

Diagnostic value of saline contrast sonohysterography and compare it with hysteroscopy and histopathology in Post Menopausal Bleeding

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I. Introduction

- Menopause is a natural physiological mechanism in a women's body wherein she stops menstruating. Post menopausal bleeding is generally regarded as an ominous and serious alarm of genital pathologies. Post Menopausal Bleeding is a vaginal bleeding following women last menstrual cycle, which is considered an episode of bleeding ≥ 12 months after her last period. It may be heavy bleeding, spotting, or just a normal menstruation. It constitutes 73% of all gynecological disorders in older women. It is common problem that affects 1 in 10 post menopausal female older than 55 year.
- In postmenopausal women the endometrial thickness is considerably less than premenopausal women. Endometrial thickness is directly related to endometrial pathology. common causes of post menopausal bleeding are atrophic endometritis /vaginitis (30%), exogenous estrogens(30%), endometrial cancer (15%), endometrial / cervical polyps(10%), endometrial hyperplasia (5%) etc.
- Risk factors includes smoking, caffeine, alcohol intake; family history of genital malignancies or breast malignancies; hyperestrogenic condition – exogenous estrogen(hrt, tamoxifen) and chronic anovulation(PCOS); family predisposition(the lynch syndrome type 1 –HPNCC);patient on chemotherapy especially alkylating agents; nulliparity, medical disorders-diabetes, hypertension,night fat diet.
- SIS is first described in 1981 by Nannini. Many terms used to describes the technique (echohysteroscopy, sonohysterosalphingography, hydrosonography and saline contrast sonohysterography) the term 'saline infusion sonography' coined in 1996 most clearly describe the technique.It is less invasive, cost effective and accurate in diagnosis . It is a diagnostic procedure that enhance endometrial imaging by using saline as a contrast media.
- Diagnostic hysteroscopy described by Edstrom and Fernstrom in 1970 has been shown to be superior to conventional dilatation and curettage in evaluating AUB
- Histopathology with hysteroscopy is gold standard of my study which requires skill, experience of operator equipments,infrastructure and is associated with anesthetics and other surgical complication, longer hospital stay and patient discomfort. Saline infusion sonohysterography an accurate ,well tolerated cheap, easy, requiring no anesthesia, less time consuming and relatively less invasive method with less morbidity.
- In this study we aimed to assess the role of saline contrast sonohysterography in comparison of hysteroscopy and histopathology in PMB

II. Material And Method

- This comparative cross-sectional study was conducted in department of obs and gynaecology at S.M.S. Medical college jaipur. An informed and written consent was taken from every patient after full explanation about study procedure.
- The subjects for study were selected from outpatients department of obs and gynaecology. 50 women who were fulfilling the criteria for PMB included.
- Selection criteria:
- **Inclusion criteria:** Age > 40 years
Bleeding after menopause
Informed consent
- **Exclusion criteria:** Menstruating women
Urinary tract bleeding
Bowel bleeding
women on Hormone replacement therapy
women with known contraindication to anesthesia or surgical intervention of Hysteroscopy
Carcinoma cervix
Pyometra
Trauma

- All 50 patients are first evaluated on the same day with transvaginal ultrasonography followed by saline contrast sonohysterography. Patients are identified and scheduled for hysteroscopy with biopsy under general anaesthesia in OT.
- Endometrial biopsy was taken in all cases and all specimens were immediately placed in 10% neutral buffered formalin solution and sent for histopathologic evaluation. The pathologists were blinded to the TVS and SIS findings. A final pathologic diagnosis was made by using the results of the surgical procedures and histopathologic analysis.
- The accuracy of TVS and SIS for detection of specific diseases was determined by correlating the result with final diagnosis. Sensitivity, Specificity, and positive and negative predictive value for predicting endometrial disease were then calculated.
- Data was entered in microsoft excel sheet and analysed statistically.

III. Observations

Table 1: Comparison of final diagnosis ie. Combined result of hysteroscopy and histopathology, with endometrial thickness (ET) as seen in saline infusion sonography (SIS)

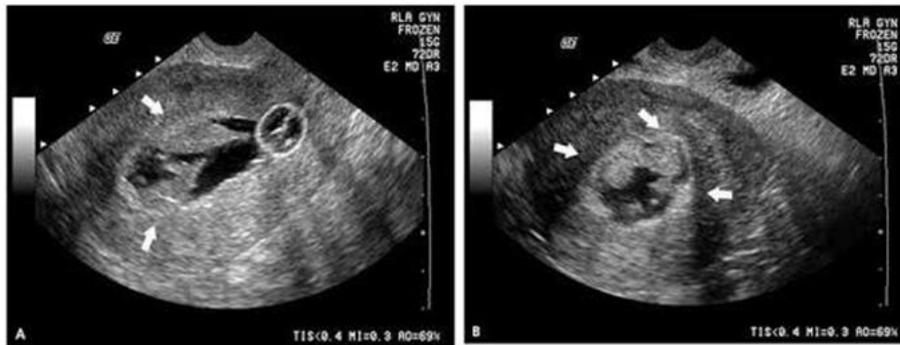
FINAL DIAGNOSIS	NO.PATIENTS	%	ENDOMETRIAL THICKNESS(ET.)mm (MEAN±SD)
E.Atrophy	25	50%	3.5±0.5
E.Proliferation	11	22%	7.0±1.0
E.Polyp	2	4%	8.5±0.5
Submucous fibroid	2	4%	9.0±2.0
E.Hyperplasia	10	20%	10±2.0
Total	50	100%	

An ET. Of 4mm on SIS was taken as the cut off in patients with PMB to assess the sensitivity, specificity, positive & negative predictive value of SIS (ET≤4mm,atrophy) The mean ET. For all women studied in my study was 6.2mm.

Saline infusion sonography demonstrating a 34 x 35 mm intramural fibroid distorting the cavity



Multiple Polyps



Multiple polyps in a 52-year-old woman with abnormal bleeding. Saline infusion sonohysterography shows multiple polypoid masses (arrows) outlined by the anechoic saline.

Table no 2: Diagnostic accuracy of various modalities for endometrial atrophy

	SENSITIVITY	SPECIFICITY	PPV	NPV
SIS	79.16%	100%	100%	83.87%
HYSTEROSCOPY	41.66%	100%	100%	65%
HISTOPATHOLOGY	83.33%	100%	100%	86.66%

It is evident that SIS shows better sensitivity(79.16%) and NPV (83.87%) than Hysteroscopy (41.66% and 65% respectively).

Table 3: Diagnostic accuracy of various modalities for endometrial hyperplasia

	SENSITIVITY	SPECIFICITY	PPV	NPV
SIS	60%	95%	75%	90.47%
HYSTEROSCOPY	60%	82.5%	46.15%	89.18%
HYSTOPATHOLOGY	90%	90%	69.23%	97.29%

It is evident that SIS shows better specificity(95%),positive (75%), and negative (90.47%) predictive value than Hysteroscopy(82.5%,46.15% and 89.18% respectively).

IV. Conclusion

- This study was done to find out diagnostic value of SIS in comparison to hysteroscopy and histopathology.
- It is evident that sensitivity, specificity, positive predictive value and negative predictive value of SIS for the diagnosis of endometrial atrophy and hyperplasia is higher than that of hysteroscopy and equivalent to histopathology.
- Sensitivity, specificity, positive predictive value and negative predictive value of SIS and hysteroscopy for the diagnosis of endometrial polyp and submucous fibroid was 100%,100%,100% and 100% respectively. Thus both are better than histopathology.
- Histopathology is better than SIS and hysteroscopy for the diagnosis of endometrial proliferation.

Thus finally rapid ,accurate, cost effective, without hospital stay and anesthesia, diagnosis will be made with SIS in AUB patients.