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ROLE OF HYSTEROSCOPY IN GYNAECOLOGICAL PROBLEMS

Jyotsna Harlalka Kamra¹, Mandeep Kaur²

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ABSTRACT: AIMS AND OBJECTIVES: The present study is carried out with following aims and objectives to diagnose intrauterine causes of various gynaecological problems, to correlate between hysteroscopic and clinical findings, to treat the pathology hysteroscopically, if possible and to put the patient on treatment depending upon the diagnosis made by hysteroscope. **MATERIAL AND METHODS:** The present study was carried out on 100 patients between the age group 18-60 years admitted in the Gynaecology ward of Rajindra Hospital, Patiala. The present study was carried out to diagnose the intrauterine causes of various gynaecological problems like menstrual irregularities, infertility and post-menopausal bleeding. **OBSERVATIONS:** In the present study, majority of the patients (52%) were in the menstrual irregularities group. Normal cavity was found in 53.8% of the patients with menstrual irregularities and 52.7% of cases of infertility. Majority of the patients of post-menopausal bleeding had abnormal cavity (66.7%). Significantly more abnormal findings were diagnosed in the postmenopausal bleeding group (66.7%) as compared with pre-menopausal menstrual irregularities group (46.2%). On correlating clinical and hysteroscopic findings, the present study shows a higher accuracy of positive predictive value of hysteroscopy (93%). 49 out of 100 patients (49%) had positive findings making this investigation a necessary tool in the armamentarium of a modern gynaecologist. **CONCLUSION:** Hysteroscopy came out to be a better procedure than conventional clinical methods. It added a new dimension in the management of patients with menstrual irregularities, infertility and postmenopausal bleeding, increasing the accuracy of diagnosis and serving as an adjunct in the treatment of intrauterine problems.

KEYWORDS: Hysteroscopy, menstrual irregularities, infertility and post-menopausal bleeding.

INTRODUCTION: Hysteroscopy is an endoscopic method for visualization of the uterine cavity. Before the introduction of hysteroscopy, gynaecologists could use only abdominal or vaginal ultrasonography and fractional D&C to evaluate the condition of the uterine cavity (Chang, 2007). Hysteroscopy permits direct visualization of the cervical canal and uterine cavity, enabling observation of intra uterine pathologies. It is now considered an accurate 'gold standard' in uterine cavity evaluation.

Hysteroscopy is a procedure that has diagnostic and therapeutic indications. Diagnostic hysteroscopy can be utilized as an office procedure although some surgical maneuvers are also feasible such as removal of an occult intrauterine device, sterilization, lysis of mild intrauterine adhesions and polypectomy (Sieglar and Valle, 1988). The present study was conducted to study the role of hysteroscopy in various gynaecological problems.

AIMS AND OBJECTIVES: The present study was carried out with the following aims and objectives:

- To diagnose intrauterine causes of various gynaecological problems.
- To correlate between hysteroscopic and clinical findings.

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- To treat the pathology hysteroscopically, if possible.
- To put the patient on treatment depending upon the diagnosis made by hysteroscope.

MATERIAL AND METHODS: The present study was carried out on 100 patients between the age group 18-60 years admitted in the Gynaecology ward of Rajindra Hospital, Patiala. The patients were counseled for the procedure, consent was taken and all possible complications were explained to the patient.

The following patients were included in the study group:

1. Menstrual irregularity.
2. Infertility.
3. Post-menopausal bleeding.

The following patients were excluded from the study group:

1. Infection.
2. Pregnancy.
3. Cardiorespiratory diseases.
4. Cervical carcinoma.

INSTRUMENTS AND MATERIAL USED:

1. **Hysteroscope and its sheath:** The hysteroscope used in the present study was a diagnostic 4 mm rigid Karl Storz hysteroscope with a 30° oblique aperture view with a 5mm sheath. A 7 mm operative hysteroscope was used whenever required.
2. **For illumination**
 - I. Halogen light source.
 - II. Fibre optic light cable.
3. **For distending the uterine cavity:** Normal saline
4. **For operative purposes:** scissors for hysteroscopic guided cutting of tissue.

METHOD OF STUDY:

1. Consent-After explaining the technique to the patients, an informed consent was taken from all the patients.
2. Complete history-A complete history including age, parity, menstrual history, obstetric history, and personal history was taken according to proforma. Any associated diseases like hypertension, diabetes mellitus, tuberculosis and bronchial asthma were also enquired for.
3. Examination-Examination included general physical examination of the patient, systemic examination of cardiovascular and respiratory system. This was followed by examination of external genitalia and a careful bimanual pelvic examination to find the size, direction, consistency and mobility of the uterus and any pathology in the fornices. Routine investigations like hemoglobin, bleeding time, clotting time and urine complete examination were done in all the cases. Depending upon the individual case requirement, special investigations were done.
4. Preparation-Patients were kept fasting overnight on the day the hysteroscopy was to be done. All the cases were done in the operation theatre under all aseptic conditions.

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5. Anaesthesia-General anaesthesia was used for all patients.
6. Steps of procedure-The patient was made to pass urine before coming to the theatre. She was then made to lie on the operating table and was put in dorsal lithotomy position and general anaesthesia was administered.

The vulval area, perineum and vagina were cleaned with antiseptic solution and draped. A pre-operative pelvic examination was carried out to ascertain the size and position of the uterus.

A Sim's speculum was used to retract the posterior vaginal wall. The anterior lip of cervix was held with a tenaculum or volsellum. A uterine sound was used to measure the length and direction of the uterine cavity. Cervix was dilated if required with metal dilators to same diameter as the outer diameter of outer sheath of hysteroscope.

The hysteroscope was then introduced through the canal and after switching on the source of light, the cavity was distended with normal saline. Exploration of the cavity was begun at the level of the internal os and by advancing the hysteroscope and rotating the instrument the entire uterine cavity was observed in an orderly manner. Both tubal ostia were visualized and any obvious pathology in the cavity was detected. When the examination was completed, and as the hysteroscope was withdrawn, the endocervical canal was explored.

The hysteroscopic findings were compared with the clinical findings to find the correlation between the two and the patient put on treatment accordingly.

OBSERVATIONS:

Age groups (in years)	No. of cases	% age
18-30	39	39
31-40	29	29
41-50	21	21
51-60	11	11
Total	100	100
Range	18-60	
Mean±SD	36.76±10.94	

Table 1: Distribution of patients according to age

According to the above table, the maximum number of patients (39%) was in the age group of 18-30 years and minimum number of patients (11%) was in the age group of 51-60 years. The mean age was 36.76±10.94 years.

Complaints	No. of cases	%age
Menstrual irregularities	52	52
Infertility	36	36
Post-menopausal bleeding	12	12
Total	100	100

Table 2 : Distribution of patients according to presenting complaints

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As shown in table 2 menstrual irregularities were the most common presenting complaints with 52 cases (52%) followed by infertility in 36 cases (36%) while post-menopausal bleeding accounted for 12 cases (12%).

Findings	No. of cases	%age
Normal cavity	28	53.8
Endometrial hyperplasia	11	21.2
Endometrial polyp	6	11.5
Atrophic endometrium	3	5.8
Submucous leiomyoma	3	5.8
Intrauterine adhesions	1	1.9
Total	52	100

Table 3: Hysteroscopic findings in patients with menstrual irregularities (n=52)

As shown in table 3, out of 52 patients of menstrual irregularities, majority of the patients (53.8%) had a normal uterine cavity. The commonest abnormality detected was endometrial hyperplasia (21.2%). Endometrial polyps accounted for 11.5% of cases while sub mucous leiomyoma and atrophic endometrium were found in 5.8% each. Intra uterine adhesions were seen in 1.9% cases. On statistical analysis the distribution of findings skewed toward normal findings in patients with menstrual irregularities.

Findings	No. of cases	%age
Normal cavity	19	52.7
Intrauterine adhesions	7	19.4
Endometrial polyp	4	11.1
Submucous fibroid	2	5.6
Septum	2	5.6
Petechiae	1	2.8
Irregular cavity	1	2.8
Total	36	100

Table 4 : Hysteroscopic findings in patients with infertility (n=36)

As shown in the above table, 52.7% of infertile patients had normal cavity while 47.3% patients had abnormal cavity. Out of 47.3% patients with abnormal cavity the commonest abnormal finding was intrauterine adhesions (19.4%) followed by endometrial polyp (11.1%). Submucous fibroid and septum were seen in 2 (5.6%) patients each while petechiae and irregular cavity were found in 1 (2.8%) patient each.

Findings	No. of cases	%age
Normal cavity	4	33.33
Endometrial polyp	5	41.66
Atrophic endometrium	1	8.33
Submucous leiomyoma	1	8.33

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Suspected endometrial malignancy	1	8.33
Total	12	100

Table 5: Hysteroscopic findings in patients with post-menopausal bleeding (n=12)

In the 12 cases of post-menopausal bleeding, majority of the patients (66.7%) had abnormal uterine cavity. Endometrial polyp (41.6%) was the commonest abnormality detected followed by sub mucous fibroid, atrophic endometrium and suspected endometrial malignancy in one patient each (8.3%). On statistical analysis the distribution tended towards abnormal findings in patients with post-menopausal bleeding.

Findings	AUB Pre-menopausal (% age)	AUB Post-menopausal (% age)	't' value	'p' value	Sig.
Normal cavity	53.8	33.33	4.85	0.01	HS
Endometrial hyperplasia	21.2	-	11.13	0.01	HS
Endometrial polyp	11.5	41.66	13.51	0.01	HS
Atrophic endometrium	5.8	8.33	2.99	0.05	HS
Submucous leiomyoma	5.8	8.33	2.99	0.05	HS
Intrauterine adhesions	1.9	-	3.13	0.01	HS
Suspected malignancy	-	8.33	3.97	0.01	HS

Table 6 : Findings in pre and post-menopausal patients with abnormal uterine bleeding (Aub)

On statistically comparing pre and post-menopausal patients with abnormal uterine bleeding, significantly more abnormal findings were diagnosed in the post-menopausal group. In the case of abnormal findings there were significantly more cases of polyps in the post-menopausal group ($p=0.01$) while endometrial hyperplasia was more significantly found in the premenopausal group.

Clinical Findings	No. of cases	Hysteroscopic Findings	
		Normal (%)	Abnormal (%)
Menstrual irregularities	52	28 (53.8%)	24 (46.2%)
Infertility	36	19 (52.7%)	17 (47.3%)
Post-menopausal bleeding	12	4 (33.3%)	8 (66.7%)
Total	100	51 (51%)	49 (49%)

Table 7 : Clinical vs Hysteroscopic findings

Above table shows that hysteroscopy has a positive predictive value of 93% and negative predictive value of 7%.

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Clinical Findings	Hysteroscopic Procedures		D&C	TAH
	Adhesiolysis	Polypectomy		
Menstrual irregularities	-	1	3	16
Infertility	4	2	1	-
Post-menopausal bleeding	-	-	-	12

Table 8 : Operative Procedures

Table 8 shows the operative procedures done. Out of 52 patients with menstrual irregularities, one underwent polypectomy, 3 underwent D&C while 16 underwent total abdominal hysterectomy.

Out of 36 patients of infertility, 4 underwent adhesiolysis under vision using operative hysteroscopy scissors, 2 underwent polypectomy and one underwent D & C.

Of the 12 patients of post-menopausal bleeding all patients underwent total abdominal hysterectomy with bilateral salpingoophorectomy.

Hysteroscopic Findings	No. of cases	Hysterectomies Performed	Hysteroscopic Findings confirmed
Endometrial hyperplasia	11	7	6
Polyp	11	7	7
Submucous Fibroid	4	3	3
Suspected Malignancy	1	1	1

Table 9: Laparotomy findings

Thus statistically, hysteroscopy was found to have a positive predictive value of 98% and a negative predictive value of 2%.

DISCUSSION: Hysteroscopy has increasingly attracted the interests of gynaecologists all over the world and its use as a clinical procedure has increased proportionately (Alwani et al, 1983). Thanks to improvements in both the technology and the technique, hysteroscopy has become a simple procedure which also shows excellent capacity in terms of diagnostic and surgical accuracy.

The present study was carried out to diagnose the intrauterine causes of various gynaecological problems like menstrual irregularities, infertility and post-menopausal bleeding; to correlate between the clinical and hysteroscopic findings; to treat the pathology hysteroscopically if possible and to put the patient on treatment accordingly. Clinical examination followed by hysteroscopy was conducted and the findings were analysed and compared.

In the present study, majority of the patients (52%) were in the menstrual irregularities group. This is comparable with the study of Alwani et al (1983), Parasnis and Parulekar et al (1992) and Shveiky et al (2007) in which majority of the patients came with complaints of abnormal uterine bleeding.

Hence the main indication for hysteroscopy is menstrual irregularities in the present study as well as studies done by other workers. Abnormal uterine bleeding may occur from a local cause

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within the uterine cavity or due to extrinsic causes such as hormonal disturbances, which affect the endometrium and cause menstrual irregularities. Local conditions of the endometrial cavity can be assessed directly and quickly by hysteroscopy. Submucous fibroids, polyps or malignant growths may be seen and steps taken to deal with the problem. This is especially useful when polyp/fibroid is small because it can be missed on curettage.

Cases of infertility formed the second commonest indication (36%) which is comparable with the study of Shveiky et al (2007) and Alwani et al (1983) but is different from that of de Wit et al (2003) in which patients of infertility formed the smallest group (10.1%) and from that of Kapur and Biswas (2005) in which infertility patients formed the largest group (52.17%).

In the present study 12% of the patients belonged to the post-menopausal bleeding group which is consistent with the studies of de Wit et al (2003) and Shveiky (2007) while it differs from the studies of Parasnis and Parulekar (1992) and Kapur and Biswas (2005).

Hysteroscopy in menstrual irregularities group- In the present study abnormal uterine cavity was found in 46.2% of patients with menstrual irregularities which is comparable with the studies conducted by Panda et al (1999) 53.4%, and Kapur and Biswas (2005) 43.5%, while the study differs from the results of the studies by Bhattacharya (1992), Zlatkov et al (2006 and 2007), all of whom reported abnormal findings in a higher percentage of cases i.e 66%, 63.4% and 62.5% respectively.

Negative hysteroscopy is of great value, for it enables the gynaecologist to prescribe or continue hormones with impunity and thus avoid major surgery.

Hysteroscopy in Infertility- Abnormal cavity was found in 47.3% cases with infertility which is comparable with the studies of Siegler et al (1976) and Favez et al (1987) with 45.2% abnormalities each and is also consistent with the study by Kapur and Biswas (2005) with 50.9% abnormal cavity. However it differs from the study of Nawroth et al (2003) in which a very low %age of abnormal cavity was detected i.e.10%

Hysteroscopy in post-menopausal bleeding- Abnormal uterine cavity was detected in 66.7% of cases. This is comparable which the studies of Siegler et al (1976), Kremer et al (1998) and de Wit et al (2003) in which abnormal uterine cavity was detected in 63.6%, 69.9% and 67.2% of cases respectively.

OPERATIVE PROCEDURES: Out of 52 patients with menstrual irregularities, polypectomy was done in one patient, dilatation and curettage done in 3 patients while total abdominal hysterectomy was done in 16 patients. Hysterectomy was done in 7 patients with endometrial hyperplasia and the hysteroscopic findings of hyperplasia were confirmed. 7 patients (Both premenopausal and post-menopausal) with polyps on hysteroscopy underwent hysterectomy and the findings of hysteroscopy were confirmed in all these patients.

TAH was done in 5 cases of menstrual irregularities with normal hysteroscopic findings because in those cases, the patients had completed their family and for them medical therapy with its instructions of regular follow up, seemed very cumbersome. So they insisted on TAH.

Hysterectomy was done in all the patients with post-menopausal bleeding. In one patient necrotic growth was seen on hysteroscopy suggestive of malignancy and TAH with BSO was done. On hysterectomy findings of necrotic malignant growth were confirmed. In the rest of the cases (With polyp, endometrial atrophy and fibroid) hysterectomy was done because in our set up, in which most of the patients are uneducated and belong to lower socio economic strata, follow up is very poor.

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Moreover all these patients had completed their families and were in the older age group. So considering the risk of malignancy in this age group TAH with BSO was done.

In patients with infertility, hysteroscopic adhesiolysis was performed in 4 patients and 2 underwent polypectomy.

The rate of operative hysteroscopy in our study is less because our hysteroscope has very few operative attachments.

COMPLICATIONS: In the present study post procedural pain was present in 12% of cases and bleeding per vaginum in 2% of cases. Pain was mild and relieved by analgesics. Bleeding per vaginum occurred in cases where polypectomy had been done and was slight in amount and relieved without any medication. There were no cases of uterine perforation in the present study.

SUMMARY AND CONCLUSIONS: The aim of the study was to evaluate the role of hysteroscopy in gynaecological practice. The following conclusions were made:

- The age of patients varied from 18-60 years with a mean age of 36.76 ± 10.94 years.
- Normal cavity was found in majority (53.8%) of the patients with menstrual irregularities. Amongst the remaining, the commonest abnormality found in 21.2% of the patients was endometrial hyperplasia followed by endometrial polyp in 11.5%, atrophic endometrium and submucous fibroid in 5.8% each and intra uterine adhesions in 1.9%.
- Normal cavity was found in 52.7% of cases of infertility. Intra uterine adhesions were seen in 19.4%, endometrial polyp in 11.1%, submucous fibroid and septum in 5.6% each and petechiae and irregular cavity in 2.8% each.
- Majority of the patients of post-menopausal bleeding had abnormal cavity (66.7%). Endometrial polyps were found in 41.66%, atrophic endometrium, submucous leiomyoma and endometrial malignancy in 8.33% cases each.
- Significantly more abnormal findings were diagnosed in the postmenopausal bleeding group (66.7%) as compared with pre-menopausal menstrual irregularities group (46.2%).
- Postmenopausal bleeding patients had maximum number of cases with endometrial polyp (41.66%) while polyps were present in only 11.5% of patients with premenopausal bleeding.
- There was no major complication in the study group due to procedure/anaesthesia.
- Operative procedures via hysteroscope were performed in 38.8% of the patients with adhesions and polyps.
- Laparotomy was performed in 13.4% of the patients of menstrual irregularities and in all patients of post-menopausal bleeding.
- On correlating clinical and hysteroscopic finding, the present study shows a higher accuracy of positive predictive value of hysteroscopy (93%).
- 49 out of 100 patients (49%) had positive findings making this investigation a necessary tool in the armamentarium of a modern gynaecologist.

Hysteroscopy helps in making an appropriate choice between medical and surgical management in patients with menstrual irregularities. Detection of submucous fibroids and polyps indicates primary surgical management avoiding unsuccessful hormonal treatment and at times hysterectomy or laparotomy in young women.

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The high frequency of abnormalities in cases of infertility has led to the increasing application of hysteroscopy in the evaluation of infertility in clinical practice.

An analysis of the causes of postmenopausal bleeding shows that apart from endometrial malignancy, there are several other causes like polyps, fibroid, endometrial hyperplasia and atrophic endometrium. Hysteroscopy is found to be reliable as a diagnostic tool in these cases of postmenopausal bleeding.

Hysteroscopy came out to be a better procedure than conventional clinical methods. It added a new dimension in the management of patients with menstrual irregularities, infertility and postmenopausal bleeding, increasing the accuracy of diagnosis and serving as an adjunct in the treatment of intrauterine problems.

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AUTHORS:

1. Jyotsna Harlalka Kamra
2. Mandeep Kaur

PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of Obstetrics & Gynaecology, Maharaja Agrasen Medical College, Agroha, Hisar.
2. Medical Officer, Department of Obstetrics & Gynaecology, Punjab Civil Medical Services -1, Community Health Centre, Shahkot District, Jalandhar, Panjab.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Jyotsna Harlalka Kamra
H. No. 2420, Sec-14, Hisar,
Haryana-125001
E-mail: jyotsnakamra@gmail.com

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