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Original Article

DIAGNOSTIC HYSTEROSCOPY IN ABNORMAL UTERINE BLEEDING & IT'S HISTOPATHOLOGIC CORRELATION: OUR EXPERIENCE

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Abstract :

Aims & objectives: 1) To study the accuracy of hysteroscopy in evaluation of abnormal uterine bleeding in perimenopausal and postmenopausal women. 2) To correlate hysteroscopic findings with histopathologic results.

Materials and methods: It is a retrospective study done in the department of OBG at K.S.Hegde Medical Academy, Mangalore. All patients who underwent diagnostic hysteroscopy for abnormal uterine bleeding in the past 6 years were included in this study. Patients underwent clinical and sonographical evaluation. Following hysteroscopic evaluation, patients had undergone dilatation and curettage and endometrial curetting were sent for histopathological examination (HPE). The correlation between findings on hysteroscopy & HPE were tabulated.

Results: On hysteroscopy, endometrium was classified as suggestive of normal, hyperplasia, atrophic, polyp, fibroid, cancer. Histopathological diagnosis was taken as gold standard to determine the efficacy of hysteroscopy in diagnosing endometrial pathologies. Out of 175 patients, 108 patients were diagnosed to have endometrial hyperplasia on hysteroscopy, however only 53 confirmed to have on histopathologically. Similarly 25 patients were said to have normal findings on hysteroscopy but by histopathology 85 were having normal endometrium. Hysteroscopy was highly specific for diagnosis of polyp (95.9%), cancer (100.0%), and atrophy (96. 9%), normal endometrium (92.2%) but low specificity for diagnosing hyperplasia (48.4%). The sensitivity of hysteroscopy in diagnosing polyp and endometrial hyperplasia were 100% and 84.9% respectively but it was low in case of cancer (16.7%) and normal endometrium (21.2%).

Conclusion: Hysteroscopy is a highly accurate diagnostic tool in diagnosing intrauterine lesions like endometrial polyp and submucous fibroid. In fact, it was also found to be highly specific in conditions like endometrial cancer, polyp, atrophic and normal endometrium.

Keywords : hysteroscopy, abnormal uterine bleeding, dilatation & curettage

Introduction :

Abnormal uterine bleeding is the commonest complaint which is noticed in a gynecology out patient setting. Goldstein et al[1] has defined abnormal uterine bleeding as "patients having either metrorraghia defined as vaginal bleeding separated from expected menses or menorraghia defined as patient's subjective complaints of either increased duration or increased volume of flow or both. Patients usually present themselves to the gynecologist when there is variation in the normal cyclical pattern. The variation could be due to physiological, hormonal change or may be due to benign or malignant condition. Age specific association of endometrial lesions are known to occur[2].Hence, this needs a proper evaluation. Hysteroscopy guided biopsy is the recommended diagnostic test in the present day. The traditional blind dilatation and curettage can miss focal intrauterine lesions like polyp, sub mucous fibroid and cancer. The other diagnostic tests involve transvaginal sonography (TVS) and saline infusion sonography (SIS)[3]. Hysteroscopy illuminates the darkness of the uterine cavity. So hysteroscopy is considered as a gold standard in

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the evaluation of abnormal uterine bleeding in perimenopausal and postmenopausal age group.

Aims and Objectives :

1) To study the accuracy of hysteroscopy in evaluation of abnormal uterine bleeding in perimenopausal and postmenopausal women.
2) To correlate hysteroscopic findings with histopathologic results.

Materials and methods :

It is a retrospective study of 175 cases who have attended the department of OBG at K.S.Hegde Medical Academy, Mangalore in the last 6 years with complaints of abnormal uterine bleeding. All patient's history and clinical examination findings were noted. All patients had an ultrasonography done. Those patients who underwent diagnostic hysteroscopy followed by dilatation and curettage were selected for this study. There hysteroscopy findings and histopathological reports were analyzed.

Patients who underwent hysteroscopy for infertility were excluded. Patients who had an obvious cause of bleeding from cervix or vagina were also excluded. Patients who were on anticoagulant therapy, hormone replacement treatment and who were known case of bleeding dyscrasias were excluded.

Records of hysteroscopy findings were classified as normal, hyperplasia, atrophy, polyp, fibroid, cancer. Histopathological diagnosis was taken as gold standard to determine accuracy of hysteroscopy findings for diagnosing endometrial abnormalities. Their sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) were assessed. Data collected was statistically compiled using SPSS 20 version.

Results :

In our study, 29 cases (16.6%) were postmenopausal and remaining 146 cases (83.4%) were perimenopausal. Women in age group of 41-50 years formed a major group of 95 cases (54.3%). Majority of the patients were parous, that is 159 (90.9%). Among the study group, 27 cases (15.4%) had co-morbid medical disorders.11.4% were hypertensive, 1.7% were diabetic, whereas 2.3% patients had both diabetes and hypertension and 0.6% were hypothyroid. Only 2 patients out 175 had a family history of breast cancer. Among 12 patients who had endometrial cancer on histopathology, 7 patients had associated medical co-morbidities (Table 1).

The commonest symptom for hysteroscopy was menorraghia about 87(49.7%) followed by postmenopausal bleeding 29(16.6%). Other indications for hysteroscopy were irregular cycles, polymenorraghia, continuous bleeding per vaginum and dysmenorrhoea (Table 2). All hysteroscopy were done in operation theatre under general anesthesia. Normal saline was used as the distending medium for diagnostic hysteroscopy. For all patients, endometrial tissue was sent for histopathological examination.

The hysteroscopy findings were tabulated as normal, hyperplasia, atrophy, polyp, fibroid and cancer (Table 3). 53 cases of hyperplasia were diagnosed on histopathology, but 108 cases were suspected as hyperplasia on hysteroscopy. Out 53 cases of hyperplasia on histopathology, 35 cases were simple hyperplasia without atypia, 10 cases were simple hyperplasia with atypia, 5 cases of complex hyperplasia without atypia and 3 cases of complex hyperplasia with atypia. Out of 85 cases of normal endometrium, only 25 cases were diagnosed as normal on hysteroscopy. Out of 16 cases which were diagnosed as atrophy on hysteroscopy, 5 were confirmed as atrophic on histopathological examination (HPE) & 6 were insufficient endometrium obtained again probably due to atrophic endometrium (Table 4).

13 cases of polyp were seen on hysteroscopy, whereas on HPE, 6 cases were confirmed to be polyp. In case of detection of submucous fibroid, 10 cases were diagnosed on hysteroscopy. Since none underwent resection of the fibroid at the same sitting it could not be confirmed by HPE. Of 12 cases of endometrial cancer diagnosed on HPE, 3 cases were suspected as cancerous growth on hysteroscopy, 8 appeared hyperplasia & 1 was diagnosed as submucous fibroid on hysteroscopy.

The correlation between hysteroscopy findings and histopathological examination of endometrial curetting were studied (Table 5). Of those 108 patients with hyperplasia on hysteroscopy, 45 patients (41.6%) had hyperplasia, 52 patients (48.1%) had normal endometrium and 8 patients (7.4%) had cancer. Of 25 patients with normal hysteroscopies, 18 (72%) had normal endometrium and 4 patients (16%) had hyperplasia on hispathological examination. On hysteroscopy 16 patients were suspected to have atrophic endometrium, 5 were confirmed , 6 turned out to be insufficient endometrium which is probably because of atrophy.13 patients were diagnosed to have polyp on hysteroscopy, however 6 (46.1%) were confirmed to have polyp on curettage and 2 (15.3%) each were normal and hyperplastic. Submucous fibroid was diagnosed in 10 patients on hysteroscopy but none were confirmed on curettage. Of the 12 patients (6.9%) with histological diagnosis of cancer, the hysteroscopic study showed cancer in 3 patients (25%), hyperplasia in 8 patients (66.6%) and submucous fibroid as in 1 patient (8.3%). However, in 3 patients where hysteroscopic impression was cancer, all 3 were confirmed as cancer on histology too.

Hysteroscopy was highly specific in diagnosing cancer however sensitivity was low. The sensitivity of hysteroscopy in diagnosing cancer was 16.7%, specificity was 100%, positive predictive value (PPV) being 100% and negative predictive value (NPV) was 94.2%. Hysteroscopy was found to be highly specific in diagnosing normal endometrium (92.2%), atrophy (96.9%), polyp (95.9%) and cancer (100%). It was found to have low specificity in diagnosing hyperplasia (48.4%). The sensitivity of hysteroscopy in detecting normal endometrium and cancer were 21.2% and 16.7% respectively which is extremely low. The sensitivity in diagnosing polyp was found to be 100% and hyperplasia was 84.9%. Overall, hysteroscopy was highly sensitive and specific in detecting polyp. Following table shows the sensitivity, specificity, PPV and NPV of all the parameters except submucous fibroid as none were confirmed by histological examination (Table 6).

Discussion :

In gynecology, the most frequently encountered problem is abnormal uterine bleeding. Abnormal uterine bleeding contributes to 30-40% of all gynecological problems.

In our study, 16.6% had postmenopausal bleeding & the rest had other menstrual abnormalities as an indication for hysteroscopy. Among which, menorraghia (49.7%) being the commonest complaint which was found similar to study done in Bahrain[4] where menorraghia was seen in 62% patients & postmenopausal bleeding in 14%. The age group ranged from 30 to 75years in our study. We did not include hysteroscopy done for infertility purpose. So in our study, the perimenopausal age group of 41 to 50 years formed the major bulk (54.3%). Most of the study group patients were multiparous (90.9%).

Most studies have shown hysteroscopy was more sensitive in diagnosing uterine abnormalities like polyps & submucous fibroid[4, 5]. Even in our study, sensitivity in diagnosing polyp on hysteroscopy was 100% but submucous fibroid could not be assessed as therapeutic hysteroscopy was not attempted in the same sitting. On the other hand, hysteroscopy had a low sensitivity in diagnosing cancer (16.7%) and normal endometrium (21.2%). This is comparable with other study findings. Like in Sameera et al's study[4], sensitivity of hysteroscopy in diagnosing cancer was 40% and Ben Yehoda et al's study[6] was 20%. Torrjeon R et al reported hysteroscopy was 100% sensitive, with specificity 99.4% and global diagnostic precision 99.5% in diagnosing adenocarcinoma in premenopausal patients[7]. On the contrary, sensitivity of diagnosing endometrial hyperplasia was high (84.9%) in our study compared to 30% and 52% in Sameera and Ben Yehoda's reports. Hysteroscopy performed alone has reported high false positive rate for detecting endometrial hyperplasia. So hysteroscopy targeted biopsy or dilatation and curettage has been advisable[8]. Hysteroscopy showed high PPV (100%) and NPV (94.2%) in regard to cancer detection in our study. Even in postmenopausal bleeding, hysteroscopy has been reported to have an overall sensitivity of 97% and specificity of 98.6% in detecting

endometrial pathologies[9].

A similar study[10] done in medical institute in Maharashtra concluded that hysteroscopy affords a more accurate diagnosis than dilatation and curettage for intrauterine pedunculated pathologies. But for hyperplasia and carcinoma endometrium, histopathology is 100% diagnostic. Diagnosis of endometrial atrophy is best made by hysteroscopy.

The limitations of this study were the hysteroscopy procedure was carried out by many gynecologists with different level of experience (junior resident to professor) and not by a consistent hysteroscopist, secondly it was a retrospective study and thirdly the curettage was performed after the hysteroscopy. Well, it is true you need to have a hysterectomy specimen for an accurate diagnosis but that is not feasible in all the cases. In our study, out of 175 cases, only 20 underwent hysterectomy at a later date. At last, the number of cases obtained in this study to analyze was limited for an accurate interpretation.

Conclusion :

Hysteroscopy was more sensitive in detecting endometrial polyp, submucous fibroid and endometrial hyperplasia but it was found less sensitive than curettage in detecting cancer and normal endometrium. On the other hand, hysteroscopy was highly specific in conditions like endometrial cancer, polyp, atrophic and normal endometrium. Hysteroscopy guided biopsy and histopathology compliment each other in evaluation of a patient with abnormal uterine bleeding for accurate diagnosis and further treatment.

Table 1: Demographic parameters of patients

Parameters		No. of patients	Percentage
Age (years)	31-40	53	30.3
	41-50	95	54.3
	51-60	18	10.3
	>60	09	5.1
	Total	175	100
Parity	Nulliparous	16	9.1
	Multiparous	159	90.9
	Total	175	100
Menopausal status	Not menopause	146	83.4
	Menopause	29	16.6
	Total	175	100
Family H/O cancer	Present	02	1.1
	Absent	173	98.9
	Total	175	100
Medical co-morbidity	Hypertension (HT)	20	11.4
	Diabetes mellitus (DM)	03	1.7
	HT + DM	04	2.3
	Hypothyroid	01	0.6
	Total	175	100

Table 2: Indication for hysteroscopy

Complaint	Number of patients	Percentage
Menorraghia	87	49.7
Postmenopausal bleeding	29	16.6
Irregular cycles	23	13.1
Polymenorraghia	19	10.9
Continuous bleeding P/V	14	8.0
Dysmenorrhoea	3	1.7
Total	175	100

Table 3: Hysteroscopy findings

Hysteroscopy finding	Number of patients	Percentage
Hyperplasia	108	61.7
Normal	25	14.3
Atrophy	16	9.1
Polyp	13	7.4
Submucous fibroid	10	5.7
Cancer	03	1.7
Total	175	100

Table 4: Histopathological examination of endometrial curetting

Histopathological finding	Number of patients	Percentage
Hyperplasia	53	12.3
Normal	85	48.6
Atrophy	07	4.0
Insufficient	09	5.1
Polyp	06	3.4
Cancer	12	6.9
Pill endometrium	03	1.7
Total	175	100

Table 5: Comparison of hysteroscopy findings and histopathological examination of endometrial curetting

Hysteroscopy	Histopathology							Total
	Normal	Hyperplasia	Atrophy	Polyp	Cancer	Insufficient	Pill	
Hyperplasia	52	45	00	00	08	00	03	108
Normal	18	04	01	00	00	02	00	25
Atrophy	04	01	05	00	00	06	00	16
Polyp	03	02	01	06	00	01	00	13
Fibroid	08	01	00	00	01	00	00	10
Cancer	00	00	00	00	03	00	00	03
Total	85	53	07	06	12	09	03	175

Table 6: Shows sensitivity, specificity, PPV and NPV of hysteroscopy finding

Parameter	Sensitivity (%)	Specificity (%)	PPV (%)	NPV (%)
Hyperplasia	84.9	48.4	41.7	88.1
Normal	21.2	92.2	72.0	55.3
Atrophy	68.8	96.9	68.8	96.9
Polyp	100.0	95.9	46.2	100.0
Cancer	16.7	100.0	100.0	94.2

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