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**Date of Search:** 21 Jun 2017

**Sources Searched:** Medline, Embase, CINAHL.

## Management of Submucosal Fibroids in Postmenopausal Women

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### 1. Postmenopausal Endometrial Bleeding

**Author(s):** Lee J.H.; Dighe M.K.; Dubinsky T.J.

**Source:** Ultrasound Clinics;

**Publication Type(s):** Article In Press

**Abstract:** Uterine bleeding in postmenopausal women is caused by endometrial atrophy, endometrial hyperplasia, endometrial polyp, submucosal leiomyoma, and endometrial cancer. Although most postmenopausal uterine bleeding is attributed to benign causes, the most common presenting symptom of endometrial cancer is uterine bleeding. Endovaginal sonography is generally accepted as an initial diagnostic tool to evaluate endometrium. It allows triaging patients who need endometrial biopsy and histologic diagnosis versus hysterosonography and hysteroscopy. Hysterosonography can be useful not only in the confirmation and characterization of focal endometrial pathologic conditions but it can also provide guidance to localize and treat focal endometrial pathologic conditions. © 2011 Elsevier Inc. All rights reserved.

**Database:** EMBASE

### 2. Direct uterine sampling using the SAP-1 sampler device to detect endometrial lesions during histopathological examination

**Author(s):** Li M.X.; Zhou R.; Liu C.; Zhao L.J.; Wang J.L.; Wei L.H.; Shen D.H.

**Source:** European Journal of Gynaecological Oncology; 2017; vol. 38 (no. 2); p. 221-226

**Publication Date:** 2017

**Publication Type(s):** Article

**Abstract:** **Aims:** To evaluate the sampling adequacy and diagnostic accuracy of the endometrial SAP-1 sampling device in detecting endometrial lesions based on histopathological examination. **Materials and Methods:** In total, 182 patients who required an endometrial biopsy were enrolled in this study. All of the patients underwent endometrial biopsies with the SAP-1 sampler prior to hysteroscopy (169/182) or dilatation and curettage (D&C) (13/182). Endometrial tissues were obtained at biopsy for histopathological examination. **Results:** Adequate endometrial specimens were obtained in 148 of 182 patients (81.32%). Menopause ( $p = 0.000$ ), endometrial thickness ( $p = 0.004$ ), and the types of endometrial diseases ( $p = 0.009$ ) differed significantly between the two groups. Among the 169 patients who underwent hysteroscopy, sampling scratches were observed in the uterine cavity in 147 cases (86.98%). Compared to traditional methods, such as hysteroscopy and D&C, the sampling diagnostic sensitivity, specificity, and positive and negative predictive values were 82.35%, 100%, 100%, and 97.76% for endometrial carcinoma ( $n=17$ ) and 37.5%, 100%, 100% and 97.76% for

endometrial atypical hyperplasia (n=8), respectively. Those that were misdiagnosed occurred because the lesions were focal or localized in a small part of the uterine cavity. The sampling diagnostic sensitivity for polyps (n=32) was 12.5%. Two patients with submucosal leiomyoma went undiagnosed based on the sample specimens. Conclusion: Endometrial sampling using the SAP-1 sampler is a minimally invasive alternative technique for obtaining adequate endometrial specimens for histopathological examination. The SAP-1 sampler was useful in detecting endometrial carcinoma and atypical hyperplasia cases that were not highly suspected to be localized; however, this method was not useful in detecting endometrial polyps and submucosal leiomyomas.

**Database:** EMBASE

### **3. Optimal approaches to fibroid management.**

**Author(s):** MORIN, SCOTT J.; SCHLAFF, WILLIAM D.

**Source:** Contemporary OB/GYN; Jan 2017; vol. 62 (no. 1); p. 21-25

**Publication Date:** Jan 2017

**Publication Type(s):** Academic Journal

Available in full text at [Contemporary OB/GYN](#) - from EBSCOhost

Available in full text at [Contemporary OB/GYN](#) - from ProQuest

**Abstract:**The article synthesizes the complex literature on fibroids into evidence-based, pragmatic clinical recommendations for contemporary fibroid management. Topics covered include the reproductive implications and therapeutic options for uterine fibroids, detailed description of the location of the fibroid in relation to the endometrial cavity, and the three types of submucosal fibroids.

**Database:** CINAHL

### **4. Resection of a 5 cm type I vascular submucosal leiomyoma using the Symphion™ tissue removal system**

**Author(s):** McSorley A.L.; Hanna M.; Tam T.

**Source:** Journal of Minimally Invasive Gynecology; 2016; vol. 23 (no. 7)

**Publication Date:** 2016

**Publication Type(s):** Conference Abstract

**Abstract:**Hysteroscopy is a minimally invasive surgical modality used to diagnose and treat intrauterine problems including abnormal uterine bleeding or anatomical abnormalities such as polyps or leiomyomas. We present a case using the Symphion™ tissue removal system to perform a hysteroscopic myomectomy. Symphion™ is a newer system with three innovations working together: bladeless resection using a radiofrequency (RF) bipolar device while providing spot coagulation, direct intrauterine pressure monitoring, and an integrated fluid management system. This video presents a 56-year-old G3P3003 referred for postmenopausal bleeding. Pelvic ultrasound revealed two intramural fibroids. Office hysteroscopy showed a 5 cm Type I vascular submucosal fibroid. She underwent a hysteroscopic myomectomy using the Symphion™ system with complete fibroid removal. Bleeding was well controlled during the procedure providing a clear operative field. The surgery was uncomplicated, and the patient was discharged home the same day.

**Database:** EMBASE

## 5. Uterine artery embolization for symptomatic fibroids in postmenopausal women.

**Author(s):** Lee, Shin Jae; Kim, Man Deuk; Kim, Gyoung Min; Won, Jong Yoon; Park, Sung Il; Lee, Do Yun

**Source:** Clinical imaging; 2016; vol. 40 (no. 1); p. 106-109

**Publication Date:** 2016

**Publication Type(s):** Journal Article

Available in full text at [Clinical Imaging](#) - from ProQuest

**Abstract:** **PURPOSE** The aim of the current study was to evaluate the efficacy of uterine artery embolization (UAE) for symptomatic fibroids in postmenopausal women. **MATERIALS AND METHODS** Among 900 cases who underwent UAE between 2007 and 2013, a total of 9 postmenopausal women with symptomatic fibroids (n=6) and fibroid with adenomyosis (n=3) were included in this retrospective study. Ages ranged from 49 to 55 years (median of 52). The embolic agent was nonspherical polyvinyl alcohol particles. We evaluated 18 uterine arteries in nine patients and compared the size of the uterine artery relative to inferior mesenteric artery (IMA) in preprocedural magnetic resonance (MR) angiography. Magnetic resonance imaging (MRI) was performed before and 3 months after UAE. Predominant fibroid and uterine volumes were calculated from MR images. **RESULTS** Urinary frequency was the most common symptom, observed in seven patients (77.8%). Of two patients (22.2%) with vaginal bleeding from submucosal myomas, one patient had been on hormone replacement therapy (HRT). One patient underwent UAE due to growing leiomyoma after HRT. All of the 18 uterine arteries were bigger than the corresponding IMAs in MR angiography. Contrast-enhanced MRI revealed complete necrosis of the predominant fibroid in all patients. Eight (88.9%) of the nine participants demonstrated resolution of symptoms. The mean predominant fibroid and uterine volume reduction rates were 39.7% and 36.9%, respectively. **CONCLUSIONS** In postmenopausal women, UAE was effective to treat symptomatic fibroids, and it could be considered as an alternative treatment to hysterectomy.

**Database:** Medline

## 6. Imaging for Polyps and Leiomyomas in Women with Abnormal Uterine Bleeding: A Systematic Review

**Author(s):** Maheux-Lacroix S.; Li F.; Laberge P.Y.; Abbott J.

**Source:** Obstetrics and Gynecology; Dec 2016; vol. 128 (no. 6); p. 1425-1436

**Publication Date:** Dec 2016

**Publication Type(s):** Review

Available in print at [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#) - from Obstetrics and Gynecology

Available in full text at [Obstetrics and Gynecology](#) - from Ovid

**Abstract:** **OBJECTIVE:** To evaluate the accuracy of saline infusion sonohysterography in comparison with transvaginal ultrasonography for diagnosing polyps and submucosal leiomyomas in women with abnormal uterine bleeding. **DATA SOURCES:** We searched the databases MEDLINE, EMBASE, CENTRAL, and ClinicalTrials.gov as well as citations and reference lists to the end of November 2015. **METHODS OF STUDY SELECTION:** Two authors screened 5,347 citations for eligibility. We included randomized controlled trials or prospective cohort studies published in English, assessing the accuracy of saline infusion sonohysterography and transvaginal ultrasonography for diagnosing polyps and submucosal leiomyomas in women with abnormal uterine bleeding. We considered studies using histopathologic specimens obtained at either hysteroscopy or hysterectomy as criterion standard. **TABULATION, INTEGRATION, AND RESULTS:** Twenty-five studies were eligible.

Two authors extracted data and assessed the quality of included studies. Bivariate random-effects models were used to compare the different tests and evaluate sources of heterogeneity. Saline infusion sonohysterography was superior to transvaginal ultrasonography with pooled sensitivity and specificity of 0.92 and 0.89 compared with 0.64 and 0.90, respectively (PCopyright © 2016 by The American College of Obstetricians and Gynecologists. Published by Wolters Kluwer Health, Inc. All rights reserved.

**Database:** EMBASE

## **7. Sonohysterography in peri- and postmenopausal women with abnormal uterine bleeding or abnormal endometrial appearance**

**Author(s):** Luterek K.; Szymusik I.; Bartkowiak R.; Wielgos M.

**Source:** Neuroendocrinology Letters; 2014; vol. 35 (no. 4); p. 297-300

**Publication Date:** 2014

**Publication Type(s):** Article

Available in full text at [Neuroendocrinology Letters](#) - from Free Access Content

**Abstract:**OBJECTIVES: To assess the usefulness of SIS and to compare its diagnostic accuracy with conventional transvaginal ultrasound (TVS) and hysteroscopy (HSC) to detect intracavitary abnormalities in peri- and postmenopausal women with abnormal endometrial appearance or abnormal uterine bleeding (AUB) prior to admission. DESIGN AND SETTING: The study group consisted of 40 patients in peri- and postmenopausal period referred to the 1st Department of Obstetrics and Gynecology, Medical University of Warsaw due to AUB or abnormal endometrial appearance on TVS between January 2013 and June 2013. All the participants underwent TVS followed by SIS in order to plan further management. Only the patients with uterine abnormalities on TVS examination, proved by SIS were qualified for HSC. Hysteroscopic guided biopsies were taken in cases with focal lesions. The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of TVS, SIS and HSC were calculated by comparison with the final pathological diagnosis as the gold standard. RESULTS: The comparison of the three diagnostic procedures revealed that the diagnostic accuracy of SIS and HSC is superior to conventional TVS. SIS and HSC had identical accuracy for submucosal myomas (PPV and NPV 1.0 for both), while in case of polypoid lesions the accuracy of HSC was higher than of SIS (HSC: PPV 0.8, NPV 1.0; SIS: PPV 0.75; NPV 0.75). CONCLUSIONS: Due to its accuracy and cost-effectiveness, SIS could be regarded as a primary diagnostic method allowing proper qualification for further invasive diagnostic or therapeutic procedures in the detection of uterine abnormalities among peri- and postmenopausal women. © 2014 Neuroendocrinology Letters.

**Database:** EMBASE

## **8. New hysteroscopic techniques for submucosal uterine fibroids.**

**Author(s):** Pakrashi, Tarita

**Source:** Current Opinion in Obstetrics & Gynecology; Aug 2014; vol. 26 (no. 4); p. 308-313

**Publication Date:** Aug 2014

**Publication Type(s):** Academic Journal

Available in full text at [Current Opinion in Obstetrics and Gynecology](#) - from Ovid

**Abstract:** PURPOSE OF REVIEW: To review the preoperative preparation, intraoperative equipment and techniques to facilitate hysteroscopic resection of submucous fibroids. RECENT FINDINGS: The use of preoperative ultrasound can guide safe resection of submucous fibroids and should be an integral part of a preoperative workup. The data regarding misoprostol use for cervical dilation prior to hysteroscopy is somewhat conflicting and the decision to preoperatively administer misoprostol should be on a case-by-case basis. Hysteroscopic resection of submucous intrauterine fibroids can now be performed under low-dose spinal anesthesia and with the development of smaller instruments and bipolar technology, in an office-based setting without any anesthesia and, sometimes, analgesia. Although the complete removal of type 1 and 2 submucous fibroids remain a challenge, the development of newer techniques such as office preparation of partially intramural myomas and cold-loop myomectomy can result in better removal of these submucous fibroids with an intramural component. SUMMARY: Hysteroscopic resection of submucous uterine fibroids should be a simple, well tolerated and effective procedure. Innovations to the existing hysteroscopic techniques and the development of the hysteroscopic morcellator will hopefully result in a greater number of gynecologic surgeons being able to safely perform hysteroscopic resection of submucous uterine fibroids.

**Database:** CINAHL

## **9. Surgical techniques and outcome in the management of submucous fibroids.**

**Author(s):** Capmas, Perrine; Levailant, Jean M; Fernandez, Hervé

**Source:** Current Opinion in Obstetrics & Gynecology; Aug 2013; vol. 25 (no. 4); p. 332-338

**Publication Date:** Aug 2013

**Publication Type(s):** Academic Journal

Available in full text at [Current Opinion in Obstetrics and Gynecology](#) - from Ovid

**Abstract:** PURPOSE OF REVIEW: Hysteroscopic myomectomy was a revolution for surgical treatment of symptomatic submucosal myoma. RECENT FINDINGS: A new International Federation of Gynecology and Obstetrics classification for myoma was recently described. Type 0, 1 and 2 are submucosal like in the European Society for Human Reproduction and Embryology. An intraoperative ultrasound control should be done to avoid bowel lesion when the margin between the deepest part of the myoma and the serosa is less than 5-8 mm. For monopolar resection, glycine is used as distension medium and a high frequency current is required. The bipolar system is a newer electrosurgical system. The distension medium used is isotonic saline. The advantage of this energy is that with the same safety and efficacy as the monopolar system, isotonic saline as a distension medium instead of glycine seems to reduce the risk of metabolic complications. For bleeding outcome, a success rate from 70 to 99% has been reported by different studies; the success rate seems to decline as the follow-up period increases for fertility outcome, submucosal fibroids have negative impact on pregnancy rates in the case of spontaneous fertility as in the case of assisted reproduction technologies. SUMMARY: Hysteroscopic resection of submucous myoma is a well tolerated procedure. Bipolar resection should be studied for safe diffusion. Fertility outcome and menorrhagia are both enhanced by hysteroscopic myomectomy.

**Database:** CINAHL

**10. Diagnostic accuracy of outpatient hysteroscopy versus transvaginal sonography in the evaluation of endometrial pathology**

**Author(s):** Jawad I.; Athanasias P.; Flemming R.; Pisal N.

**Source:** BJOG: An International Journal of Obstetrics and Gynaecology; Jun 2013; vol. 120 ; p. 363

**Publication Date:** Jun 2013

**Publication Type(s):** Conference Abstract

Available in full text at [BJOG: An International Journal of Obstetrics and Gynaecology](#) - from John Wiley and Sons

**Abstract:** Objectives Ultrasound imaging has a pivotal role in the assessment of endometrial pathology. However, it is closely dependent on the operator's skills and the quality of the scanning equipment. We compared the ultrasound diagnostic performance with the outpatient hysteroscopy findings on pre and postmenopausal symptomatic women that were referred to our department. Methods Two hundred and forty-four women with menstrual irregularities or postmenopausal bleeding underwent outpatient hysteroscopy over 22 months. All underwent ultrasound assessment of the endometrial cavity prior to their outpatient hysteroscopy. We assessed the correlation between the ultrasound and hysteroscopy findings. Results A total of 119 out of the 253 patients had hysteroscopy findings that did not correlate with their ultrasound assessments. These included 76 patients who had pathological findings on hysteroscopy that were not detected on ultrasound and conversely 43 patients who had a normal hysteroscopy despite focal pathologies being identified on ultrasound. Of the 76 patients whose focal pathologies were not seen on ultrasound, 44 had uterine polyps, 18 had submucosal fibroids and 14 had endometrial abnormalities such as thickening or polypoidal endometrium on hysteroscopy. The remaining patients had ultrasound findings that correlated with their hysteroscopy findings, of which 91 patients underwent ultrasound scans that were normal and 43 patients had pathologies identified on both investigations. The 43 patients who had findings which correlated with their ultrasound scans included 20 patients with submucosal fibroids, 20 patients with uterine polyps and three patients with endometrial abnormalities. In our study ultrasonography had a sensitivity of 36% for picking up focal pathologies, with a specificity of 68%. The positive predictive value of the investigation when compared to the gold standard hysteroscopy was 50%, with a negative predictive value of 54%. Also ultrasonography was better at confirming normal endometrium than at identifying focal pathologies. Conclusions Transvaginal ultrasonography is an established method for the evaluation of the endometrium but as it depends enormously on the operator's skills can be misleading. In our study more than 50% of the women with endometrial polyps and fibroids were diagnosed accurately only after an outpatient hysteroscopy.

**Database:** EMBASE



### **11. Effects of operative hysteroscopy with antiadhesion solution in the patients who have abnormal uterine bleeding or intrauterine lesions**

**Author(s):** Kim T.H.; Lee H.-H.; Chung S.-H.; Lee W.

**Source:** Journal of Minimally Invasive Gynecology; 2012; vol. 19 (no. 6)

**Publication Date:** 2012

**Publication Type(s):** Conference Abstract

**Abstract:** Study Objective: The purpose of this study was to evaluate the efficacy, safety, and benefits of hysteroscopic surgery in the treatment of dysfunctional uterine bleeding (DUB) or intrauterine lesions causing uterine bleeding in pre- and postmenopausal women. Design: We prospectively enrolled 100 patients who underwent operative hysteroscopy because of uterine bleeding due to endometrial polyps or uterine submucosal myomas diagnosed by transvaginal ultrasonogram. Setting: Tertiary referral university center. Patients: Indications for the operative hysteroscopies included abnormal uterine bleeding (AUB), ultrasound findings indicative of intrauterine lesions, and dysfunctional uterine bleeding (DUB). Intervention: After operative hysteroscopic management, we inserted antiadhesive solution, (sodium hyaluronate and sodium carboxymethyl cellulose) into the uterine cavity. Measurements and Main Results: Operative hysteroscopy was a successful procedure in 100 of 100 cases (100%) but it needed to be repeated in three cases with large uterine submucosal myomas and after two polypectomies. Mean duration of the procedure was 23.2 minutes (range 5-67) and postoperative hospital stay was 7 hours (range 3-48). Most common indication was DUB (39%), submucosal myoma was 21%, and endometrial polyp was 17%. There were five cases with postoperative uterine bleeding and none with fluid overload syndrome. During postoperative follow-up (3-28 months) 90/100 patients (90%) were free of clinical symptoms like menstrual disorders and abnormal uterine bleeding. Conclusion: Hysteroscopic procedure is an effective and safe method for the management of benign intracavitary pathology or the treatment of dysfunctional uterine bleeding. We can confirm that there was no intrauterine adhesion in 5 patients who underwent a second operative hysteroscopy. Although anti-adhesive solution, (sodium hyaluronate and sodium carboxymethyl cellulose) seems to be effective in the prevention of adhesion in uterine cavity, further study will be needed to prove the effectiveness of anti-adhesive solution.

**Database:** EMBASE

### **12. Comparative study of outpatient hysteroscopy vs transvaginal sonography in the evaluation of endometrial pathology**

**Author(s):** Jawad I.; Athanasias P.; Pisal N.

**Source:** International Journal of Gynecology and Obstetrics; Oct 2012; vol. 119

**Publication Date:** Oct 2012

**Publication Type(s):** Conference Abstract

Available in full text at [Intl Jrrnl Gynecology and Obstet](#) - from John Wiley and Sons

**Abstract:** Objectives: Ultrasound imaging has a pivotal role in the assessment of endometrial pathology. However, it is closely dependent on the operator's skills and the quality of the scanning equipment. We compared the ultrasound diagnostic performance with the outpatient hysteroscopy findings on pre and post menopausal symptomatic women that were referred to our department. Materials: 244 women with menstrual irregularities or postmenopausal bleeding underwent outpatient hysteroscopy over 22 months in the gynaecology department in a district general hospital. All of the patients underwent ultrasound assessment of the endometrial cavity prior to the outpatient hysteroscopy. We assessed the correlation between the ultrasound and hysteroscopy findings. Methods: Retrospective study in a district general hospital. Data was collected from the outpatient hysteroscopy clinic registry, the hospital notes and the computer database. Results: A

total of 119 out of the 253 patients had hysteroscopy findings that did not correlate with their ultrasound assessments. 76 patients had pathological findings on hysteroscopy that were not detected on ultrasound and conversely 43 patients had a normal hysteroscopy despite focal pathologies being identified on ultrasound. Of the 76 patients whose focal pathologies were not seen on ultrasound, 44 had uterine polyps, 18 had submucosal fibroids and 14 had endometrial abnormalities such as thickening or polypoidal endometrium which were found on hysteroscopy. The remaining patients had ultrasound findings that correlated with their hysteroscopy findings. 91 patients underwent ultrasound scans that were essentially normal and 43 patients had pathologies identified on both investigations. The 43 patients who had findings which correlated with their ultrasound scans included 20 patients with fibroids, 20 patients with polyps and 3 patients with endometrial thickening. Conclusions: Transvaginal ultrasonography is an established method for the evaluation of the endometrium but as it depends enormously on the operator's skills can be misleading. In our study more than 50% of the women with endometrial polyps and fibroids were diagnosed accurately only after an outpatient hysteroscopy as the sensitivity of this procedure was significantly higher compared to ultrasonography.

**Database:** EMBASE

### **13. Submucosal Leiomyoma in a woman with post-menopausal bleeding - diagnostic dilemma, ultrasound vs MRI: A case report**

**Author(s):** Rajneesh M.K.; Agarawal N.; Goel R.

**Source:** Journal of Clinical and Diagnostic Research; Apr 2012; vol. 6 (no. 2); p. 313-315

**Publication Date:** Apr 2012

**Publication Type(s):** Article

Available in full text at [Journal of Clinical and Diagnostic Research : JCDR](#) - from National Library of Medicine

**Abstract:** Introduction: We are reporting a case of submucosal leiomyoma in a post-menopausal women with a history of bleeding, which mimicked endometrial hyperplasia on ultrasound and was considered as a case of endometrial carcinoma. Case Presentation: A 44-year-old female who had attained menopause 04 yrs back, presented with on and off bleeding per vagina since one month. An ultrasound which was done outside our hospital, reported a markedly hypertrophied endometrium (24mm). She was not on any hormonal medications. Endometrial carcinoma was considered as a cause. Dilatation and curettage was done and the histopathology report showed atypical cells which were suggestive of malignancy. She was referred for MRI of the pelvis for further evaluation. The MRI was suggestive of a large, pedunculated, submucosal leiomyoma which protruded into the endometrium. A panhystrectomy was performed and the histopathology reports confirmed the leiomyoma. Conclusion: Ultrasound, as an initial modality of imaging, was not able to differentiate between the marked endometrial hypertrophy which was considered as endometrial carcinoma and the submucosal leiomyoma. MRI was helpful in reaching the diagnosis.

**Database:** EMBASE



#### **14. Effectiveness of hysteroscopic management of abnormal uterine bleeding in peri-and post-menopausal women**

**Author(s):** Cumashi E.; Burk I I.; Pavlakis E.; Musa D.; Skolarikos P.

**Source:** Maturitas; Mar 2012; vol. 71

**Publication Date:** Mar 2012

**Publication Type(s):** Conference Abstract

**Abstract:**Aim: To evaluate the efficacy, safety and benefits of hysteroscopy in the management of abnormal uterine bleeding in middle age women. Methods: In this prospective study participated 196 consecutive patients, middle age 45+/-10 years, who underwent operative hysteroscopy because of abnormal uterine bleeding due to endometrial polyps, submucosal myomas, septum and adhesions diagnosed by ultrasonography, hysterosalpingography or diagnostic hysteroscopy. We used the 5mm operative hysteroscope, the Versapoint Bipolar Electrosurgical system and mechanical instruments. Normal saline was used for distension of the uterine cavity. Results: No endometrial malignancy was missed. The major number of the lesions were endometrial polyps and submucosal myomas. Mean duration of the procedure was 17.3 min (range 4-37) and mean postoperative hospital stay was five hours (range 2-24 hours). There were no major complications. Three women reported postoperative uterine bleeding, which was managed conservatively and one patient experienced fluid overload. In all cases malignancy was excluded with histological diagnosis. During postoperative follow-up (36 months) the majority of patients were free of symptoms. Conclusion: Hysteroscopy represents an effective and safe method for the management of benign intrauterine pathology and furthermore, in our study endometrial malignancy was not missed. Moreover, hysteroscopy has the advantages of quick recovery, early return to normal activities, reduced hospital stay and increased satisfactory for the patient.

**Database:** EMBASE

#### **15. Peri-and postmenopausal uterine bleeding transvaginal ultrasound with hysterosonography and diagnostic correlation with hysteroscopy**

**Author(s):** Parihar M.; Parihar A.

**Source:** Donald School Journal of Ultrasound in Obstetrics and Gynecology; 2011; vol. 5 (no. 4); p. 343-352

**Publication Date:** 2011

**Publication Type(s):** Review

**Abstract:**The recent years have seen medical science and technology expand by leaps and bounds. We have shifted focus from correction of the problem to prevention of the problem. Abnormal uterine bleeding is an important cause of ill health in perimenopausal women. In the perimenopausal years, there is an increase in the incidence of bleeding irregularities. This is because of an increase in the prevalence of benign and malignant uterine lesions. There has also been a significant increase in the number of women presenting with postmenopausal bleeding. At transvaginal ultrasonography (TVS), the finding of a thickened central endometrial complex, with or without cystic changes, is often nonspecific and may be caused by an endometrial polyp, submucosal fibroid, endometrial hyperplasia, carcinoma or cystic atrophy. In addition, because of an increased prevalence of adenomyosis or adenomyosis-like changes in women around this age group, proper transvaginal sonographic assessment of endometrial thickness and abnormalities is of utmost importance but maybe difficult in some women. When TVS cannot accurately measure the endometrial thickness or when there is a nonspecific thickened central endometrial complex, hysterosonography can provide additional information and can help in the diagnosis and final treatment. Hysterosonography, as an adjunct to TVS, allows identification of intracavitary lesions and focal and diffuse endometrial

abnormalities and helps determine the abnormality. Final diagnosis confirmed by hysteroscopy. In this review, we discuss these common abnormalities and the correlation of TVS and hysterosonographic findings with hysteroscopic evaluation. © Jaypee Brothers Medical Publishers (P) Ltd.

**Database:** EMBASE

#### **16. Significance of endometrial thickness measurement for predicting benign intrauterine pathology in women with postmenopausal bleeding**

**Author(s):** Dane C.; Kaya O.; Dane B.; Saygi G.

**Source:** International Journal of Gynecological Cancer; Oct 2011; vol. 21 (no. 12)

**Publication Date:** Oct 2011

**Publication Type(s):** Conference Abstract

Available in full text at [International Journal of Gynecological Cancer](#) - from Ovid

**Abstract:**Objective: This study aimed to assess the diagnostic value of transvaginal ultrasonography measurement of the endometrium for prediction of focal intrauterine pathology in women with postmenopausal bleeding. Material and methods: The study group consisted of 312 women with postmenopausal bleeding who underwent transvaginal sonographic measurement of endometrial thickness followed by endometrial biopsy. The thickness of the endometrium was measured from a longitudinal sonogram through the thickest area of the endometrium. ROC curves for endometrial thickness and focal lesion were analyzed. Results: The mean age is 58, 4 +/- 8, 2 in the study group. Overall, 155 (49.6 %) cases of normal endometrium (atrophic, proliferative, and secretory), 90 (28.8 %) cases of endometrial polyps, 20 cases of submucosal leiomyoma, 20 cases of endometrial hyperplasia, and 23 (7.3 %) cases of endometrial cancer were identified. The mean value of endometrial thickness was significantly lower for patients with benign endometrial changes than for those with endometrial carcinoma (7.1 +/- 4.6 vs. 12.08 +/- 7.02,  $p < 0.0001$ ). The ROC analysis revealed that at endometrial thickness of 5.4 mm had an area under the curve of 0.781, ( $p < 0.0001$ ) with a sensitivity of 51.3 % (95% CI: 44.7 - 57.8) and a specificity of 91.0 % (95% CI: 82.4 - 96.3) in the diagnosis of benign histopathologic changes. The corresponding LR's for a positive test were 5.71 and a negative test was 0.54. Conclusion: Our study demonstrates that transvaginal ultrasonographic endometrial thickness measurement has moderate discriminative ability for detecting or excluding benign endometrial pathologies.

**Database:** EMBASE

## **17. The role of office hysteroscopy in diagnosis and treatment of intrauterine pathology in postmenopausal women**

**Author(s):** Da Silva Ma Teresa T.; Paiva C.; Rodrigues A.I.; Castro D.; Barreiro M.; Leal M.

**Source:** Climacteric; Jun 2011; vol. 14 ; p. 197

**Publication Date:** Jun 2011

**Publication Type(s):** Conference Abstract

**Abstract:** INTRODUCTION Postmenopausal bleeding accounts for 5% of gynecology referrals and all postmenopausal women with unexpected uterine bleeding should be evaluated for endometrial carcinoma. On the other hand, the presence of an endometrial thickness measured by transvaginal ultrasound greater than 5 mm in a postmenopausal woman is not compatible with atrophy and indicates the need for sampling. The hysteroscopy can be used to aid diagnosis or to direct the performance of a variety of intrauterine procedures. For most patients, diagnostic hysteroscopy can be performed in an office with minimal discomfort and a number of intrauterine procedures can be realized under endoscopic direction, and thus successfully treat the lesions encountered.

OBJECTIVES Aim of the study was to assess the usefulness of diagnostic hysteroscopy in diagnosis and treatment of intrauterine pathology in postmenopausal women, as well as the most frequent pathologies found in this group of women. METHODOLOGY A total of 124 postmenopausal women were included in this study. Diagnostic hysteroscopy was indicated in the following situations: endometrial thickness  $\geq 5$  mm in asymptomatic patients; postmenopausal bleeding; and irregular endometrium or endometrium difficult to assess from ultrasound, with or without vaginal bleeding.

RESULTS The main indication for diagnostic hysteroscopy was endometrial thickness  $\geq 5$  mm in asymptomatic patients (89%), followed by postmenopausal bleeding (9%). The commonest pathology encountered was endometrial polyps (52%) and it was diagnosed atrophic endometrium in 10% of women. 80% of endometrial polyps found during the hysteroscopy were successfully removed. In seven women (6%) the hysteroscopic appearance suggested malignancy and histology revealed two endometrial adenocarcinoma, two atypical hyperplasia, two complex hyperplasia and one simple hyperplasia. Only ten patients (8%) were not screened by pain intolerance and were subsequently submitted to hysteroscopy under anesthesia. Fifteen women of the total (12%) had to be submitted to an operative hysteroscopy. The two main indications were for large polyps and submucosal leiomyomas. CONCLUSION Hysteroscopy is a highly accurate diagnostic method for the detection of endometrial pathology and shows great efficiency, safety and tolerance in the diagnosis and treatment of focal abnormalities of the endometrium.

**Database:** EMBASE

## **18. Dysfunctional uterine bleeding: Diagnostic approach and therapeutic options**

**Author(s):** Basic N.; Feldstein V.A.

**Source:** Ultrasound Clinics; Apr 2010; vol. 5 (no. 2); p. 245-256

**Publication Date:** Apr 2010

**Publication Type(s):** Review

**Abstract:**Abnormal uterine bleeding is a common symptom in pre- and postmenopausal women and appropriate triage of patients may be made with transvaginal sonography (TVUS) and, in some cases, subsequent saline-infused sonohysterography (SIS). Techniques, pitfalls, possible findings at TVUS and SIS are discussed, including focal and diffuse findings such as endometrial polyps, submucosal leiomyomas, and endometrial hyperplasia. Management recommendations based on disease process are discussed. Endometrial findings on TVUS and management of these findings in patients taking tamoxifen are addressed. A general algorithm is proposed in the workup of abnormal uterine bleeding. © 2010 Elsevier Inc. All rights reserved.

**Database:** EMBASE

## **19. Hysteroscopy in the evaluation of intrauterine cavity. Is it more valuable than dilatation and curettage?**

**Author(s):** Yildiz A.; Koksall A.; Ates P.F.; Ivit H.; Keklik A.; Cukurova K.

**Source:** Turkiye Klinikleri Journal of Medical Sciences; 2009; vol. 29 (no. 3); p. 675-680

**Publication Date:** 2009

**Publication Type(s):** Article

**Abstract:**Objective: The aim of this study was to compare dilatation and curettage (D&C) with office hysteroscopy in the diagnosis of uterine pathologies in women with abnormal uterine bleeding. Material and Methods: This retrospective study was carried out in the 3rd Obstetrics and Gynecology Clinic in our hospital setting between June 2005 and March 2006. In the first step of the study D&C was performed. After a mean duration of 6.3 weeks (min. 3 weeks- max. 7 weeks) following D&C, the second step was office hysteroscopy with multiple biopsies. Meanwhile preoperative preparations of patients with operation indication were carried out. Patients with genital malignancy or pregnancy related bleedings were excluded. The sensitivity, specificity, and positive and negative predictive values of D&C and office hysteroscopy were compared by setting the tables separately. Results: A total of 86 patients (14 postmenopausal, 72 premenopausal) were included in the study. While 62 of 86 cases were considered normal with D&C, only 20 were normal with office hysteroscopy. Of 86 34 had endometrial polyp and four had submucosal myoma uteri. The diagnosis of endometrial polyp was made by D&C in 24 cases and by hysteroscopy in 28 cases. The submucosal myoma cases were diagnosed and treated with hysteroscopy. Considering hysteroscopy the gold standard for examining the intrauterine cavity, sensitivity of the D&C was 36%, specificity was 100%, positive predictive value (PPV) was 100% and negative predictive value (NPV) was 32%. When histopathological examination was taken as the reference test, sensitivities of D&C and office hysteroscopy were 34% and 94% respectively. Specificity and PPV of both methods were 100%, but the NPVs were 25% and 80% respectively ( $p < 0.001$ ). Conclusion: Office hysteroscopy is a more valuable method than D&C in the diagnostic and therapeutic approach to abnormal uterine bleeding cases. Copyright © 2009 by Turkiye Klinikleri.

**Database:** EMBASE

## 20. Endometrial polyps in postmenopausal women

**Author(s):** Domingues A.P.; Lopes H.; Dias I.; De Oliveira C.F.

**Source:** Acta Obstetrica et Gynecologica Scandinavica; 2009; vol. 88 (no. 5); p. 618-620

**Publication Date:** 2009

**Publication Type(s):** Article

Available in full text at [Acta Obstetrica et Gynecologica Scandinavica](#) - from John Wiley and Sons

**Abstract:**The malignancy risk of endometrial polyps in postmenopausal women was correlated with the presence or absence of abnormal uterine bleeding. Of 481 postmenopausal women who presented with endometrial polyps at diagnostic hysteroscopy between 2004 and 2007, 48.9% were asymptomatic and 51.1% had postmenopausal uterine bleeding. Transvaginal ultrasound revealed abnormal endometrial thickness in 60.0% vs. 57.7%, polyps in 37.9% vs. 32.9%, endometrial tumors in 1.3% vs. 0.8%, and submucosal myomas in 0.9% vs. 2.0% by the absence or presence of bleeding. Around three-fourth of the polyps were removed. Histopathologic diagnoses showed mucous polyps in 93.7 of asymptomatic women compared to 80.7% of those with bleeding, while endometrial tumors were only seen in those bleeding (7.2%). The malignancy risk within endometrial polyps in postmenopausal women varies with the presence of vaginal bleeding, and is minimal in asymptomatic women.

**Database:** EMBASE

## 21. Abnormal uterine and post-menopausal bleeding in the acute gynaecology unit.

**Author(s):** Bignardi, Tommaso; Van den Bosch, Thierry; Condous, George

**Source:** Best practice & research. Clinical obstetrics & gynaecology; Oct 2009; vol. 23 (no. 5); p. 595-607

**Publication Date:** Oct 2009

**Publication Type(s):** Journal Article Review

Available in print at [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#) - from Best Practice and Research Clinical Obstetrics and Gynaecology

**Abstract:**Abnormal uterine bleeding is one of the most common presentations in the acute gynaecology unit. The general principles of emergency care, including assessment of haemodynamic state, symptomatic relief as well as determination of underlying aetiology, apply to these women. We review different strategies in the diagnosis and investigation of abnormal uterine bleeding in both pre- and post-menopausal women. Transvaginal ultrasound (TVS) with colour Doppler is the cornerstone of initial management. TVS, in experienced hands, can reliably exclude the most common intra-cavitary pathologies including endometrial polyps and submucosal fibroids. Their exclusion, in pre-menopausal women, aids in the diagnosis of dysfunctional uterine bleeding. In post-menopausal women, the endometrial thickness reliably selects those who need further testing. If a thin and regular endometrium is visualised, malignancy is most unlikely. To allow for reliable evaluation of the endometrium, TVS has to be performed before endometrial sampling. Saline infusion sonohysterography (SIS) is most valuable in the detection of focal intra-cavitary lesions. TVS with or without SIS can provide enough information to avoid an unnecessary hysteroscopy. In this review, we will also discuss an evidence-based algorithm for the work-up of women with post-menopausal bleeding.

**Database:** Medline

## **22. Value of endometrial thickness measurement for diagnosing focal intrauterine pathology in women without abnormal uterine bleeding**

**Author(s):** Dreisler E.; Stampe Sorensen S.; Lose G.; Ibsen P.H.

**Source:** Ultrasound in Obstetrics and Gynecology; Mar 2009; vol. 33 (no. 3); p. 344-348

**Publication Date:** Mar 2009

**Publication Type(s):** Article

Available in full text at [Ultrasound in Obstetrics and Gynecology](#) - from John Wiley and Sons

**Abstract:** Objective To assess the diagnostic value of transvaginal onographic (TVS) measurement of endometrial thickness or diagnosing focal intrauterine pathology in women without abnormal uterine bleeding (AUB). Methods A random selection from the Danish Civil Registration System was made: 1660 women aged 20-74 years were invited to participate and 686 women were eligible and accepted inclusion (429 pre- and 257 postmenopausal). The women underwent TVS measurement of endometrial thickness and saline contrast sonohysterography (SCSH). Hysteroscopic resection with histopathology (gold standard) was performed when focal intrauterine pathology was suspected at SCSH. We excluded women with AUB (n = 237), failure of SCSH (n = 50), a scan that was not in the follicular phase (n = 11), hysteroscopy contraindicated (n = 2), and users of sequential hormone therapy (n = 9) or selective estrogen receptor modulators (n = 2). Thus, 375 women without AUB were included (217 pre- and 158 postmenopausal). Receiver-operating characteristics (ROC) curves for endometrial thickness and focal lesion were analyzed. Results Focal intrauterine pathology was confirmed in 41 women (35 with polyps, five with submucosal myomas and one with polypoidal growing cancer). For premenopausal women, the area under the ROC curve (AUC) was 0.79 (95% CI, 0.68-0.89) and for postmenopausal women it was 0.84 (95% CI, 0.76-0.92). For premenopausal women, the best negative likelihood ratio (LR- = 0.11) was obtained at an endometrial thickness of 5.2 mm, with a negative predictive value (NPV) of 99% and a positive predictive value (PPV) of 10%. For postmenopausal women the best LR- (0.08) was obtained at an endometrial thickness of 2.8 mm, with a NPV of 99% and a PPV of 26%. Conclusions In women without AUB, TVS measurement of endometrial thickness is a poor diagnostic test, but is apparently efficacious in excluding focal intrauterine pathology, especially in postmenopausal women. The 4-5-mm threshold conventionally used to exclude endometrial malignancy in women with postmenopausal bleeding is not transferable to women without AUB for excluding focal intrauterine pathology. Copyright © 2009 ISUOG. Published by John Wiley & Sons, Ltd.

**Database:** EMBASE

### **23. Transvaginal ultrasonography and saline infusion sonohysterography for the detection of intra-uterine lesions in pre- and post-menopausal women with abnormal uterine bleeding.**

**Author(s):** Yildizhan, B; Yildizhan, R; Ozkesici, B; Suer, N

**Source:** The Journal of international medical research; 2008; vol. 36 (no. 6); p. 1205-1213

**Publication Date:** 2008

**Publication Type(s):** Clinical Trial Journal Article

Available in print at [Patricia Bowen Library and Knowledge Service West Middlesex university Hospital](#) - from Journal of International Medical Research

Available in full text at [Journal of International Medical Research](#) - from Free Access Content

**Abstract:** This prospective study investigated 79 pre- and 25 post-menopausal women with abnormal uterine bleeding who underwent conventional transvaginal ultrasonography (TVS) and saline infusion sonohysterography (SIS) and compared the results with histopathological findings obtained by dilatation and curettage, hysteroscopy or hysterectomy. Histological examination revealed normal endometrial histology in 28 patients, intracavitary polyps in 46 patients, submucosal fibroids in 18 patients, intramural fibroids in six patients and endometrial hyperplasia in six patients. The sensitivity and specificity of TVS in detecting endometrial polyps were 65.2% and 87.9%, respectively, compared with 91.3% and 93.1% for SIS. The sensitivity and specificity of TVS in detecting uterine fibroids were 95.8% and 95.0%, respectively, versus 91.6% and 98.7% for SIS. These results show that SIS is a satisfactory method of identifying lesions and that it is easy and cost-effective, and improves on the diagnostic utility of TVS. SIS is also a less invasive alternative to hysteroscopy, so should result in less morbidity in the evaluation of abnormal uterine bleeding in women.

**Database:** Medline

### **24. Can we rely on blind endometrial biopsy for detection of focal intrauterine pathology?**

**Author(s):** Svirsky R.; Smorgick N.; Feingold M.; Halperin R.; Pansky M.; Sagiv R.; Rozowski U.

**Source:** American Journal of Obstetrics and Gynecology; Aug 2008; vol. 199 (no. 2); p. 115

**Publication Date:** Aug 2008

**Publication Type(s):** Article

**Abstract:** Objective: To compare the diagnostic power of random endometrial biopsy with hysteroscopy for intrauterine lesions. Study Design: A retrospective cohort study of 639 women evaluated by diagnostic office hysteroscopy and endometrial biopsy (Novak curette) was carried out between 10/1997-6/2000. Reasons for evaluation were postmenopausal bleeding, abnormal uterine bleeding, ultrasound or hystero-salpingography findings, intrauterine device removal, suspected retained products of conception, infertility, late abortions and recurrent abortions. Results: The women's mean age was 43.4+/-13.3 years (range, 18-88). The most prevalent indication for investigation was abnormal uterine bleeding (n=218, 34.1%), followed by sonographic or hystero-salpingographic findings (n=167, 26.1%). Hysteroscopy revealed a normal uterine cavity in 367 (57.4%) women. Endometrial polyps and submucosal fibroids were the most common hysteroscopic findings (in 151 [23.6%] and 72 [11.3%], respectively). The hysteroscopic findings were compared with the pathology results in 558 cases. The sensitivity of the Novak curette for detection of endometrial polyps and submucosal fibroids was only 8.4% and 1.4%, respectively. The positive predictive value (30.9%) and the negative predictive value (57.9%) for both lesions were likewise low. On the other hand, hysteroscopy was not effective in diagnosing the 27 cases of hyperplasia (26 simple and one complex) all without atypia. Conclusion: Random endometrial sampling alone is not



effective for diagnosing focal lesions of the uterine cavity and should be combined with other modalities, preferably diagnostic hysteroscopy. © 2008 Mosby, Inc. All rights reserved.

**Database:** EMBASE

**25. Targeted and tailored diagnostic strategies in women with perimenopausal bleeding: advantages of the sonohysterographic approach.**

**Author(s):** Verrotti, Carla; Benassi, Gianluca; Caforio, Eleonora; Nardelli, Giovanni Battista

**Source:** Acta bio-medica : Atenei Parmensis; Aug 2008; vol. 79 (no. 2); p. 133-136

**Publication Date:** Aug 2008

**Publication Type(s):** Journal Article

Available in full text at [Acta Bio Medica: Atenei Parmensis](#) - from Free Access Content

**Abstract:**BACKGROUND AND AIM OF THE WORKDiagnosis and treatment of endometrial pathology nowadays ranges from clinical examination to transvaginal ultrasound (TVS), saline infusion sonohysterography (SIS), hysterosalpingography (HSG) and hysteroscopy (HYS). However, many gynaecologists prescribe blind endometrial biopsies, such as Vacuum ABRASion (VABRA), as single strategy. The purpose of this work is to evaluate whether the procedure of VABRA should still be performed alone in perimenopausal women with abnormal uterine bleeding, compared to biopsies and samples obtained after a previous transvaginal sonohysterography.METHODSWe retrospectively reviewed the records of 216 patients referred to our Ultrasonography and Day-Surgery Center between November 2005 and December 2006 with persistent premenopausal uterine bleeding, spotting or postmenopausal bleeding. One hundred and five out of 216 pts.(48.6%), defined as Group "A", underwent a sole endometrial sampling by VABRA; 111 out of 216 pts. (51.4%), Group "B", had a SIS first.RESULTSVabra showed a poor sensitivity in the diagnosis of polyps (19%) and submucosal myoma, with a negative predictive value of 73.4%. Likelihood ratio for test negative was 0.81, with an overall diagnostic accuracy of 75%.CONCLUSIONSThis study confirms that blind endometrial biopsies should no longer be performed as the only diagnostic strategy in perimenopausal women with abnormal uterine bleeding. On the other hand, a sonohysteroscopy-guided approach allows an accurate detection of focal lesions; nevertheless, it should not be forgotten that SIS is an ultrasound based procedure, and may provide further information on endometrial thickness, myomas, ovaries and pelvis.

**Database:** Medline

## **26. Postmenopausal Bleeding**

**Author(s):** Mihmanli I.; Kantarci F.

**Source:** Ultrasound Clinics; Jul 2008; vol. 3 (no. 3); p. 391-397

**Publication Date:** Jul 2008

**Publication Type(s):** Review

**Abstract:**Postmenopausal bleeding (PMB) may be defined as recurrent vaginal bleeding in a menopausal woman at least 1 year after cessation of cycles. In postmenopausal bleeding, transvaginal ultrasonography (TVUS) is preferred over endometrial biopsy as an initial diagnostic tool. The use of TVUS decreases the need for invasive diagnostic procedures for women without abnormalities, and ultrasound increases the sensitivity of detecting abnormalities in women with postmenopausal bleeding. It is a less invasive procedure, is generally painless, has no complications, and may be more sensitive for detecting carcinoma than blind biopsy. Sonohysterography allows reliable differentiation between focal and diffuse endometrial and subendometrial lesions, with the most common being polyps and submucosal fibroids. © 2008 Elsevier Inc. All rights reserved.

**Database:** EMBASE

## **27. Saline Infusion Sonohysterography**

**Author(s):** Ong C.L.

**Source:** Ultrasound Clinics; Jan 2007; vol. 2 (no. 1); p. 121-132

**Publication Date:** Jan 2007

**Publication Type(s):** Review

**Abstract:**Saline infusion sonohysterography is a useful adjunct to transvaginal ultrasonography for the evaluation of the endometrial cavity. Patients who may benefit from this technique include pre- and postmenopausal women who have abnormal endometrial thickening, women who have submucosal fibroids, and women undergoing screening before in vitro fertilization. © 2007 Elsevier Inc. All rights reserved.

**Database:** EMBASE

## **28. Hysteroscopic myomectomy in postmenopausal women.**

**Author(s):** Loffer, Franklin D

**Source:** Journal of minimally invasive gynecology; 2005; vol. 12 (no. 4); p. 323-325

**Publication Date:** 2005

**Publication Type(s):** Journal Article

**Abstract:****STUDY OBJECTIVE**To review the findings in postmenopausal patients undergoing hysteroscopic myomectomy.**DESIGN**Retrospective case-controlled study (Canadian Task Force classification II-2).**SETTING**Private practice.**PATIENTS**Eighteen women with postmenopausal bleeding and two asymptomatic women with abnormal ultrasounds.**INTERVENTIONS**Hysteroscopic myomectomy in 19 patients, with concomitant destruction of the endometrium in 4 patients, and resectoscopic biopsy in 1 patient.**MEASUREMENTS AND MAIN RESULTS**Three patients underwent subsequent gynecologic surgery. One had hysteroscopy to evaluate and remove an asymptomatic residual myoma found on ultrasound. A sarcoma was found in two of the symptomatic patients. Two patients underwent hysterectomy-one for a sarcoma and the other for a carcinoma of the cervix. One patient has had further postmenopausal bleeding.**CONCLUSION**Women who have a submucosal

myoma that becomes symptomatic in the menopausal period may be at increased risk for a sarcoma.

**Database:** Medline

## **29. The value of sonohysterography in detecting intracavitary benign abnormalities.**

**Author(s):** Valenzano, Mario M; Lijoi, Davide; Mistrangelo, Emanuela; Fortunato, Tiziana; Costantini, Sergio; Ragni, Nicola

**Source:** Archives of gynecology and obstetrics; Oct 2005; vol. 272 (no. 4); p. 265-268

**Publication Date:** Oct 2005

**Publication Type(s):** Comparative Study Journal Article

Available in full text at [Archives of Gynecology and Obstetrics](#) - from Springer Link Journals

**Abstract:** The aim of this retrospective study was to assess the diagnostic value and the usefulness of sonohysterography in the detection of uterine intracavitary benign abnormalities, compared with other diagnostic methods (transvaginal ultrasonography and diagnostic hysteroscopy). From January 2003 to December 2003, a total of 73 patients (47 premenopausal (middle age 38.9) and 26 postmenopausal women (middle age 60.5)) underwent transvaginal ultrasonography (TVS) and sonohysterography (SHG), consisting of an intrauterine infusion of saline solution during transvaginal ultrasound. The women referred to our Ultrasonography Center because of intermenstrual (38) or postmenopausal bleeding (19), or an abnormal or a poorly defined endometrial interface (16) as seen as baseline ultrasonography. The findings at TVS and SHG were compared with hysteroscopy (HS). In one case, the SHG was technically impossible to perform. In premenopausal group the sensitivity of SHG had been 100% in detecting submucosal fibroids, endometrial polyps and hyperplasia and 75% in detecting normal uterus. The specificity had been always 100%. In postmenopausal group the sensitivity of SHG had been 75% in detecting submucosal fibroids, 93.8% in endometrial polyps and 100% in hyperplasia and normal uterus. The specificity had been 100% in submucosal fibroids and hyperplasia and had been 90.0 and 95.5% in endometrial polyps and normal uterus, respectively. SHG allows to obtain a precise diagnosis of benign uterine pathology and it is more accurate in the diagnosis of intracavitary abnormalities than that obtained by TVS. Preoperative use of SHG may assist in choosing the best surgical treatment for the patient.

**Database:** Medline

### **30. The short-term clinical outcomes after saline infusion sonohysterography in women with postmenopausal bleeding**

**Author(s):** Meng K.; Branam J.D.; Nghiem H.V.; Carlos R.C.

**Source:** Academic Radiology; Feb 2005; vol. 12 (no. 2); p. 136-141

**Publication Date:** Feb 2005

**Publication Type(s):** Review

**Abstract:**Rationale and Objective. To describe the short-term clinical outcomes of women with postmenopausal bleeding (PMB) who underwent saline-infused sonohysterography (SIS) and the impact of SIS results on clinical management. Materials and Methods. A retrospective review of the Radiology Information Systems database identified 786 women who underwent SIS between February 1998 and October 2002. Of this group, 144 women (mean age, 60; range, 42-83) presented with PMB. The following clinical data were extracted from the electronic medical record: date of birth, hormone replacement therapy (HRT) status, SIS results, and clinical management before and after the SIS procedure. We categorized post-SIS clinical management into three categories: additional diagnostic or therapeutic procedure performed; HRT change or addition; or no change in clinical management. Between-group comparisons were performed using a chi2 test. Results. Of the 144 women with postmenopausal bleeding who underwent SIS, 119 (82.6%) successfully completed the SIS. Eighty women (67.2%) had a positive SIS exam. Abnormalities detected including polyps (n = 42); submucosal fibroids (n = 6); endometrial thickening (n = 8); a combination of 2 or more of the above (n = 7), or other abnormalities (debris, adenomyosis, or indeterminate findings, n = 17). Of the women with a positive SIS exam, 58% received subsequent diagnostic/therapeutic procedures compared to 5% of women who had a negative SIS (P < 0.001). Conversely, 59% of women with a negative SIS had no change in clinical management compared to 17.5% who had a positive SIS (P < 0.001). Conclusion. The trend in short-term clinical management is to pursue more aggressive subsequent diagnostic or treatment procedures if findings are positive on SIS. A negative SIS exam was associated with more conservative management. © AUR, 2005.

**Database:** EMBASE

### **31. Prospective study of saline infusion sonohysterography in evaluation of perimenopausal and postmenopausal women with abnormal uterine bleeding**

**Author(s):** Pasrija S.; Trivedi S.S.; Narula M.K.

**Source:** Journal of Obstetrics and Gynaecology Research; Feb 2004; vol. 30 (no. 1); p. 27-33

**Publication Date:** Feb 2004

**Publication Type(s):** Article

Available in full text at [Journal of Obstetrics and Gynaecology Research](#) - from John Wiley and Sons

**Abstract:**Aim: To evaluate saline infusion sonohysterography as an investigative modality in abnormal uterine bleeding in perimenopausal and postmenopausal women. Methods: Fifty-eight patients, 52 perimenopausal and six postmenopausal women, with abnormal uterine bleeding were selected from the department of Obstetrics and Gynecology of Shrimati Sucheta Kriplani Hospital. After complete work-ups, transvaginal examinations were performed followed by sonohysterographies. The sensitivity, specificity, positive predictive values and negative predictive values were calculated for transvaginal sonography (TVS) and saline infusion sonohysterography as compared with findings of hysteroscopy/hysterectomy. Results: Saline infusion sonohysterography was performed in 56 cases. It could not be done in one perimenopausal and one postmenopausal woman. Cavity was normal in 41 perimenopausal and five postmenopausal women. Ten women displayed abnormalities. Two had submucosal fibroids, two had intramural fibroids, one had fibroid polyp, three had endometrial polyps and two patients had endometrial growths. We found that TVS

missed three endometrial polyps and one endometrial growth and led to mislabeling two intramural fibroids as submucosal. On comparing the sonohysterographic findings with those of hysteroscopy or hysterectomy, one endometrial polyp and one endocervical polyp was missed on sonohysterography, and one false positive growth was observed on sonohysterography. The sensitivity, specificity, positive predictive value and the negative predictive value of TVS were 84.8%, 79%, 82.4% and 82%, respectively. The sensitivity, specificity, positive predictive value and the negative predictive value of saline infusion sonohysterography were 94.1%, 88.5%, 91.4% and 92%, respectively. Conclusion: Saline infusion sonohysterography is a safe, convenient, time conserving, cost effective, easily accessible and acceptable investigative modality. It definitely enhances the diagnostic potential of TVS in assessment of endometrium and intracavitary pathologies.

**Database:** EMBASE

### **32. Sonohysterographic findings of endometrial and subendometrial conditions**

**Author(s):** Davis P.C.; O'Neill M.J.; Yoder I.C.; Lee S.I.; Mueller P.R.

**Source:** Radiographics : a review publication of the Radiological Society of North America, Inc; 2002; vol. 22 (no. 4); p. 803-816

**Publication Date:** 2002

**Publication Type(s):** Review

Available in full text at [RadioGraphics](#) - from Free Access Content

**Abstract:** Sonohysterography has become the standard test in the evaluation of dysfunctional uterine and postmenopausal bleeding because it allows reliable differentiation between focal and diffuse endometrial and subendometrial lesions, with the most common being polyps and submucosal fibroids. An endometrial polyp usually appears as a well-defined, homogeneous, polypoid lesion that is isoechoic to the endometrium with preservation of the endometrial-myometrial interface. Atypical polyps have cystic components, multiplicity, a broad base, and hypoechogenicity or heterogeneity. Submucosal fibroids are usually broad-based, hypoechoic, well-defined, solid masses with shadowing and an overlying layer of echogenic endometrium that distorts the endometrial-myometrial interface. Atypical fibroids are pedunculated or have a multilobulated surface. The major advantage of sonohysterography is that it can accurately depict the percentage of the fibroid that projects into the endometrial cavity. Endometrial hyperplasia usually appears as diffuse thickening of the echogenic endometrial stripe without focal abnormality, but occasionally focal hyperplasia can be seen. Endometrial cancer is typically a diffuse process, but early cases can appear as a polypoid mass. Adhesions usually appear as mobile, thin, echogenic bands that bridge a normally distensible endometrial cavity, but occasionally thick, broad-based bands or complete obliteration of the endometrial cavity is seen. Although endometrial lesions have characteristic features, a wide range of appearances is possible, with significant overlap between entities. Radiologists should be familiar with the broad spectrum of findings that may be seen at sonohysterography in both benign and malignant processes to raise the appropriate level of concern and to direct the clinician toward the appropriate means of diagnostic biopsy or surgery. Copyright RSNA, 2002

**Database:** EMBASE

### **33. Two-dimensional versus three-dimensional ultrasound in the evaluation of endometrial pathology: does it aid in visualization?**

**Author(s):** Thomas L; Gifford J; Pope J; Marks WM

**Source:** Journal of Diagnostic Medical Sonography; Nov 2002; vol. 18 (no. 6); p. 361-366

**Publication Date:** Nov 2002

**Publication Type(s):** Academic Journal

**Abstract:**The objective of this prospective study was to compare 2-dimensional (2D) and 3-dimensional (3D) images of endometrial pathology in premenopausal and postmenopausal patients. The 3D sonographic images were evaluated with respect to the contour and texture of the endometrium, endometrial to myometrial interface, and visible pathology in the 3D coronal view. Nine female patients referred for routine pelvic ultrasound exams were scanned transvaginally in both 2D and 3D, and common endometrial pathology including polyps, fluid collections, submucosal fibroids, and hyperplasia were identified. Only 44.4% of the pathology identified by 2D was visualized by 3D.

**Database:** CINAHL

### **34. Transvaginal saline hysterosonography: characteristics distinguishing malignant and various benign conditions.**

**Author(s):** Laifer-Narin, S L; Ragavendra, N; Lu, D S; Sayre, J; Perrella, R R; Grant, E G

**Source:** AJR. American journal of roentgenology; Jun 1999; vol. 172 (no. 6); p. 1513-1520

**Publication Date:** Jun 1999

**Publication Type(s):** Journal Article

Available in full text at [American Journal of Roentgenology](#) - from Free Access Content

**Abstract:****OBJECTIVE**The objective of this study is to establish criteria for distinguishing endometrial polyps, submucosal leiomyomas, endometrial hyperplasia, and endometrial carcinoma on saline hysterosonography.**MATERIALS AND METHOD**Sixty-three saline hysterosonograms with histologic confirmation were retrospectively analyzed. We found 26 endometrial polyps, 16 submucosal leiomyomas, three endometrial hyperplasias, one abnormal endometrium associated with a sloughed polyp, one pseudopolyp, and three endometrial carcinomas; 15 sonograms revealed no abnormality. In two patients, sonography revealed both polyps and submucosal leiomyomas. The sonographic appearance of these abnormalities was analyzed to define criteria for their diagnosis.**RESULT**Twenty-five of 26 polyps were uniformly echogenic with smooth borders and either had a stalk or formed acute angles with underlying endometrium. Sixteen of 16 submucosal leiomyomas showed heterogeneous echogenicity; however, 13 were sessile and three were pedunculated. Endometrial hyperplasia was manifested by wall thickening in two patients and tiny polypoid excrescences in one patient. In all patients with endometrial carcinoma, the endometrial cavities were poorly distensible despite successful cervical os cannulation. All patients with abnormalities other than endometrial carcinoma had fully distensible uterine cavities.**CONCLUSION**Malignant and various benign endometrial conditions may be accurately distinguished on saline hysterosonography. Uniformity of echogenicity distinguished all polyps from submucosal leiomyomas, but the angulation formed with the endometrial wall by the intracavitary mass did not distinguish all polyps from submucosal leiomyomas. Lack of distensibility of the endometrial canal is a potential sign of endometrial carcinoma.

**Database:** Medline

**35. The value of transvaginal sonography with and without saline instillation in the diagnosis of uterine pathology in pre- and postmenopausal women with abnormal bleeding or suspect sonographic findings.**

**Author(s):** Bronz, L; Suter, T; Rusca, T

**Source:** Ultrasound in obstetrics & gynecology : the official journal of the International Society of Ultrasound in Obstetrics and Gynecology; Jan 1997; vol. 9 (no. 1); p. 53-58

**Publication Date:** Jan 1997

**Publication Type(s):** Journal Article

Available in full text at [Ultrasound in Obstetrics and Gynecology](#) - from John Wiley and Sons

**Abstract:**In this prospective study, 139 patients, 83 premenopausal patients with abnormal uterine bleeding and 56 postmenopausal patients either with metrorrhagia (33) or a suspect sonographic finding (23), were examined preoperatively with transvaginal sonography (TVS) and saline contrast hysterosonography (SCHS). The histological results, obtained by hysteroscopy, were compared with the preoperative findings. Uterine pathology (benign polyps, submucous fibroids, endometrial hyperplasia and carcinoma) was found in 74.7% and 76.8% of the pre- and postmenopausal patients, respectively. TVS and SCHS are very sensitive at diagnosing uterine pathology, the latter being more specific and enabling better surgical management and a reduction in unnecessary interventions.

**Database:** Medline

**36. Endometrial Evaluation in Asymptomatic Postmenopausal Women by Transvaginal Sonography and Color Flow Doppler**

**Author(s):** Exacoustos; Chiaretti; Minghetti; Bianchi; Arduini; Romanini

**Source:** The Journal of the American Association of Gynecologic Laparoscopists; Aug 1996; vol. 3 (no. 4)

**Publication Date:** Aug 1996

**Publication Type(s):** Journal Article

**Abstract:**We attempted to correlate transvaginal ultrasound endometrial assessment with histologic and hysteroscopic findings in 910 asymptomatic postmenopausal women. The women all had been postmenopausal for at least 1 year, and had no sonographically documented adnexal masses, no hormone therapy, and no history of uterine bleeding. Endometrial thickness of 5 mm and less was considered normal, and no further investigations were performed. All women with endometrial thickness 8 mm or greater were advised to undergo hysteroscopy and endometrial biopsy if necessary. When endometrial thickness was 6 to 7 mm, hysteroscopy was recommended if irregular endometrial echotexture was observed; otherwise another ultrasound examination within 3 to 6 months was suggested. We observed 83 (9.1%) asymptomatic women with endometrial thickness 8 mm or greater and 77 (8.5%) with a thickness of 6 to 7 mm, in whom a total of 89 hysteroscopies were performed. Three endometrial cancers, 8 hyperplasias, 27 endometrial polyps, and 5 submucosal myomas were detected in those with endometrial thickness of 8 mm or greater. Of the 21 women with endometrial thickness 6 to 7 mm who underwent hysteroscopy, 7 had endometrial polyps, 4 hyperplasia, and 3 submucosal myomas. Based on sensitivity and specificity analyses, an endometrial thickness of 8 or 10 mm in asymptomatic postmenopausal women seems to be an effective cut-off to select candidates for more invasive diagnostic procedures.

**Database:** Medline



**37. Transvaginal hysterosonography: comparison with biopsy in the evaluation of postmenopausal bleeding.**

**Author(s):** Dubinsky, T J; Parvey, H R; Gormaz, G; Curtis, M; Maklad, N

**Source:** Journal of ultrasound in medicine : official journal of the American Institute of Ultrasound in Medicine; Dec 1995; vol. 14 (no. 12); p. 887-893

**Publication Date:** Dec 1995

**Publication Type(s):** Comparative Study Journal Article

**Abstract:**Transvaginal sonography is a highly sensitive method for detecting endometrial thickening. In the postmenopausal woman such thickening is non-specific and can be due to hyperplasia, polyps, submucosal endoluminal fibroids, or carcinoma. In such cases, transvaginal sonography combined with transvaginal hysterosonography may assist in the workup of these endometrial processes. We compared the combination of transvaginal sonography and transvaginal hysterosonography to aspiration endometrial biopsy in the evaluation of women with postmenopausal bleeding. We prospectively performed transvaginal sonography in 148 women within 1 month (range, 10 days to 2 months) after having had an aspiration endometrial biopsy. Transvaginal hysterosonography was then performed in 81 of these women who had endometrial thickness greater than 5 mm. In these 81 patients, transvaginal hysterosonography confirmed 45 lesions: 23 pedunculated endometrial masses and 22 inhomogeneous sessile lesions. Women with positive transvaginal hysterosonography examinations then underwent hysteroscopy or hysterectomy, whereas women with negative examinations were followed conservatively. Forty-one of the 45 cases with endoluminal masses on transvaginal hysterosonography had false-negative aspiration biopsies. Of the five (11%) lesions that were malignant, three resulted in false-negative biopsies, one biopsy revealed hyperplasia, and only one biopsy was true positive. All 36 women with negative transvaginal hysterosonography examinations also had negative biopsy findings. We conclude that the combination of transvaginal sonography and transvaginal hysterosonography is more sensitive in the detection of endometrial pathologic lesions than is endometrial biopsy, and that transvaginal sonography or transvaginal hysterosonography should be included in the evaluation of women with postmenopausal bleeding.

**Database:** Medline

## Strategy 226486

#	Database	Search term	Results
1	Medline	("Submucosal fibroids").ti,ab	99
2	Medline	("submucosal Leiomyoma").ti,ab	92
3	Medline	(1 OR 2)	190
4	Medline	(postmenopaus* OR "post menopaus").ti,ab	54104
5	Medline	(Postmenopause).su	21798
6	Medline	(4 OR 5)	57466
7	Medline	(3 AND 6)	16
8	EMBASE	("Submucosal fibroids").ti,ab	166
9	EMBASE	("submucosal Leiomyoma").ti,ab	149
10	EMBASE	(8 OR 9)	312
11	EMBASE	(postmenopaus* OR "post menopaus").ti,ab	75837
12	EMBASE	exp POSTMENOPAUSE/ OR exp "POSTMENOPAUSE BLEEDING"/	56578
13	EMBASE	(11 OR 12)	87535
14	EMBASE	(10 AND 13)	37
15	EMBASE	exp "UTERUS MYOMA"/	13317
16	EMBASE	(submucosal).ti,ab	26516
17	EMBASE	(13 AND 15 AND 16)	24
18	Medline	(submucosal).ti,ab	17640

19	Medline	(Leiomyoma).su	18234
20	Medline	(6 AND 18 AND 19)	14
21	Medline	("submucosal myoma*").su	5
24	EMBASE	("submucosal myomas").ti,ab	158
25	EMBASE	(13 AND 24)	18
26	Medline	("submucosal myomas").ti,ab	88
27	Medline	(6 AND 26)	11
28	Medline	("sub mucosal").ti,ab	210
29	Medline	(6 AND 19 AND 28)	1
30	EMBASE	("sub mucosal").ti,ab	538
31	EMBASE	(13 AND 15 AND 30)	3
32	CINAHL	((("sub mucosal" OR submucosal) ADJ2 (fibroid* OR myoma* OR Leiomyoma*)).ti,ab	30
33	Medline	((("sub mucosal" OR submucosal) ADJ2 (fibroid* OR myoma* OR Leiomyoma*)).ti	92