

Diagnostic Efficacy of Endometrial Sampling by Pipelle Biopsy Technique in Peri and Postmenopausal Women with Abnormal Uterine BleedingVallepu Venkata Narayana^{1*}, E Narmada², B Shabana Begum³^{1,2,3}Assistant Professor, Department of Obstetrics & Gynaecology, Kurnool Medical College, Kurnool, Andhra Pradesh

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Conflict of interest: Nil

Abstract:

Aim: Current study is conducted to determine the diagnostic efficacy of pipelle as a tool for endometrial biopsy and to establish the reliability of pipelle curette so that the number of traditional Dilatation and Curettage done under short general anesthesia can be reduced to minimum.

Method: In this study we assessed 100 consecutive peri and postmenopausal patients attending Obstetrics and Gynecology department with complaints of abnormal uterine bleeding. These patients are subjected to transvaginal ultrasonography and pipelle endometrial sampling.

Results: Indication for the procedure were heavy menstrual bleeding 21 (42%), intermenstrual bleeding 11 (22%), irregular periods 10 (20%) and others 8(16%) in premenopausal women with AUB and postmenopausal bleeding in 50 out of 50 postmenopausal women means 100%. In postmenopausal group, 6% of the patients were nulliparous who had hyperplasia and hyperplasia with atypia. Majority of postmenopausal patients have period of menopause in the range of 6-10 years (37.5%). In postmenopausal group 74% of the patient had associated medical problem. In premenopausal women 44 patients (88%) had endometrial thickness more than 10mm and in 6 patients (12%) had endometrial thickness less than or equal to 10mm. Among 50 postmenopausal women the ET was more than 4mm in 40 patients (80%) and in 10 patients (20%) ET was less than or equal to 4mm. In those who had < 4mm ET, the sample size was inadequate as compared to those who had ET >4mm. In the present study difficulty encountered during pipelle sampling while passing the cannula through the cervical os is comparatively less 2% in premenopausal women than postmenopausal women 8%. Post procedure complaint or discomfort in lower abdomen or slight vaginal spotting which was about nil in premenopausal women and 4% in postmenopausal women. Adequacy of the pipelle sampling using the pipelle curette has shown to obtain adequate specimen in 87-100% of patient. In the present study, it was 96% and 88% in premenopause and in postmenopausal women with AUB respectively. In the present study, since no complication occurred and no serious pathology was missed, pipelle sampling combined with endometrial thickness increases the sensitivity and specificity both, therefore we suggest that pipelle sampling combined with sonographic measurement of endometrial thickness is an acceptable, less invasive alternative to hysteroscopy and D & C as a first line investigation in the evaluation and management of abnormal peri and postmenopausal uterine bleeding.

Conclusion: Evaluation of the target population i.e., peri and postmenopausal women with AUB by using office based pipelle endometrial biopsy and transvaginal ultrasonography, and to detect prevalence of atypical hyperplasia -endometrial carcinoma at the earliest in a cost effective way. In developing countries like India evaluation of AUB in peri and postmenopausal women can be done with minimal infrastructure setup even where operation theatre facilities are not available in remote areas by doing Ultrasonography and office endometrial biopsy which is cost effective safe OPD procedure, less time consuming, non-invasive, less discomfort to the patient and early diagnosis of atypical hyperplasia and endometrial carcinoma.

Keywords: Breast, Malignancy, Benign, Cytology, Hyperplasia.

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Introduction

Abnormal uterine bleeding is the overarching term used to describe any departure from normal menstruation or from a normal menstrual cycle pattern. The key characteristics are regularity, frequency, heaviness of flow, and duration of flow,

but each of these may exhibit considerable variability. AUB can mean both heavy and irregular menstrual bleeding and many patients experience a combination of these symptoms. [1] AUB is reported to occur in 9 to 14% women

between menarche and menopause. The prevalence varies in each country. In India the reported prevalence of AUB is around 17.9%. Abnormal uterine bleeding accounts for more than 70% of all gynecological consultations in the perimenopausal and postmenopausal years. It is estimated that 9-30% of women of reproductive age suffer from HMB, the prevalence increasing with age, and peaking just prior to menopause. [2] Hence, Endometrial assessment is indicated at the age of 40years to exclude endometrial hyperplasia or carcinoma as less than 1% endometrial carcinoma occur under 40years of age and 6% in those 45 or less.

Endometrial biopsy is sufficiently sensitive to obtain accurate diagnosis of endometrial hyperplasia or cancer. Endometrial hyperplasia is associated with obesity and age, being more common in women above 45years of age, with a prevalence of hyperplasia of 2-7% in premenopausal women. [3-5] Commonly used sampling devices include pipelle aspirator, Novak curette and Vabra aspirator [6].

Whenever Endometrial Biopsy fails to yield sufficient tissue for laboratory examination or when the report does not explain clinical symptoms of disease, doctor should consider the women for hysteroscopy and curettage to identify possible missed pathology. [7] Screening for endometrial carcinoma or its precursors (hyperplasia) is justified for certain high risk women. [8]

Dilatation and Curettage (D&C) is the most commonly employed method for endometrial sampling as in 60% of cases less than half of uterine cavity is curetted, there is a risk of general anaesthesia, infection and perforation. [9,10] This has led to the advent of newer methods for endometrial sampling. As the safety and acceptability of these devices have been established, these methods are commonly used in tertiary Gynaecological care and more recently have been successfully introduced in primary care. [11]

A large number of various outpatient endometrial sampling procedures are available currently such as Accurette, Gynoscann, Nowak curette, Pipelle, Vabra aspiration, Z-sampler. But our focus is on endometrial sampling by pipelle. As early evaluation is important and this can be done by outpatient pipelle biopsy procedure, which is easy, safe, less expensive, good patient acceptability and time saving process. [12]

There is an excellent association between the histopathology of endometrial specimens taken by biopsy instruments in the office and Dilatation & Curettage. [13-15].

Despite some limitations, numerous studies have shown that the endometrium is adequately sampled with these biopsy techniques. [16,17]

Current study is conducted to determine the efficacy of pipelle as a tool for endometrial biopsy and to establish the reliability of pipelle curette so that the number of traditional Dilatation and Curettage done under short general anesthesia can be reduced to minimum.

Material and Methods

Study population: 100 patients of aged 35 years and above who presents with abnormal uterine bleeding were enrolled in the study after providing informed consent to participation and after obtaining fitness for the procedure, attending the department of Obstetrics & Gynaecology, Kurnool Medical College, Kurnool, Andhra Pradesh.

Study design: It is a Prospective Observational Study.

Sample size, n =100.

Study duration: December 2022- November 2023.

Inclusion criteria:

- All women of age 35 years and above with Abnormal Uterine Bleeding.
- Women who have given informed consent for participation in the study.
- Women who have obtained fitness for the procedure.
- Women with abnormal uterine bleeding with some medical disorder which may be high risk for anesthesia.

Exclusion criteria:

- Pregnant women.
- Patients with lower genital tract infections.
- Pelvic inflammatory disease.
- Clotting disorders or coagulopathy.
- Cervical cancer.
- Congenital anomalies of uterus.

Methodology:

Informed consent was taken from patients who fulfilled the inclusion criteria.

Procedure: A detailed clinical assessment of patient was performed in the Obstetrics and Gynecology department including history regarding bleeding pattern and any exogenous hormone intake, complete medical and surgical history, physical and gynecological examination, base line investigations like CBC, UPT, BT & CT, TSH & specific investigation transvaginal sonography for ET.

- Transvaginal ultrasonography was performed before endometrial biopsy. The uterus will be scanned in the coronal and longitudinal projections with the use of 5.0-to-7.5-MHz

vaginal transducers. The thickest anteroposterior diameter of the endometrial stripe will then be measured in the sagittal plane with digital calipers on the display. The endometrial thickness will then be recorded.

- A standard form was used to record the date of the examination, the equipment used, endometrial thickness, the technical adequacy of the examination, and in the case of a technically unsatisfactory examination, the contributing factors.
- The endometrial biopsy was done as an Out-Patient Department procedure without anaesthesia.
- Tablet Buscopan is given 30 minutes prior to the procedure.
- The patient should be explained about the procedure fully.
- Ask the patient to empty the bladder.
- With patient in lithotomy position, clean the external genitalia, vagina, cervix with povidone iodine.
- After draping the patient well, bimanual examination done to assesses the size and position of the uterus with sterile gloved hand.
- The cervix is held with vulsellum applied to anterior lip of cervix to provide a gentle traction to straighten the utero cervical canal thus reducing the chance of perforation.
- Pipelle is inserted through the cervical os and advanced until gentle resistance felt, length of the utero cervical canal noted down.
- The inner piston of the device is then withdrawn to create suction and endometrial sample is obtained by moving the pipelle up and down with in the uterine cavity.
- As the cannula is rotated, during removal a strip of endometrium peeled is off, withdrawal of the inner piston of the pipelle creates suction.
- This procedure should be repeated at least 4 times and the device rotated 360 degree to ensure adequate coverage of the area.

- The pipelle can be withdrawn out and endometrial sample expelled into a solution of 10% formalin.
- Sample should be sent to pathology for histopathological examination.
- Depending on the HPE report categorisation done.
- Depending upon the condition follow-up done at 1, 3 and 6 months, managed with conservative method or with D & C or Hysterectomy if needed, and their HPE reports are compared with that of pipelle. Hence D & C or hysterectomy is taken as gold standard regarding management.
- The pipelle should not make contact with formalin.

Statistics: The data was analysed with excel sheet. All variables were analysed and the results were represented accordingly. P value <0.05 will be taken as significant.

Results

The majority of women in premenopausal group were between 41-50 years of age (68%).

In postmenopausal group were between 51-60 years of age (60%).

In both group, majority of women were Parous. In postmenopausal group of patients 6% were Nulliparous who had hyperplasia and hyperplasia with atypia.

Nulliparity is one of the known risk factor for endometrial hyperplasia and endometrial carcinoma.

Majority of postmenopausal group of patients have period of menopause in the range of 6-10 years (36%).

In premenopausal group of patients majority of women 52% were overweight, while only 20% were Obese. In postmenopausal group significant patients were overweight and obese of 40%.

Table 1: Distribution of Cases in Reference with associated disorder

Medical disorder	Pre menopause	Post menopause	Total
Hypertension	9(18%)	8(16%)	17(17%)
Diabetes Mellitus	2(4%)	2(4%)	4(4%)
Hypertension +Diabetes Mellitus	3(6%)	16(32%)	19(19%)
Hypothyroidism	8(16%)	3(6%)	11(11%)
Diabetes Mellitus + Hypothyroidism	1(2%)	3(6%)	4(4%)
Hypertension + Diabetes Mellitus +Hypothyroidism	1(2%)	2(4%)	3(3%)
Hypertension +Other disorders	2(4%)	2(4%)	4(4%)
Hypertension +Hypothyroidism	0(0%)	1(2%)	1(1%)
Total	26(52%)	37(74%)	63(63%)

In premenopausal group 16% of women had hypothyroidism followed by hypertension 18% and diabetes 4%. In postmenopausal group of women majority had both hyper tension and diabetes 32% followed by hypertension 16% and diabetes and hypothyroidism 6%. Hypertension, DM, Obesity these are well known risk factors known to be causing Corpus Cancer syndrome.

Table 2: Distribution of cases according to menstrual pattern

Menstrual Pattern	Pre menopause	Post menopause	Total
HMB	21(42%)	-	21
HPMB	6(12%)	-	6
IMB	11(22%)	-	11
Short Cycles	1(2%)	-	1
Prolonged Cycles	1(2%)	-	1
Irregular Periods	10(20%)	-	10
PMB	-	50(100%)	50
Total	50	50	100

In premenopausal women indication for the procedure were HMB 42%, irregular periods 20% and IMB 22%. In postmenopausal group PMB were 50 out of 50 (100%).

Table 3: distribution of cases according to ET IN TVS (in reference with cutoff value) in both premenopausal and postmenopausal group

Pre menopause	Post menopause	Total
44(>10 mm) 88%	40(>4 mm) 80%	84
6(≤10 mm) 12%	10(≤4 mm) 20%	16
50	50	100

Table 4: distribution of cases according to post procedure complaint & yield (sample size) in pipelle endometrial sampling

	Pre menopause	Post menopause	Total
Post - Procedure Complaint			
Yes	0(0%)	2(4%)	2(2%)
No	50(100%)	48(96%)	98(8%)
EB Sample			
Adequate Sample	48(96%)	44(88%)	92(92%)
Inadequate Sample	2(4%)	6(12%)	8(8%)

Table 5: distribution of cases in reference with any correlation of endometrial thickness and adequacy of sample size in premenopausal group & correlation of endometrial thickness and adequacy of sample size in post-menopausal group

	Adequate Sample Obtained by Pipelle	Inadequate Sample Obtained by Pipelle	Total	Specificity	Sensitivity	Positive Predictive Value	Negative Predictive Value
Endometrial Thickness on TVS							
>10 mm	44	0	44	91.6	100	100	33.33
≤10 mm	4	2	6				
Total	48	2	50				
Endometrial Thickness on TVS							
>4 mm	40	0	40	90.9	100	100	60
≤4 mm	4	6	10				
Total	44	6	50				

Table 6: distribution of cases according to histopathological finding in pipelle sampling

Histopathological Findings	Pre menopause	Post menopause	Total
Proliferative	23(46%)	14(28%)	37(37%)
Disordered Proliferative	7(14%)	5(10%)	12(12%)
Secretory	5(10%)	1(2%)	6(6%)
Endometrial Polyp	1(2%)	1(2%)	2(2%)
Atrophic endometrium	0(0%)	9(18%)	9(9%)
Simple hyperplasia	10(20%)	5(10%)	15(15%)
Complex hyperplasia	2(4%)	4(8%)	6(6%)
Simple hyperplasia with atypia	1(2%)	0(0%)	1(1%)
Complex hyperplasia with atypia	0(0%)	2(4%)	2(2%)
Endometritis	0(0%)	1(2%)	1(1%)
Endometrium Carcinoma	1(2%)	8(16%)	9(9%)

Table 7: Distribution of cases according to pathology

Histopathological Findings	Pre menopause	Post menopause	Total
Benign Pathology (Proliferative + secretory + polyp + disordered proliferative + atrophic endometrium + endometritis)	36 (72%)	31 (62%)	67 (67%)
Simple hyperplasia	10 (20%)	5 (10%)	15 (15%)
Complex hyperplasia	2 (4%)	4 (8%)	6 (6%)
Simple hyperplasia with atypia	1 (2%)	0 (0%)	1 (1%)
Complex hyperplasia with atypia	0 (0%)	2 (4%)	2 (2%)
Malignancy	1 (2%)	8 (16%)	9 (9%)
Total	50	50	100

Table 8: Distribution of cases according to management

Management	Pre menopause	Post menopause	Total
Conservative Management	37 (74%)	24 (48%)	61(61%)
Surgical Management	13 (26%)	26 (52%)	39(39%)
Total	50	50	100

Distribution of cases according to route of medical management in premenopausal group:

Majority of the premenopausal women, 20 out of 37 (54%) have underwent MIRENA insertion as conservative method. Good satisfactory report with MIRENA in follow up period and hysterectomies can be avoided in younger age group.

Distribution of cases in reference with diagnosis concordance with pipelle sampling and endometrium obtained through d & c or hysterectomy specimen:

In premenopausal group 13 patients underwent hysterectomy. Out of 13 patients, 12 (92.3%) diagnosis was concordant. In one patient (7.69%) it was not the same, in pipelle it was disordered proliferative endometrium but in hysterectomy specimen, atypical hyperplasia was reported.

In post-menopausal group out of 26 patients, 24 (92.3%) patients had concordant diagnosis while in 2 patients (7.69%) the diagnosis was discordant. Who had endometrial polyp reported in pipelle sampling actually were having tumour present in an endometrial polyp, confirmed via hysterectomy specimen.

Distribution of cases according to feasibility of pipelle sampling: Difficulty encountered during pipelle sampling while passing the cannula through cervical os comparatively less(2%) in premenopausal group than postmenopausal group 8% because of stenotic os and flushed cervix.

According to post procedure complaints: Post procedure complaints or discomfort like pain or cramping in lower abdomen or slight vaginal spotting which was about nil in premenopausal women and 4% in postmenopausal group.

Discussion

This study includes Transvaginal ultrasonography and endometrial biopsy through pipelle cannula in evaluating perimenopausal and postmenopausal women with abnormal uterine bleeding. It is effective in detecting endometrial carcinoma and other benign lesion of the endometrium.

In the present study, majority of women in premenopausal group were between 41-50 years of age (68%) and in postmenopausal group 51-60 years (60%).

Indication for the procedure were heavy menstrual bleeding 21 (42%), intermenstrual bleeding 11 (22%), irregular periods 10 (20%) and others 8 (16%) in premenopausal women with AUB and postmenopausal bleeding in 50 out of 50 postmenopausal women means 100%.

Ajit Kuruvilla et al, in their study showed the majority of women (58.8%) were between 41-49 years of age. 18 Indications for the procedures were menorrhagia 52 (50.9%), intermenstrual bleeding 39 (38.2%) and postmenopausal bleeding 21 (20.6%).

In the present study, in both groups majority of women were parous. In postmenopausal group of patients 6% of the patients were nulliparous who had hyperplasia and hyperplasia with atypia.

Nulliparity is one of the known risk factor for endometrial hyperplasia and endometrial carcinoma.

In the present study, majority of the postmenopausal group of patients have period of menopause in the range of 6-10 years (37.5%).

Savelli L et al in their study showed that majority of patients were overweight range with a BMI of 25.9+5.3kg/m². [19] In present study in premenopausal group of patient's majority of

women 52% were overweight while only 20% were obese range. In postmenopausal group significant patients were overweight and obese 40%.

In our study, in postmenopausal group 74% of the patient had associated medical problem in comparison to study of W H Lee et al [20] showed 65% of the patient had associated medical problems. In our study hypertension & diabetes were most common 16 (32%) followed by hypertension 8 (16%) and hypertension, diabetes and hypothyroidism 2 (4%), while Lee study showed most common medical problem was hypertension 17% followed by diabetes 12% and cardiac disease 5%.

The high sensitivity and poor specificity of transvaginal sonography suggest that an abnormal endometrial thickness measurement need to be followed up by a second stage test means endometrial biopsy.

In the present study in premenopausal women 44 patients (88%) had endometrial thickness more than 10mm and in 6 patients (12%) had endometrial thickness less than or equal to 10mm as compared with the study conducted by Getpook C et al [21], endometrial thickness of 8mm or less is less likely to be associated with malignant pathologies in premenopausal uterine bleeding. Ozdemir S et al [22] study showed ET >8mm is more likely than that of 8mm or less to be indicated with endometrial biopsy in premenopausal uterine bleeding.

In the present study in 50 postmenopausal women the ET was more than 4mm in 40 patients (80%) and in 10 patients (20%) ET was less than or equal to 4mm. In those who had < 4mm ET, the sample size was inadequate as compared to those who had ET >4mm. Elsandabesse et al [23] recommends when the ET is <4mm, little can be gained from endometrial sampling or as malignancy is rare and chance of getting an adequate sample is small.

In the present study difficulty encountered during pipelle sampling while passing the cannula through the cervical os is comparatively less 2% in premenopausal women than postmenopausal women 8%. Rezk M et al [24] also in their study showed that pain scores by VAS were significantly higher in postmenopausal women (6.5+1.13 versus 4.85+0.86) during pipelle endometrial sampling.

In present study, Post procedure complaint or discomfort like pain or cramping in lower abdomen or slight vaginal spotting which was about nil in premenopausal women and 4% in postmenopausal women. Leng X et al [25] also showed that there was no pain for patients who underwent pipelle technique. Rauf R et al [26] in their study showed that only 2% experienced severe pain and 6% had mild pain with pipelle biopsy. Hence they

concluded that pipelle endometrial biopsy is more cost effective with less procedure pain.

Adequacy of the pipelle sampling using the pipelle curette has shown to obtain adequate specimen in 87-100% of patient. In the present study, it was 96% and 88% in perimenopause and in postmenopausal women with AUB respectively. Inadequate sample was obtained in 8% together in premenopausal and postmenopausal women with AUB, which is better than 16.09% cases with insufficient material in a study by Machado F et al. [27]

Our study showed in 50 premenopausal women with AUB, pipelle sampling combined with endometrial thickness have the sensitivity of 91.6% with a specificity of 100%.

These studies showing the majority of the patients had normal histological findings, In Ganesh Dangel [28] study 29(34.5%) showed normal histology in 84 patients.

According to Lee et al study showed atrophic endometrium in 85 postmenopausal women out of 163 (52%). In our study the proliferative endometrium was the most common reported histological finding 14 (28%). The next was atrophic endometrium & endometrial carcinoma findings were seen in 31 (19.1%) in W. H. Lee study while in our study it was 9 (18%) and 8 (16%) respectively.

In both groups majority of patients had conservative management like observation, periodic follow up, progesterone therapy and MIRENA insertion. 13 (26%) perimenopause group patients underwent hysterectomy. Those who were not relieved with conservative management.

26 (52%) patients in postmenopausal group underwent hysterectomy. Out of them 8 (16%) had endometrial carcinoma. 11 patients out of 26 in postmenopausal women having indication of simple hyperplasia, complex hyperplasia, simple hyperplasia with atypia and complex hyperplasia with atypia underwent hysterectomy and disease was found similar in endometrium as HPE finding in pipelle sampling, while in 2 patients whose indication was proliferative endometrium with endometrial polyp, reported in pipelle sampling actually were having tumor present in an endometrial polyp, confirmed via hysterectomy. Rest 1 patient where indication was disordered proliferative endometrium put her on first conservative management but not relieved so finally ended up with hysterectomy. In Guido RS et al [29] study showed the pipelle biopsy was adequate for analysis in 63 of 65 patients (97%). Malignancy was detected by biopsy in 56 of 65 patients with false negative results, 5 had tumors present in only an endometrial polyp. Ben-Baruch

G, Seidman DS et al study showed the histological diagnosis of the endometrium obtained by pipelle sampling when compared with endometrium obtained by hysterectomy performed shortly thereafter the diagnosis was identical in 95.5% cases. Our study showed, concordant diagnosis in postmenopausal group was 92.3%.

In premenopausal/postmenopausal patient changes in endometrial thickness throughout the menstrual cycle although thickness commonly exceeds 10mm in normal uteri but having difficulty in differentiating polyp, hyperplasia and fibroid polyp. 15% of the population were over the age of 40 year have menorrhagia or irregular period are common require endometrial assessment. The 10mm endometrial thickness cut off for pre, peri and post-menopausal women taking HRT has a lower sensitivity, however the positive predictive value increased.

In the present study 12 (24%) patients were detected with hyperplasia without atypia and 1 (2%) simple hyperplasia with atypia in perimenopause women. While 9(18%) were detected with hyperplasias without atypia and 2(4%) with complex hyperplasia with atypia in postmenopausal women. The basis of the unopposed action of estrogen causing endometrial hyperplasia. All these patients are kept under close observation and managed appropriately.

Carcinoma of the endometrium rare under the age of 35years but the incidence begins to rise exponentially to peak in the postmenopausal age group. Around the age of 48 years it become more common than the carcinoma cervix. But in India Carcinoma cervix is still the most common malignancy in female.

The earlier the diagnosis of the cancer of the body of uterus is made; the better is the survival rate. This is true with regard to both age and stage of disease. The diagnosis is made by histological examination of the endometrium. In the postmenopausal women it is accepted that the endometrial assessment is must in order to exclude Carcinoma of the endometrium however, fewer than 10% of women with postmenopausal bleeding will have endometrial cancer. In the present study there were 8 cases of endometrial carcinoma among 50 patients (16%) in postmenopausal group and 1 (2%) in premenopausal group of women.

In various studies, malignancy of the genital tract accounted for 30-50% of cases of bleeding in the postmenopausal period and about 15% of all such cases had endometrial cancer. Lee et al showed in their study endometritis in 2 patients (1.2%). Ganesh Dangel et al showed endometritis in 5 patients (11.1%). Abdelazim IA et al [30] showed endometritis in 7 patients (5%). Khadim MT et al [31] showed endometritis in 3 patients (23.10%). In

present study endometritis is seen in 1 patient (2%) of 50 postmenopausal women with bleeding, the cause being endometrial tuberculosis.

D & C and hysteroscopy with directed biopsy are established methods to sample endometrium for histology under anesthesia. The blind D & C may result in incomplete sampling of uterine cavity in upto 60% procedures. There is a chance of transtubal peritoneal spillage of malignant cells during hysteroscopy in cases of endometrial carcinoma⁶⁷. Whilst cost effective, minimally invasive, endometrial sampling can be done safely as OPD procedure without anesthesia with comparably sensitivity. [32]

In this study we used pipelle endometrial aspiration cannula a sampling device, the most extensively studied of a sampler is the pipelle. It has been studied in comparison with the Vabra aspirator, Novak curette, Tis-U-Trap, Accurette and Explora. The pipelle is equal to or better than these samplers with regard to histological analysis and patient comfort. In the present study, in premenopausal group none of the patient felt discomfort, however in postmenopausal group discomfort felt in 8% of patients with pipelle cannula.

In brief although endometrial biopsy is a sensitive and relatively inexpensive test for identifying endometrial atypical adenomatous hyperplasia and carcinoma, it is a poor test for diagnosing benign endometrial abnormalities such as atrophy, polyps and submucous fibroids which are far more common causes of bleeding. Ultrasound techniques have superior sensitivity in the identification of benign conditions. Hysteroscopy, while accurate in diagnosing nearly all conditions, is both invasive and expensive. [33]

Time taken for the procedure is also different in this two procedure i.e., pipelle endometrial biopsy takes maximally 5-10min, and just after the procedure patient can leave the hospital. But D&C or hysteroscopy are Day Care procedures which needs admission.

The more invasive procedure of hysteroscopy and D & C can be reserved for a specific situations like patient with morbid obesity, stenotic os, or if patient is planned for some another surgical procedure under anesthesia.

Conclusion

Evaluation of the target population by using office based endometrial biopsy and transvaginal ultrasonography is less expensive in evaluating peri and post-menopausal women with abnormal uterine bleeding and to detect prevalence of atypical hyperplasia – endometrial carcinoma utilizing combined biopsy and TVS Ultrasound algorithms at the earliest and in cost effective way. Endometrial sampling by suction cannula device

(like pipelle) is a cost effective safe OPD procedure it appears to be more safe, less time consuming, cost effective than more invasive and costly procedure like D & C and hysteroscopy for evaluation of patient with abnormal uterine bleeding in peri and post-menopausal bleeding to exclude malignancy. Endometrial sampling is an outpatient procedure using a thin flexible plastic curette (eg: pipelle) has been found as accurate or more than formal curettage. It is also a well-tolerated procedure and so obviate the need for ward admission, operating theatre time and anesthesia. Evaluation of abnormal uterine bleeding in peri and postmenopausal women can be done with minimal infrastructure setup by doing Ultrasonography and office endometrial biopsy facility which is cost effective procedures.

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