

Sonohysterographic Evaluation of Endometrial Cavity in Women with Amenorrhoea or Oligomenorrhoea

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Summary

The aim of this study was to assess the usefulness of sonohysterography in evaluation of uterine cavity, particularly intrauterine adhesions, in women with oligomenorrhoea and amenorrhoea. Sonohysterography was done in 31 patients and findings compared with hysteroscopy. Thirteen cases of synechiae and one each of polyp and uterine anomaly was detected on hysteroscopy. 12/15 cases were detected correctly on sonohysterography. Three cases of synechiae were missed on sonohysterography. The sensitivity and specificity of sonohysterography was 80% and 75% respectively. Sonohysterography is an up coming modality for evaluating uterine cavity.

Introduction

There are various methods for evaluating the uterine cavity. Hysterosalpingography is widely used but carries a risk of infection in upto 30% (Stumpf and March, 1978). Ultrasonography is a noninvasive tool and especially transvaginal probe gives a good resolution (Coleman et al 1988). Hysteroscopy is the gold standard in the diagnosis of intrauterine pathology (Gallespie and Nichols 1994). Sonohysterography (SH), in which the uterine cavity is scanned while it is infused with sterile saline is a new but underutilised diagnostic tool for the detection of intracavitary abnormalities (Parsons and Lense 1993).

The purpose of this study was to assess the usefulness of sonohysterography in the detection of intracavitary abnormalities, particularly intrauterine adhesions.

Material and Methods

The study was performed at the Department of Obstetrics and Gynaecology at AIIMS, New Delhi. A total of 36 patients were included in the study after informed consent. The patients included were those with a history of oligomenorrhoea or amenorrhoea with failure of withdrawal bleeding with hormones. Luteinising hormone, follicle stimulating hormone, serum prolactin and thyroid function tests were normal in all of them.

Initially all patients were evaluated with pelvic ultrasonography using a transvaginal probe with a 6.5 MHz transducer (Siemens S1450). The dimensions and contour of the uterus, the endometrial lining and adhesions were examined. Afterwards, sonohysterography was performed with the patient in the dorsal lithotomy

position. A Sims speculum was inserted, the cervix was cleaned with povidine iodine solution and the anterior lip of cervix grasped with a vulsellum. A pediatric 9F Foley's catheter, held with a sponge holding forceps was inserted through the cervical canal until it reached the fundus. It was then drawn back 1.0-1.5 cm and the catheter was fixed by inflating its balloon with 1-1.5 ml sterile saline. The speculum was then removed and the transvaginal probe inserted in the posterior fornix. The uterine cavity was distended with sterile normal saline through the catheter at the rate of 10-20 ml/min. Serial sagittal and coronal views of the distended endometrial cavity were scanned. Incomplete separation of the anterior and posterior endometrium during saline instillation suggested intrauterine synechiae.

Hysteroscopy was performed immediately after this procedure and hysteroscopic findings were taken as gold standard. Prophylactic antibiotics were given.

Result

A total of 36 patients were included in the study. Their age ranged from 20-36 years. Amenorrhoea was the indication for hysteroscopy in 9 patients, 4 had primary and 5 secondary amenorrhoea. Twenty seven patients had oligomenorrhoea. Associated complaints were recurrent abortions in 9 and infertility in 7 patients.

Hysteroscopy findings were taken as gold standard and findings of sonohysterography compared with it. Half the patients had intrauterine pathology on hysteroscopy, commonest being synechiae 16/19 (84.2%). Sonohysterography could not be done in 5 cases. These cases were excluded. In three of these dense adhesions obliterating almost whole of uterine cavity were seen on hysteroscopy.

Table I gives distribution of intrauterine pathology as detected on hysteroscopy and sonohysterography (SH) in 31 patients. 12/15 cases were detected correctly on sonohysterography. The sensitivity of SH was 80% and specificity 75%. Three cases of synechiae were missed on sonohysterography and there were 4 false positives (septate uterus, 3 synechiae).

Discussion

Transvaginal sonography has transformed

diagnostic approach to the evaluation of uterine cavity. Because of the proximity of the probe to the organ explored, it is possible to use high frequency transducer and thus obtain high resolution image. Despite this the information may prove insufficient. In certain physiological and nonphysiological situations intracavitary fluid or discharges (secretions, blood) distend the uterine cavity and improve sonographic resolution. Distension can also be obtained artificially by instilling a solution into the uterine cavity, this forms the basis for sonohysterography.

There are many advantages of sonohysterography over hysteroscopy which makes this procedure attractive. Sonohysterography is less invasive procedure and does not require sedation or anaesthesia.

Sonohysterography has been mainly used to evaluate the endometrial cavity in patients with abnormal uterine bleeding (both pre and post menopausal). In a prospective study Laughhead and Stones (1997) used SH to evaluate patients with abnormal uterine bleeding. Eight patients had submucous myomas none of which were defined on ultrasound until after introduction of saline solution. Similarly saline infusion sonohysterography outlined polyps in 18 patients with thick endometrium on ultrasound. They found sonohysterography a procedure which aids in the management of abnormal uterine bleeding. Matas et al (1997) evaluated the usefulness of sonohysterography in the detection of abnormalities of uterine cavity in infertile patients compared to transvaginal ultrasonography, hysterosalpingography and finally hysteroscopy. Transvaginal sonography and hysterosalpingography were able to detect 36.3 and 72.7% of uterine pathology respectively. Sonohysterography was able to detect all the anomalies except for a single endometrial polyp (90.3%). No case of uterine synechiae was reported. On using sonohysterography for screening the uterine cavity in patients with recurrent pregnancy loss Keltz et al (1997) found it to be 100% sensitive and specific compared to hysteroscopy. Six cases of synechiae were reported. There are no large series reported on usefulness of sonohysterography in evaluating uterine synechiae. In our series ten out of 13 cases were diagnosed on SH there were 3 false positives. It was not possible to do this procedure in patients with extensive intrauterine adhesions as the cavity did not distend after saline

Table I: Findings on Hysteroscopy and sonohysterography (n=31)

	Polyp	Uterine anomaly	Synechiae	Total
Hysteroscopy	1	1	13	15
Sonohysterography	1	1	10	12

infusion. False positives results could also be reported if tags of endometrium are interpreted as septum or adhesions.

The sensitivity of SH in our study was 80% and specificity 75%, this is low when compared to other studies. This may be because of the learning curve of the authors. A larger study is required to assess the usefulness of SH in woman with amenorrhoea & hypomenorrhoea. Definitely it is an easy and well tolerated outpatient procedure. None of the patients developed febrile morbidity.

With increasing training and experience with endovaginal sonography, gynecologists will find SH a useful and accurate investigation for intrauterine pathologies and as an complementary technique to hysteroscopy.

References

1. Alatas C, Aksoy E, Akasser c, Yakın K, Aksoy S, Hayram M. Hum Reprod; 13(3): 487, 1997.
2. Coleman BG, Arge PH, Grumbach K, Menard MK, Mintz Mc, Allen KS, Arenson RL, Lamen KA. Radiology 168; 638: 1988.
3. Gillespie A, Nichols A. Aust NZ J Obstet Gynecol 34; 85: 1994.
4. Keltz D, online DI., Kim AH, Arici A. Fertil Steril 67, 670: 1997.
5. Laughead MK, Stones LM. Am J Obst Gyn 176: 1313: 1997.
6. Parsons AK, Lense JJ. J Clin Urol 21, 878: 1993.
7. Stumpf PG, March CM. Fertil Steril 30; 733: 1978.