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Original Article

Feasibility and yield of endometrial biopsy using suction curette device for evaluation of abnormal pre and postmenopausal bleeding

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Abstract

Objectives : To find out the feasibility and yield of endometrial sampling as an OPD procedure using a suction curette device for evaluating abnormal uterine bleeding in pre and post menopausal women. *Methods:* Endometrial biopsy was done in the OPD without anesthesia, on 50 consecutive patients of pre and post menopausal age group, presenting with symptoms of abnormal bleeding, using a suction curette device (Endorette). *Results:* Endometrial sampling using a suction curette device, as an OPD procedure was safe with 98% procedural success and could pick up adenocarcinoma endometrium (3/50 patients), simple hyperplasia without atypia (33/50 patients), complex hyperplasia without atypia (6/50 patients), complex hyperplasia with atypia (2/50 patients) and TB endometritis (1/50 patient). It missed one case of adenocarcinoma located at the fundus. Patients tolerated the procedure well with no procedure related complications. *Conclusions:* Endometrial sampling using suction curette device, is a simple, inexpensive and minimally invasive technique to evaluate endometrium in pre and post menopausal bleeding.

Keywords: endometrial biopsy, endometrial adenocarcinoma, post menopausal bleeding, pre menopausal bleeding, colposcopy

Introduction

Abnormal uterine bleeding occurring as heavy, prolonged or acyclic flow at menopausal transition or as spotting or minimal bleeding at postmenopausal period may be alarming and needs thorough evaluation, since this may be the only clinical manifestation pointing towards endometrial cancer. Endometrial adenocarcinoma occurs during both reproductive and menopausal years. In USA the incidence of uterine cancer is approximately one case per 1000 post menopausal women per year in the general population. However, about one fourth of all endometrial cancers occur before menopause. The prevalence of endometrial carcinoma and its precursors in Indian women with abnormal perimenopausal and post menopausal bleeding is not well defined.

This prospective study was carried out on consecutive patients presenting with abnormal uterine bleeding at peri and post menopausal age attending Dysplasia Clinic from January 2004 to December 2006. It was carried out to find the feasibility and yield of a suction curette

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device for endometrial sampling, as an office procedure in above patients, to pick up precursors of adenocarcinoma or early stage of the disease itself.

Material and Methods

Fifty peri and post menopausal patients, referred for evaluation of abnormal bleeding from January 2004 to December 2006, were included in the study after obtaining informed consent.

They underwent thorough evaluation including a detailed history regarding bleeding pattern and exogenous hormone or tamoxiphene use, clinical examination, pap smear and colposcopy if indicated. They were subjected to laboratory evaluation including blood counts, biochemistry, urine analysis and pelvic ultrasound examination. All cases having cervical, uterine or adenexal pathology on clinical examination, colposcopy or ultrasound were excluded from the study.

The endometrial biopsy was done in the OPD without anesthesia. Patients were given naproxen 500 mgm and hyoscine butyl bromide 10 mgm orally 30 minutes prior to the procedure. Biopsy was performed using a disposable endometrial suction curettte (Medscand Endorette, E 0020, Medscand Medical AB, Sweden). The instrument (length 282 mm, outer diameter 3 mm) consists of a sterile flexible polypropylene sheath with a polyethylene piston, having four openings at the end. It has a scale in cm to measure the utero cervical length.

Procedure of endometrial biopsy

With patient in lithotomy position, using a long Ellis forceps on anterior lip, cervix is stabilized. The suction cannula is passed through the cervical canal until the fundus is felt.

Holding the sheath in position, the piston is pulled out till built-in stopper to create vacuum. The sheath is then rotated, moved laterally, up and down 2-3 times. With piston still in retracted position the sheath or cannula is withdrawn from the uterus. The tip of cannula is cut off and sample is pushed in a vial containing Bouin's solution.

Results

Endometrial sampling could be achieved adequately in 50 cases amongst 52 referrals, giving a procedural success rate of 98%. All the samples had well preserved histological architecture. The Endorette could not negotiate the internal os in two cases, both patients being menopausal and one being a nullipara. Patients tolerated the procedure well with no procedure related complications. Twenty three cases (46%) were pre menopausal and 25(50%) were of post menopausal age group while two cases (4%) had delayed menopause. There was no case on hormone therapy.

Pre menopausal patients (n=23)

This group comprised of women in menopausal transition or perimenopause. They were 43-50 yeas in age (mean 47.52 SD 1.88 years). The bleeding pattern included heavy, prolonged and acyclic flow. There were no co-morbidities like diabetes, obesity or hypertension.

The endometrial histology is given in Table - 1. Of 18 cases having simple hyperplasia without atypia, two were treated cases of carcinoma breast who were on Tamoxifen therapy with polymenorrhagic cycles. They are being continued on Tamoxifen and are on periodic follow up. Six cases of simple hyperplasia and all three cases with adenomatous hyperplasia without atypia had hysterectomy and results of biopsy were confirmed. There was no case of adenocarcinoma in pre menopausal age group.

Table 1. Endometrial histology in pre-menopausal women (n=23).

Histology	No. of patients
Proliferative endometrium	1
TB endometritis	1
Simple glandular or cystic hyperplasia without atypia	18
Adenomatous hyperplasia without atypia	3

Delayed menopause (n=2)

The were multiparas 55 and 56 years of age and one had simple and other had complex hyperplasia without atypia. Both had hysterectomy with bilateral salpingo oophorectomy and diagnosis of sampling was confirmed.

Post menopausal patients (n=25)

They were of 52 to 65 years of age (mean 55.254 SD 3.84 years). None had heavy flow but presented as spotting or minimal bleeding per vaginum. Endometrial biopsy was performed on all irrespective of measurement of

endometrial thickness on ultrasound (abdominal/ transvaginal). Distribution of patients according to endometrial thickness and the histological findings are given in Table 2.

Table 2. Endometrial thickness on ultrasound and histology in post menopausal women (n=25).

Histology	No. of patients	Endometrial thickness (mm)
Atrophic endometrium	4	<5
Simple glandular or cystic hyperplasia without atypia	14	>5
Complex hyperplasia without atypia	2	>5
Complex hyperplasia with atypia	2	>5
Adenocarcinoma	3	>5

Of four cases with atrophic endometrium, one had persistent bleeding and underwent hysterectomy with bilateral salpingo oophorectomy. She was found to have foci of calcification in the endometrial cavity. No patient had procedure related complication or problem after the procedure except mild abdominal cramp during the procedure which was relieved by a repeat dose of naprosyn 500mg and hyoscine butylbromide 10mg. All patients were given ofloxacin 400mg BD two weeks postoperatively.

Fourteen patients having simple hyperplasia without atypia are on regular follow up with clinical examination, periodic ultrasound and are counseled to report on recurrence of bleeding. Both cases of complex hyperplasia without atypia underwent hysterectomy with bilateral salpingo oophorectomy. One of the cases with complex hyperplasia with atypia was found to have well differentiated adenocarcinoma at the fundus that was missed on endometrial sampling. The three cases of adenocarcinoma picked up on endometrial sampling were surgically staged and treated. They were stage (la=2, 1b =1) tumors. They had undergone hysterectomy with bilateral salpingoophorectomy with pelvic lymphadenectomy.

Discussion

Diagnostic curettage 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 [1]. Similarly, there is a concern about transtubal peritoneal spillage of malignant cells during hysteroscopy in cases of endometrial carcinoma [2]. On the other hand inexpensive and minimally invasive endometrial sampling can be done with the help of aspiration devices or suction cannulae, in OPD without anesthesia, with comparable sensitivity [3]. The more invasive procedure of hysteroscopy and D & C can be reserved for specific situations viz patients with cervical stenosis, massive obesity or if patient is planned for another surgical procedure under general anesthesia.

We used endometrial suction cannula Medscaned Endorette as sampling device in our study. It is comparable to Pipelle de Cornier which is another popular sampling device in terms of capacity for collecting adequate samples[4]. It could collect adequate samples in 50 out of 52 patients (98%)

Majority of patients (78.26%) in premenopausal age group showed histology of simple glandular or cystic glandular hyperplasia without atypia. The histology can be explained on basis of frequent anovulatory cycles, leading to absence of inhibitory effect of progesterone at menopausal transition. Amongst them six had hysterectomy and twelve other patients of this group are on periodic follow up. Patients with adenomatous hyperplasia without atypia underwent hysterectomy. The longterm followup studies show chances of turning into adenocarcinoma being 1% and 3% for simple and complex hyperplasia without atypia respectively.

Getpook et al measured endometrial thickness by transvaginal ultrasound in 111 pre menopausal women with non cyclic abnormal bleeding and concluded that endometrial thickness of 8mm or less is less likely to be associated with malignant pathologies[5]. We did not take into account endometrial thickness in evaluation of pre menopausal group of patients. However, both patients who were on Tamoxifen therapy had endometrial thickness of 11 mm and 13 mm respectively.

Endometrial thickness measurement on ultrasound (abdominal / transvaginal) was taken into account in analysis of endometrial samples of all 25 cases of post menopausal women with abnormal bleeding. On analyzing the results according to endometrial thickness, all four patients with endometrial thickness <5mm had atrophy of endometrial glands and one had calcification of blood vessels of endometrium. Elsandabesse et al recommends endometrial sampling in patients with endometrial thickness of >4mm since in

those with endometrial thickness ≤4mm chance of getting endometrial sample is small and also malignancy is rare in these women [6]. Of 21 cases with endometrial thickness more than 5mm, 16 cases had simple glandular and complex hyperplasia without atypia. This can be explained by the fact that post menopausal women continue to have measurable amount of oestrone and oestradiol (100pg/ml) because of ability of peripheral tissues to aromatize adrenal and ovarian androgens. The unopposed action of oestrogen may lead to endometrial hyperplasia. All these patients are kept under observation as most of the hyperplasias regress on long term follow up [7].

Endometrial carcinoma most often occurs in women in the sixth and seventh decades of life at an average age of 60 years. Seventy five percent cases occur in women older than 50 years of age and 90% of women with endometrial carcinoma have vaginal bleeding or discharge as their only presenting complaint. Less than 5% of women diagnosed with endometrial cancer are asymptomatic. The incidence of adenocarcinoma is 0.1% per year in post menopausal women but rises to 10% in presence of abnormal bleeding. In our study there were 4 cases of adenocarcinoma endometrium amongst 25 patients with post menopausal bleeding and none in pre menopausal group.

Epstein et al have reported that Endorette sampling failed in 16% of women and missed 29% of endometrial cancers found at D & C in patients with post menopausal bleeding. Endorette and D & C showed similar results in terms of adequacy of sample and diagnosing malignancy if endometrial thickness was <7 mm, but in women with endometrial thickness ≥7 mm Endorette yielded insufficient samples more often than D & C (23% vs 6%) and missed all polyps and most hyperplasias found at D & C[8].

Dijkhuizen et al did a meta analysis of 39 studies published between 1966 to 1999 including 7914 women for accuracy of endometrial sampling in diagnosis of patients with endometrial carcinoma and hyperplasia. They concluded that detection rate for endometrial carcinoma was higher in postmenopausal women compared with premenopausal women. Endometrial biopsy with Pipelle had higher accuracy in post menopausal women (99.6%) compared with pre menopausal women (91%) in detecting adenocarcinoma[1].

We picked up one case of tuberculous endometritis amongst fifty patients referred for abnormal uterine bleeding. Endometrium may be involved in 50-60% of cases of genital tuberculosis with menstrual irregularity as presenting symptom and may pose a diagnostic challenge [9,10].

Conclusions

Endometrial sampling by suction curette device is an inexpensive, safe OPD procedure that appears to be a feasible alternative to more invasive procedures like D & C and hysteroscopy for evaluation of patients with abnormal uterine bleeding in peri or post menopausal patients. The endometrial sample so obtained is adequate for histology and shows well preserved architecture. However, a negative histology is no guarantee against the disease and warrants further evaluation by other modalities in patients with persistence of symptoms.

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