.0%) are in progress. The rate of pregnancy wastage in the post-treatment group was 15% compared with 96.3% in the pretreatment group. All 28 patients were discharged a few hours after the operation. There were no serious complications attributed to this study. Most of the patients had minor spotting but no significant bleeding for a few days after hysteroscopic surgery. We concluded that hysteroscopy is a good method of choice to diagnose, classify, treat, and follow-up patients with septate uterus. Hysteroscopic metroplasty is a safe, simple and expeditious method of treating the septate uterus[23].

Endometrial ablation

Abnormal uterine bleeding is a condition that may afflict women from menarche through the reproductive years, to the menopause and beyond. About 85% of women with AUB during the reproductive years have dysfunctional uterine bleeding with no organic etiology. In the remaining 20%, an organic lesion or systemic disorder may cause the bleeding[24]. Endometrial ablation is indicated when a woman with excessive vaginal bleeding satisfied the following conditions: patient has completed childbearing, has been shown to suffer from dysfunctional bleeding without organic causes, has exhausted reasonable non-surgical alternatives, would previously have been offered the option of hysterectomy, and in whom the procedure is

believed to have a good likelihood of success. Hysteroscopic endometrial ablation can be performed either using the cutting loop for endometrial resection, or rollerball for electrocoagulation of the endometrium, or laser energy for endometrial ablation.

We reported the outcome of treatment in 90 patients with menorrhagia who underwent trans-cervical resection of the endometrium (TCRE) as an alternative to hysterectomy. The mean duration of the operation was 40.0 (range 20-90) minutes. The mean deficit of glycine at the end of operation was 480 (range 200-800) ml. The mean clinical estimation of blood loss during the operation was 150 ml (range 100-350 ml). The mean number of days in hospital for the patients was 2 days (range 1-6 days). Overall, the patients were able to return to normal everyday activities after a mean of 1.8 (0.5-4.1) weeks. There was a total of 4 (4.4%) complications including 1 case of uterine perforation which required a hysterectomy, 1 case of immediate postoperative bleeding requiring tamponade with a foley catheter, and 2 cases of low grade fever which resolved spontaneously within 24 hours. Of the 90 patients 42 (46.7%) women who underwent endometrial resection became amenorrhoeic during follow up of up to 6 months. Of the remaining 48 patients, 38 (42.2%) reported regular but shorter and lighter periods, 8 (8.9%) resumed normal menstruation, 2 (2.2%) continued to have a menstrual problem which required hysterectomies. we have shown that healthy women with abnormal uterine bleeding may also be a candidates for TCRE as an alternative to hysterectomy. Transcervical resection of the endometrium appears to be a safe, effective and readily acceptable solution to menstrual problems allowing women to lead normal social lives and avoid major surgery[25].

Training in Hysteroscopy

The trainees must first become familiar with the instruments and their assembly and then learn to perform diagnostic hysteroscopy. When the skills of diagnostic hysteroscopy have been mastered, progress may be made to operative hysteroscopy.

The development of expertise in hysteroscopic surgery involves the surgeon undergoing a change in attitude, acquiring the appropriate knowledge, undergoing formal training and then practicing the new techniques.

Hysteroscopic surgery has been classified into 3 levels of minor, intermediate and advanced operation (Table 3). This classification has merit in that it gives some indication of the progression which surgeons in training should undertake. Surgeons should commence with simple procedures before attempting complicated ones and should recognize the degree of difficulty of each operation[26].

The future trend of hysteroscopy

Hysteroscopy is rapidly becoming a common examination for every gynecologist. Hysteroscopy is no longer a procedure looking for an indication. With improved optical systems and thinner endoscopes, the cervical canal will be passed easily with minimal discomfort to the patient and hysteroscopy will become an indispensable out-patient, office procedure. As an office hysteroscopy at the out patient department, the hysteroscopic findings enable the physician to plan future therapy with greater precision. In most instances, hospital based curettage can be avoided to search for the cause of abnormal uterine bleeding.

Regarding operative hysteroscopy, smaller with high quality instruments and hysteroscopic electrosurgical instruments using electrolyte-containing distention media are continuing developed in order to make operative procedures easier and also to avoid most problems associated with electrolyte-free distention media.

New approaches to endometrial ablation including the thermal balloon endometrial ablation, microwave endometrial ablation, and radiofrequency induced endometrial ablation are undergoing clinical evaluation. These procedures suppose to have less complications comparing to traditional resectoscopic endometrial ablation.

Conclusion

Hysteroscopy has become a standard investigational and therapeutic tool in the current practice of gynecology. It is a most reliable procedure for the direct inspection of the uterine cavity and enable the

Table 3. Classification of hysteroscopic operations

Level 1	Diagnostic hysteroscopy and target biopsy
	Removal of simple polyps
	Removal of IUCD
Level 2	Division of minor synechiae
	Division of pedunculated myoma
	Proximal fallopian tube cannulation
Level 3	Transection and/or resection of uterine septum
	Resection of submucous myoma
	Division of major synechiae
	Endometrial resection/ablation
	Repeat endometrial resection/ablation

correction of many intrauterine abnormalities without the need for major surgery. The advantages of hysteroscopic surgery include less hospitalization and expense, reduce disability and morbidity, and rapid return to normal activity. Operative hysteroscopy will be a mainstay in the practice of modern gynecology.

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การตรวจและผ่าตัดผู้ป่วยด้วยกล้องส่องโพรงมดลูกในทางนรีเวช

แสงชัย พฤทธิพันธุ์

ปัจจุบันการตรวจวินิจฉัยพยาธิสภาพภายในโพรงมดลูกด้วยกล้องส่องโพรงมดลูกถือเป็น *gold standard* และได้รับความนิยมมากขึ้นตามลำดับ เนื่องจากเป็นการตรวจที่สามารถมองเห็นพยาธิสภาพได้โดยตรง ให้การวินิจฉัย แยกโรคได้ถูกต้อง แม่นยำและรวดเร็วเมื่อเทียบกับการตรวจด้วยวิธีอื่นๆ ในอดีตที่ผ่านมา การตัดชิ้นเนื้อส่งตรวจทาง พยาธิวิทยาในขณะที่ตรวจด้วยกล้องเพื่อยืนยันการวินิจฉัยโรค ก็สามารถทำได้แม่นยำตรงกับตำแหน่งที่มีพยาธิสภาพ ข้อดีของการตรวจด้วยกล้องส่องโพรงมดลูก นอกจากจะช่วยในการวินิจฉัยพยาธิสภาพภายในโพรงมดลูกได้แม่นยำ และรวดเร็วแล้ว ในกรณีที่แพทย์มีความชำนาญสามารถทำการผ่าตัดผ่านกล้องได้ และอยู่ในสถานที่ที่มีอุปกรณ์ การผ่าตัดพร้อมเพรียงและดมยาสลบได้ ก็ให้การรักษาด้วยการผ่าตัดผ่านกล้องได้ในคราวเดียวกัน การผ่าตัดด้วย กล้องเป็นการผ่าตัดที่ผู้ป่วยได้รับการบาดเจ็บน้อย (*minimal invasive surgery*) สามารถทำในลักษณะผู้ป่วยนอก ที่เรียกว่า *day case surgery* ภายหลังการผ่าตัด ผู้ป่วยจะใช้เวลาพักฟื้นน้อยและกลับไปทำงานตามปกติได้เร็ว

การผ่าตัดด้วยกล้องในหลายกรณีสามารถนำมาทดแทนการผ่าตัดใหญ่แบบดั้งเดิมที่ต้องเปิด หน้าท้องและผ่าตัดเปิดผนังของมดลูกเพื่อเข้าไปตัดเอาพยาธิสภาพภายในโพรงมดลูกออก การผ่าตัดใหญ่ แบบดั้งเดิมดังกล่าวมีข้อเสียหลายประการคือ นอกจากมีโอกาสเสี่ยงต่อการเกิดภาวะแทรกซ้อนอันตราย เช่นเดียวกับการผ่าตัดใหญ่ทั่วไปแล้ว ยังมีโอกาสเสี่ยงต่อการเสียเลือดมาก การอักเสบหลังผ่าตัด การเกิดพังผืด ภายในช่องท้องและอุ้งเชิงกราน ซึ่งจะเป็นสาเหตุหนึ่งที่ทำให้ผู้ป่วยมีปัญหาเรื่องมีบุตรยากภายหลังการผ่าตัด ในกรณีที่ต้องผ่าตัดผ่านผนังมดลูกเข้าสู่โพรงมดลูก เมื่อผู้ป่วยตั้งครรภ์ภายหลังการผ่าตัด ก็มีความจำเป็นต้อง คลอดด้วยการผ่าตัดคลอด ในบทนี้จะทบทวนเกี่ยวกับข้อบ่งชี้และข้อห้ามของการตรวจและผ่าตัดด้วยกล้อง ตลอดจนรายงานผลสำเร็จของการผ่าตัดเนื้องอก *submucous myoma, endometrial polyps* การผ่าตัดเลาะ พังผืดและ *uterine septum* รวมถึง *endometrial ablation* ที่ทำการผ่าตัดที่โรงพยาบาลรามาธิบดี