CLINICAL USEFULNESS OF PIPELLE ENDOMETRIAL SAMPLING

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ABSTRACT

The most study was conducted to determine the clinical usefulness of Pipelle endometrial sampling with regards to sample adequacy and patient acceptability. It was prospective observational single centre study conducted at Combined Military Hospital Peshawar from Dec 2001 to Dec 2002 on 350 patients undergoing endometrial biopsy.

In this cross- sectional study, the study group comprised ladies between 35 -70 years reporting to Gynaecology department with abnormal uterine bleeding. All of them underwent Pipelle endometrial sampling and a total of 350 endometrial samples were taken and analyzed. Histopathology of endometrium was compared with results of samples taken by dilatation and curettage or hysterectomy where these were indicated.

The study revealed sample adequacy of 98% .The only inadequate samples were from postmenopausal ladies with atrophic endometrium. Endometrial carcinoma could be picked up in four cases. The frequency distribution of endometrial pathologies in different age groups were also analyzed. The procedure proved to be simple, acceptable, accurate, and cost effective. The results from this study when compared with other population based studies, showed a higher proportion of successful samplings. This difference is due to double sampling technique used in the study.

Pipelle sampling should replace diagnostic dilatation and curettage as much as possible. Double sampling technique remarkably improves sensitivity of procedure.

Keywords: Pipelle endpmetrial sampling, abnormal uterine bleeding, dilatation and curettage

INTRODUCTION

Approximately one third of all the gynaecological consultations are related to abnormal vaginal bleeding. This proportion rises to 70 % in the peri and postmenopausal years [1] Endometrial assessment is indicated at the age of 40 years to exclude endometrial hyperplasia or carcinoma as less than 1% endometrial carcinoma occur under 35 years of age [2] and 6% in those 45 or less. Younger women may also need endometrial investigation if abnormal bleeding does not resolve with medical management. It is also indicated in polycystic ovarian disease or if there is unusual endometrial appearance. Endometrial biopsy is important even if hysteroscopy is normal [3].

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The dilatation of the cervix and curettage of the uterine cavity under general anaesthesia has long been the gold standard for the assessment of abnormal uterine bleeding. The method requires laboratory investigations, hospitalization and carries the risks of general anaesthesia. Outpatient procedures are simple, inexpensive and avoid the need of general anaesthesia [4]. One of these procedures is Pipelle endometrial sampling. Pipelle is a flexible instrument made of soft plastic and works by suction mechanism. The surface area curetted by dilatation and curettage (D+C) is much larger than that by pipelle. But Pipelle has been shown to be as accurate as the former in excluding endometrial hyperplasia and carcinoma [5-7]. Both procedures can miss small polyps and submucosal fibroids [8]. Pipelle is less painful than Vabra aspirator. Those with failed or inadequate sample should proceed to dilatation and curettage with or without hysteroscopy [9].

MATERIALS AND METHODS

The present study was conducted at CMH Peshawar to determine the clinical usefulness of this procedure with regards to sample adequacy and patient acceptability. Three hundred and fifty endometrial samples were studied and analyzed. Patients requiring endometrial assessment for the work up of infertility were excluded from our study.

A detailed history of the patient was taken. Menorrhagia was assessed with special reference to clotting, size of clots, flooding and embarrassing accidents. Endometrial biopsy was done during the last week of a regular cycle. For irregular cycle it was done any time when the lady was not bleeding heavily. Endometrial sample was obtained using flexible pipelle. For this study Pipelle 60 rue Pierre Charron 7500 – PARIS – FRANCE was used. Cusco's speculum was used to visualize the cervix. Pipelle was gently inserted into the cervical canal past the endocervix into the uterine cavity to the fundus. Inner sheath was withdrawn and instrument rotated up and down. If sample looked inadequate a second attempt was made after pushing the plunger and we used a double sampling technique with the same devise. In only a few cases where insertion of the sampler was not possible, anterior lip of the cervix was steadied with volsellum forceps. If it did not work the device was held in a straight forceps to enable insertion. As a last resort cavity was sounded to allow some dilatation of the os. If this was not possible the procedure was abandoned.

Discomfort during the procedure was analyzed on the following scale as described in table-2

- No discomfort
- Slight discomfort.
- Severe discomfort to make the patient moan.

D&C was done in cases of heavy continuous bleeding, in cases of inadequate samples and negative samples in postmenopausal bleeding.

RESULTS

The study group comprised women between 35-70 years of age, reporting to gynae OPD CMH Peshawar, complaining of abnormal vaginal bleeding during the period Dec 2000 to Dec 2002.

The results of histopathology were analyzed with regards to sample adequacy and were compared with samples taken by D&C and hysterectomy specimens where these were indicated.

The results of endometrial biopsy were compared with the results of samples taken by dilatation and curettage or hysterectomy where these were indicated.

Table-1 summarizes the age incidence for vaginal bleeding in the study sample. Majority of patients were of age group 35-45 years with 45-55 years next in line. Indications for sampling are shown in fig.1. 47% of patients presented with menorrhagia and 28% with postmenopausal bleeding. Data obtained regarding patient acceptability is shown in table-2. Vast majority of patients, 94% experienced no discomfort, with only 0.8 experiencing severe pain. Fig.2 shows that great majority of patients 95.5% had adequate samples. 4% had inadequate samples with 1.4% ending as failed samples. Breakdown for inadequate samples is shown in fig.3. Majority of failed samples were in postmenopausal ladies. Heavy vaginal bleeding and cervical stenos is contributed to the remaining.

Incidence of histipathological patterns is shown in table-3. Proliferative endometrium was the most common finding on histopathology 34% - indicating anovulation as the leading cause of abnormal vaginal bleeding. All 6 cases of endometrial cancer were diagnosed on pipelle biopsy.

DISCUSSION

The study was conducted to evaluate the efficacy of Pipelle as a tool for endometrial biopsy. As the Pipelle does not require cervical dilatation due to its diameter and flexibility the procedure was well tolerated and was acceptable to the patients. There was no need of anaesthesia in any of the patients. Only about 5% of the patients had slight discomfort. This is compared to a study by Silver et al [10] in which 89% cases described the pain as none to moderate. This shows a better tolerance and less apprehension in the women of our set up after proper counseling. Pipelle is also reported to be least painful as compared to Novak or Vabra aspirator [11].

In this study 90 % of the patients had the ultrasound and Pipelle done on the same day at one visit, rest had it on two visits .No laboratory investigations were required and there was no hospital stay. 35% of the patients in our study had one or more of the associated conditions like anaemia, diabetes, hypertension and obesity. They all avoided the risk of anaesthesia.

Adequate samples were obtained in 95% of the cases .In Gordon's [9] study the sample adequacy was only 33% .The reason could be deficient training of the staff because it is mentioned in the study that resident doctors were more likely to sample insufficiently .In our study D&C has been replaced by Pipelle, so we have developed our expertise in the procedure. This is comparable to study by Asif Zia Akthar [12] where successful sampling was carried out in 96% of the cases. In our study 13 cases where D&C was done because of inadequate sample, the curettage again revealed inadequate or atrophic endometrium. So negative sampling correlated with absence of malignant pathology.

In this study not a single case of endometrial carcinoma or hyperplasia was missed on Pipelle biopsy .In a study by Stovall [13] two cases of endometrial carcinoma were missed. Two cases of endometrial cancer were missed in post menopausal bleeding in another study [14]. Other authors have reported figures of 83 % and 92% [15-16]. The detection rate for endometrial carcinoma with other sampling devices has been reported in similar figures for Novak curette and Z –sampler. So no other devise has so far proven to be better than Pipelle.

When the hysterectomy specimens were analysed four cases of endometrial polyp and two cases of submucus fibroids were found that had been missed by Pipelle. The rate of missed focal lesions by Pipelle (27%) is less than that of conventional curettage, which is 50% [17-18]. So both can miss the pedunculated abnormalities, Direct visualization of the intrauterine cavity by hysteroscope detects more pathology than these blind procedures, but has a low sensitivity for detecting endometrial hyperplasia without an associated biopsy [19]. So hysteroscopy alone is not a reliable tool to rule out endometrial pathology.

On analyzing the histopathology results of the samples 34% were showing proliferative endometrium. This indicates an ovulation to be the leading cause of abnormal vaginal bleeding. The second most common pattern was mild cystic hyperplasia (21%). These were managed with hormones (progestins) therapy. Eleven cases of atypical hyperplasia were diagnosed. They were

Table-1: Age incidence in the study sample

Age of Patients	No of cases n=350	%age
35-45	147	42
45-55	98	28
55-60	66	18.9
60-70	39	11.11

Table-2: Patient's acceptability with pipelle

No Discomfort	329	94%
Slight Discomfort	18	5.2%
Severe Discomfort	3	O.8%

Table-3: Incidence of different histopathologic patterns

Hispathlogical Patterns	No of cases n=336	%age
Proliferate Endometrium	114	33.92
Secretory Endometrium	47	13.988
Nonspecific Endometritis	26	7.738
Adenomatous Hyperplasia	33	9.82
Decidual tissue	6	1.785
Atrophic endometrium	10	2.97
Mild cystic Hyperplasia	69	20.535
Endometrial cancer	6	1.785
Endometrial polyp	10	2.976
Atypical endometrial hyperplasia	11	3.27
Tuberculous Endometritis	3	0.892
Chorio carcinoma	1	0.297

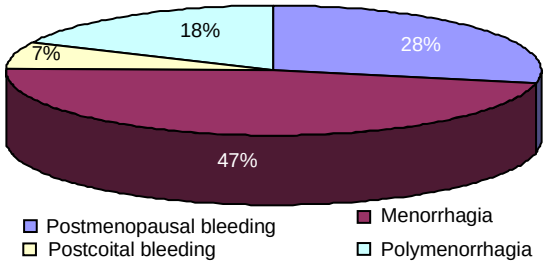

Fig 1: Indications for sampling

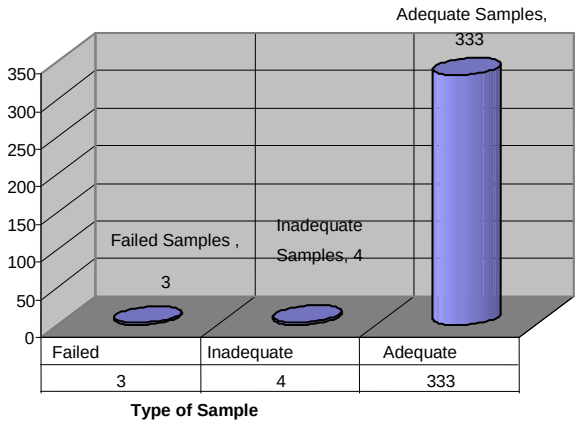

Fig 2: Adequacy of sample

counseled and were advised hysterectomy. Two of them infertile, refused surgery and never returned for follow up. Saline infusion sonohysterogram is now being used widely along with pipelle sampling for work up of abnormal uterine bleeding [20, 21].

Pipelle endometrial biopsy is not only simple and accurate but is more acceptable, cost effective with virtually no risks [23]. It is convenient to the patient and the physicians. It is useful in obese and high risk patients.

Double sampling technique that is taking the biopsy twice at the same time in cases of doubtful amount of sample remarkably improves the sensitivity of the procedure. Use of Pipelle can remarkably reduce the number of D&Cs performed in the theatre.

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