

# COMPARATIVE STUDY OF SALINE HYSTEROSONOGRAPHY WITH TRANSVAGINAL SONOGRAPHY IN EVALUATION OF MENORRHAGIA

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**ABSTRACT** : Abnormal uterine bleeding (AUB) is defined as any bleeding from genital tract that is deviation from the normal frequency, cyclicity, duration or quantity.

**AIM** : To assess the efficacy of saline hystero-graphy in the evaluation of Mennorrhagia.To evaluate the information derived from Vaginal ultrasonography

**METHODOLOGY** : All patients were in reproductive age group with complaints of abnormal uterine bleeding.Specific history was taken to rule out the systemic disorders responsible for abnormal uterine bleeding. Clinical examination ,Laboratory investigations were conducted. These patients underwent Transvaginal Sonography and Saline Infusion Sono-hystero-graphy.

**RESULTS** : Sensitivity of the Saline infusion sono hystero-graphy (SIS) in predicting the abnormal findings as compared to the transvaginal USG was 93.6% and the specificity was found to be 100%.

The positive predictive value was found to be 100% and the negative predictive value was 97.8%

**CONCLUSION** : Transvaginal sonography and saline infusion sono-hystero-graphy together is a very sensitive and specific technique for diagnosing any intrauterine abnormality in cases of menorrhagia. SIS outlines the uterine cavity, any myoma, polyp or endometrial abnormality, missed or transvaginal ultrasound alone is identified accurately with this additional technique . No complications, either related to insertion of catheter or any infection is associated. Therefore combined use of both these techniques play a significant role in the evaluation of menorrhagia

## **INTRODUCTION :**

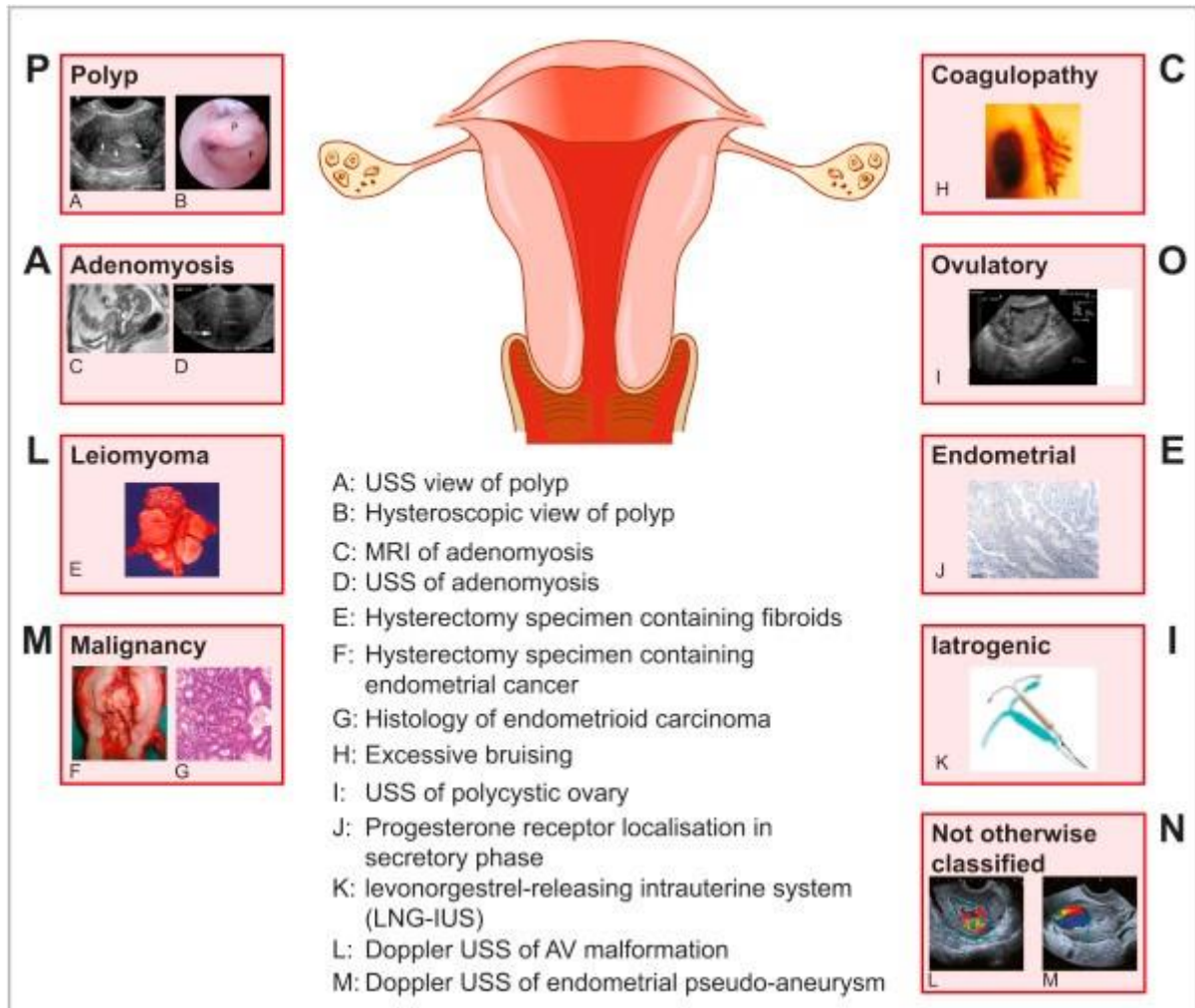
Abnormal uterine bleeding (AUB) is defined as any bleeding from genital tract that is deviation from the normal frequency, cyclicity, duration or quantity.

The normal menstrual cycle duration ranges between 24 and 35 days<sup>1</sup> , lasting from 4 to 6 days, with a blood loss between 30 and 80 mls.<sup>3</sup> Variations in anyone of these 4 parameters would cause abnormal uterine bleeding.

One of the most common reason to visit a gynaecologist is Abnormal uterine bleeding contributing to 33% of all admissions.<sup>4</sup>

The International Federation of Obstetrics and Gynecology (FIGO) used the PALM-COEIN acronym to categorize the etiologies of abnormal uterine bleeding. The initial part namely , PALM is for the structural issues. The second portion, COEIN, for the non-structural issues.

The N stands for "not otherwise classified"



The most effective diagnostic tool for various gynaecological disorders including the disease of ovaries, uterus, and endometrium is the Transvaginal ultrasonography (TVS) which plays a most important role in the diagnosis and evaluation of AUB.<sup>56</sup>

Saline infusion sonography (SIS) is one of the newer diagnostic technique where the uterine cavity will be distended by normal saline so that enabling the visualization of the endometrial surface.

**MATERIALS AND METHODS :**

All patients were in reproductive age group with complaints of abnormal uterine bleeding. Specific history was taken to rule out the systemic disorders responsible for abnormal uterine bleeding. Clinical examination, Laboratory investigations were conducted. These patients underwent Transvaginal Sonography and Saline Infusion Sonohysterography.

Inclusion criteria:

1. Patients with abnormal uterine bleeding in reproductive and perimenopausal age group.

Exclusion Criteria:

- Patients suspected to have endometrial carcinoma
- Patients with Pelvic Inflammatory disease
- Pregnant women
- Puberty menorrhagia

Patients with severe cervical stenosis due to previous history of cervical surgeries

Unmarried women

## RESULTS :

Table 1 :Distribution of study participants based on the age category in years(N=60)

Age category (in years)	Frequency (%)
21 -30	8(13.3)
31-40	24(40)
41-55	28(46.7)
Total	60(100)

The median  $\pm$  SD age in years of the study participants was  $39.5 \pm 7.2$ .

The participants were 46% belonging to 41 to 55 years of age , followed by 31 to 40 years and 13% by 21 to 30 years of age.

Table 2: Distribution of study participants based on TVS impressions (N=60)

TVS impressions	Frequency (%)
Normal uterus	13(21.6)
Bulky uterus	9(15)
Bulky with adenomyosis	2(3.3)
Bulky with multiple layer fibroid (submucosal, intramural, serosal )	3(5)
Adenomyotic uterus	4(6.6)
Normal uterus with PCOS	1(1.6)
Cervical fibroid	2(3.3)
Submucosal fibroid	1(1.6)
Endometrial polyp	4(6.6)
Intramural fibroid multiple	7(11.6)
Intramural fibroid Anterior wall	6(10)

Intramural fibroid Posterior wall	8(13.3)
Total	60(100)

21.6 percentage of the study population had normal uterus. Bulky uterus was seen among 15% of the study population. Intramural fibroid multiple was seen in 11.6%. Posterior intramural fibroid 13.3%, Endometrial polyp in 6.6% of the study population.

**Table 3:** Distribution of study participants based on SIS impressions (N=60)

<b>SIS impressions</b>	<b>Frequency (%)</b>
Normal uterus	12(20)
Bulky uterus	7(11.6)
Bulky with adenomyosis	2(3.3)
Bulky with multiple layer fibroid (submucosal, intramural, serosal )	3(5)
Adenomyotic uterus	4(6.6)
Normal uterus with PCOS	1(1.6)
Cervical fibroid	0
Submucosal fibroid	3(5)
Endometrial polyp	8(13.3)
Intramural fibroid multiple	9(15)
Intramural fibroid Anterior wall	5(8.3)
Intramural fibroid Posterior wall	6(10)
Total	60(100)

The SIS impression was found to normal for 20%. Bulky uterus was seen in 11.6%. The endometrial polyp was found in 13.3% of the study population. Among the fibroid, it was the submucosal fibroid which contributed to 5%, anterior wall intramural fibroid multiple 15%, posterior fibroid of 10% , anterior intramural fibroid to 8.3%

Table 4. Diagnostic accuracy of Transvaginal USG and Saline infusion sonohysterography (SIS)

Transvaginal USG	Saline infusion sonohysterography (SIS)		Total
	Normal	Abnormal	
<b>Normal</b>	15	0	15
<b>Row Percentage</b>	93.6%	0	25%
<b>Column percentage</b>	100%	0	100%
<b>Abnormal</b>	1	44	45
<b>Row Percentage</b>	6%	100%	75%
<b>Column percentage</b>	26.7%	73.3%	100%
<b>Total</b>	16	44	60

Sensitivity of the Saline infusion sono hysterography (SIS) in predicting the abnormal findings as compared to the transvaginal USG was 93.6% and the specificity was found to be 100%.

The positive predictive value was found to be 100% and the negative predictive value was 97.8%

#### **DISCUSSION :**

The current study had median  $\pm$  SD age in years of the study participants was  $39.5 \pm 7.2$ . The participants were 46% belonging to 41 to 55 years of age, followed by 31 to 40 years and 13% by 21 to 30 years of age.

In a study by Nallapati S (42) among 52 women showed that 52% of the study population belonged to 40-50 years of age, 25% in the age group of 30-40 years. Both our study and the comparative study had similar age group distribution.

The TVS impression was found to normal for 25%. Adenomyotic uterus was seen in 11%. Among the fibroid, it was the intramural fibroid which contributed to 6%, anterior wall intramural fibroid 5%, posterior and multiple intramural fibroid to 4%. The endometrial thickness by SIS was found to be between 7.1 and 9 for 30% study population. Between 4 and 7 mm was seen in 33% people. Only in 7% 10mm of thickness was present.

**CONCLUSION:** Transvaginal sonography and saline infusion sonohysterography together is a very sensitive and specific technique for diagnosing any intrauterine abnormality in cases of menorrhagia. SIS outlines the uterine cavity, any myoma, polyp or endometrial abnormality, missed or transvaginal ultrasound alone is identified accurately with this additional technique. No complications, either related to insertion of catheter or any infection is associated. Therefore combined use of both these techniques play a significant role in the evaluation of menorrhagia.

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