ORIGINAL ARTICLE

Histological Correlation of Karmans Endometrial Sampling with Dilation and Curettage in Abnormal Uterine Bleeding

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Abstract

The study was done to compare the diagnostic efficacy of endometrial biopsy obtained by Karman suction cannula with conventional D&C following TVS in patients with AUB. 100 patients of AUB presenting in gynaecology OPD were studied with history, examination, laboratory investigations, TVS, endometrial aspiration using Karman cannula and endometrial curettage. It is concluded that endometrial aspiration is an effective, useful and minimally invasive procedure and can be used for the primary investigation of women with AUB along with TVS.

Key Words

Abnormal uterine bleeding, Endometrial curettage, Endometrial biopsy.

Introduction

AUB is a common clinical presentation with myriad causes. Menstrual disorders as such are responsible for 19.1% of gynecological consultations (1). It is estimated that 30% of women experience menorrhagia annually. Mahoney and colleges report it is the indication for two thirds of hysterectomies and nearly 25% of gynecologic operations (2). The complication rate for abdominal hysterectomy - 9.1%, vaginal hysterectomy - 7.8% and laparoscopic hysterectomy - 8.8% has been reported (3). Considering number of major surgeries performed for AUB, their socioeconomic costs, their associated morbidity and complications, the diagnosis of AUB becomes very important.

AUB can be categorized into two broad categories. The first is due to organic causes; the second is so called dysfunctional uterine bleeding caused by anovulation or oligoovulation. Traditional methods for diagnosing patients with AUB is D&C but a number of ancillary procedures are developed now - TVS, hysteroscopy and endometrial sampling.

Sampling of endometrium is must in women above 40 years with AUB or in women at high risk of endometrial cancer, nullipara with history of infertility, new onset of heavy irregular bleeding, obesity, polycystic ovaries, family history of endometrial and colonic CA and tamoxifen therapy.

Histopathologic evaluation of endometrial sample obtained by curettage is the gold standard for diagnosis of AUB (4). But less than half of endometrial cavity would be curetted in 60% of the patients and up to 15% of endometrial CA would be missed. Polyps may recoil from the passing curette. Uterine curettage is an invasive procedure which must be performed in the operating room under anesthesia.

Endometrial sampling by suction has been found as effective as formal curettage. It is safe and minimally invasive, obviates need for admission, operation theatre and anesthesia. It is simple, reliable and well accepted by the patients (5). This decreases the cost of diagnosis, workup for AUB without reducing accuracy. Its cost is approximately one tenth the cost of D&C procedure. Endometrial aspiration using Karman cannula yields adequate histological evaluation in 82% cases as compared to 76% with D&C making it the prime choice in patients with AUB (6).

Until the alleged benefits of diagnostic D&C can be shown to outweigh its risk and costs, D&C should not be primary procedure for sampling. The complications include uterine perforations (6 to 13 per 1000 patients), infections (3 to 5 per 1000 patients), laceration of cervix, postoperative pain and Asherman's syndrome.

TVS has been suggested as an initial investigation for

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AUB which has sensitivity of 80% and specificity of 69%. Hysteroscopy can be used as second line of investigation.

Material and Methods

This prospective study was conducted on 100 patients with AUB attending the department of OBG in the age group of 20 to 55 years over a period of one year.

Exclusion criterion

1. Pregnancy.
2. Acute pelvic inflammatory disease.
3. Acute cervical or vaginal infections.
4. Cervical cancer.
5. Clotting disorders.
6. Severe cervical stenosis.

After obtaining detailed clinical history, patients went through a physical examination and all relevant investigations were carried out. After doing TVS in the OPD, endometrial aspiration was done using Karman cannula prior to D&C in OT. Curettings obtained were fixed in 10% formalin and sent to the lab. Correlation of the two procedures was evaluated by applying screening test of percentage of true positives, false negatives, sensitivity and specificity.

Results

Observations and results of the study are shown in *Tables 1-5*.

Table 1: Age Distribution of Patients with Aub

Age (Years)	Number of Patients
21-25	04
26-30	04
31-35	11
36-40	32
41-45	28
46-50	16
51-55	05

Table 2: Distribution of Patients According to Symptoms

Symptoms	Number
Menorrhagia	43
Polymenorrhea	22
Metrorrhagia	10
Polymenorrhagia	8
Metropathia Haemorrhagica	10
Menometrorrhagia	7

Table 3: Distribution of Patients by Endometrial Thickness as Assessed by TVS

Endothilial Thickness (Mm)	Number
<5	06
5.1-10	28
10.1-15	44
>15.1	22

Table 5: Complicatios of Karman's Aspiration V/S Dilation & Curettage

Complication	Karman's aspiration	D&C
Bleeding >3 day's	04	22
Heavy bleeding	01	05
Fever/Chills	00	01
Moderate pain	04	20
Foul vaginal discharge	00	02
Cervical tear	00	00
Uterine perforation	00	00
Broad ligament hematoma	00	00

Table 4: Patient Distribution According to Histopathology using Karman Aspiration V/S D&C

Histopathology	Karmans Aspiration	D&C	Sensitivity	Specificity
Proliferative	19	21	90.47%	97.53%
Secretory	14	16	87.5%	97.67%
Mixed	06	06	100%	100%
Decidual reaction	08	08	100%	100%
Atrophic	06	08	100%	100%
Endometrial hyperplasia	42	37	100%	92.64%
Adenocarcinoma	05	04	100%	98.96%

Discussion

In our study most of our patients were in the age group of 36 to 40 years followed by 41 to 45 years . Maheshwari *et al.* also had 42.2% cases in fourth decade. 94% of our patients were multiparous (7). Rachamallu *et al.* also had 88% multiparty in abnormal uterine bleeding patients (8). 45% of patients were found in endometrial thickness range of 11 to 15 mm as measured by TVS. Similar values are reflected by Acharya *et al.* (9). Adequate tissue was obtained in 100% cases by aspiration as against 93% by D&C. Hunter *et al.* also reported tissue adequacy of 94% using endometrial aspiration biopsy (10).

Histopathologic agreement of the tissue obtained by the two methods was found to be 88%. Karman aspiration was found to have a sensitivity of 100% and specificity of 94.87% for detection of abnormal endometrium. Tansathit *et al.* reported Karman aspiration having sensitivity of 89.% and specificity of 100% for detection of abnormal endometrium in patients with abnormal uterine bleeding (11). In our study sensitivity and specificity of Karman aspiration for detection of endometrial hyperplasia was 100% and 92.64% respectively. Sensitivity and specificity for detection of endometrial cancer was found to be 100% and 98.96% respectively which matches with findings of Rachamallu *et al.* (8).

TVS was found to have a sensitivity of 100% and specificity of 89.53% for detection of endometrial hyperplasia. TVS being highly sensitive can be used as an initial investigation for abnormal uterine bleeding. In the present study all cases of abnormal endometrium were found at endometrial thickness of greater than 10 mm. Chatpavit *et al.* also have reported that endometrial thickness greater than 8 mm is likely to be associated with abnormal endometrium (12) though Acharya *et al.* had given this limit up to 14 mm (9).

In the present study there was no case complicated by perforation, cervical tear or broad ligament hematoma by both the methods. Tanzathit *et al*. reported 1.5% rate of uterine perforation by conventional D&C (11). Moderate pain following aspiration and conventional D&C were in 4% and 20% of patients respectively giving an edge to aspiration biopsy. We had 2% infection rate in D&C patients. McElin and colleagues reported 0.5% febrile morbidity after D&C and 0.6% perforation rate (13).

Conclusion

It can be concluded that Karman's aspiration shows high diagnostic accuracy and good tissue adequacy. Simplicity of aspiration biopsy, less time required for procedure, less pain during and after the procedure, lower complication rate and high cost effectiveness make endometrial aspiration biopsy as an initial outpatient investigation of choice in patients with abnormal uterine bleeding. Along with TVS it further increases the diagnostic accuracy. However in patients with risk factors like diabetes, hypertension, family history of cancer of breast, endometrium or colon, further investigation should be done by conventional D&C.

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