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Comparison of Efficacy of Pipelle Biopsy with Dilatation and Curettage

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Abstract

Background: To compare efficacy of pipelle biopsy as an office biopsy method with dilatation curettage (D&C) for women referring Ali Ebn e Abitaleb hospital of Zahedan university of medical science in 2015 - 2016.

Methods: In this cross sectional study, 200 patients with Abnormal Uterine Bleeding (AUB) who had referred to gynecology clinic of Ali Ebn e Abitaleb Hospital of Zahedan University of medical science, were selected. The patients were randomly allocated to the two groups based on permuted block design method. In 1th group (n = 100), pipelle biopsy was performed as office biopsy and 2th group (n = 100), dilatation curettage (D&C) was performed in operation room. Sampling was done by the same surgeon and was interpreted by the same pathologist.

Results: The samples were adequate in 1th group (n = 88), 88% and in 2th group (n = 98) 98%. Fisher test was used for statistical analysis. It reported statistical significant difference between pipelle biopsy and dilatation curettage (D&C) in terms of histopathology and samples efficacy (P = 0.01).

Conclusions: Obtained results demonstrated that efficacy of pipelle biopsy is high. Totally this procedure is safe and cost-effective with low complications. However, we should be careful to alternate pipelle biopsy instead of dilatation-curettage (D&C) in AUB approach.

Keywords: Abnormal Uterine Bleeding, Pipelle Biopsy, Dilatation & Curettage

1. Background

Abnormal uterine bleeding (AUB) is the most common cause of referring to gynecologist in reproductive age of women. Abnormal uterine bleeding in perimenopause and menopause women is important and needs assessment [1-4].

The causes of bleedings may be genital (uterine, cervical and etc) or non-genital. Probable etiologies of uterine are atrophy, endometrial polyp, estrogen replacement, hyperplasia, carcinoma and sarcoma.

Endometrial sampling is the gold standard method for evaluation of abnormal uterine bleeding [5]. Since many years ago, dilatation & curettage is used as an endometrial sampling method but this procedure is expensive and invasive as well as, it is time-consuming. It needs to admit the patient and to give anesthesia in operation room. There are some complications about anesthesia and surgery (uterine perforation, infection and cervical laceration) [3, 4].

Pipelle biopsy is performed as an endometrial biopsy method extensively nowadays. It is safe, cheap and non-invasive as well as its complication is too rare, it doesn't need operation room and anesthesia. Effectiveness of pipelle biopsy samples have been confirmed in the articles. There are many articles about comparisons of effectiveness of dilatation & curettage and pipelle biopsy samples.

Efficacy of samples for pipelle biopsy is reported 93% by Leng et al. [6], 98% by Fakhkhari et al. [7], 92/25% by Liu et al. [8] and 94% by Mousavifar et al. [9].

As far as we know, statistical significant results are not detected in two procedures (D&C, pipelle biopsy) and the endometrial sampling by Pipelle biopsy is efficient too. Therefore, concept of present study is to determine ef-

fectiveness of endometrial sampling by D&C and Pipelle biopsy and comparison of them.

2. Methods

This cross sectional study is done in gynecology clinic of Ali Ebne Abitaleb hospital in Zahedan. 200 women greater than 35 years old with abnormal uterine bleeding were selected and subdivided into two groups. For first group (n = 100), pipelle biopsy was performed as endometrial sampling and for second group (n = 100), dilatation & curettage (D&C) was done. The patients had the group matching for age. The author excluded the patients without informed consent. Other exclusion criteria were cervical stenosis, genital infections, pregnancy, vaginal bleeding due to endocrine disease such as diabetic mellitus, thyroid diseases, liver and kidney diseases, SLE (Systemic lupus erythematosus), coagulopathy, thrombocytopenia and anticoagulant drug users. Informed consent was acquired from all the patients.

Pipelle biopsy was performed at gynecology clinic in lithotomy position. Samples were taken with pipelle catheter after placing speculum and washing the vagina without tenaculum and anesthesia. For difficult cases or angled cervix, tenaculum was used for straightening of uterocervical angle. Endometrial sampling was repeated at insufficient samples and samples were sent to the pathology unit for interpretation.

Dilatation & curretage was performed in operation room with anesthesia and cervical dilatation with dilator. The samples were taken, placed within formalin solution and were sent to pathology unit. The same pathologist was interpreted the samples (pipelle biopsy and dilataion & curttage) in terms of sufficiency or insufficiency and histologic diagnosis. In the end of study, data was recorded in information list. When information was completed, list data was analyzed by SPSS ver 22.

Quantitative variables was reported with using mean, standard deviation and frequency distribution and fisher'extract test was used for comparison of prevalence in samples efficacy.

3. Results

The average age of patients were 44/68 $\pm$ 5.15 (36 - 57 years) and 43/69 $\pm$ 5.27 (35 - 59 years) in D&C and pipelle biopsy groups, respectively. The results of pathology for D&C were reported as normal endometrium, n = 30 (30%), proliferative endometrium, n = 24 (24%), secretory endometrium n = 11 (11%), while for pipelle biopsy were described as proliferative endometrium, n = 26 (26%), secretory endometrium n = 11 (11%), decidual endometrium n = 4 (4%). Results were summarized in Table 1. In this study, 2% of D&C and 12% of Pipelle biopsy were unsatisfactory tissue or un interpretable samples (Table 2).

There was significant statistic difference between D&C and pipelle biopsy based on fisher test (P = 0.01).

Table 1. Comparison of Prevalence of Pathologic Interpretations

Pathology Report	Endometria Sampling Method	
	D & C (Number/Percentage)	Pipelle (Number/Percentage)
Proliferative endometerium	24	26
Secretory endometerium	11	11
Desidual Endometrium	2	4
Endometerium with pill	0	1
Pregnancy endomerium	7	6
Normal endometrium	30	26
endometritis	5	4
Endometrial polyp	4	1
Simple hyperplasia without athypia	9	9
Complex hyperplasia	4	-
Simple hyperplasia with athypia	2	-
Unsatisfactory tissue	2	12
Total	100	100

Table 2. Comparison of Samples in Terms of Efficacy

Efficacy of Samples			Total
	D&C	Pipelle	
Satisfactory	98 (98/0)	88 (88/0)	186 (93/0)
Unsatisfactory	2 (2/0)	12 (12/0)	14 (7/0)
Total	100 (100)	100 (100)	200 (100)

4. Discussion

Endometrial biopsy is one of the most useful methods for abnormal uterine bleeding assessment while pipelle biopsy as the office sampling is a new method in this concept [10, 11]. Pipelle biopsy has many advantages in comparison with D&C. The development of equipment and techniques for office-based endometrial biopsy has generally

replaced the need for diagnostic dilation and currretage (D&C) performed in the operation room [12]. Advantages of office biopsy include [13, 14].

1) Minimal to no cervical dilation is required. 2) local or no anesthesia is generally required. 3) Performing the procedure in an office setting is less expensive than a procedure in the operating room. There is an excellent correlation between the histopathology of endometrial specimens taken by biopsy instruments in the office and D&C. However, since less than 50 percent of the endometrium is sampled, malignancy can be missed. Despite some limitations, numerous studies have shown that the endometrium is adequately sampled with biopsy techniques: A meta-analysis of 39 studies involving 7,914 women compared the results of endometrial sampling with histopathology at D&C, hysteroscopy, and/or hysterectomy [12, 15]. The significant findings from this analysis were: 1) The pipelle device was more sensitive for the detection of endometrial cancer and atypical hyperplasia than all other sampling device [16]. 2) The sensitivity for the diagnosis of endometrial cancer by pipelle in postmenopausal women was 99.6 percent and in premenopausal women was 91 percent. The sensitivity for the diagnosis of atypical endometrial hyperplasia was 81 percent. 3) The specificity for all endometrial biopsy devices for the diagnosis of endometrial carcinoma was 98 to 100 percent. 4) Fewer than 5 percent of patients had an insufficient or no sample. Endometrial sampling was most reliable when at least one-half of the endometrium was affected by disease. Benign endometrial histology includes atrophy, proliferative endometrium, secretary endometrium, disordered or dyssynchronous endometrium and endometritis [17-20]. Further endometrial assessment should be considered when the endometrial biopsy is no medical diagnostic. If endometrial biopsy does not sufficient tissue for pathological diagnosis, then the clinical setting should dictate further management [17, 19].

In this study, samples efficacy and histologic diagnosis of two methods were compared. Maximum percent of pathologic report are normal endometrium and proliferative endometrium in latter. The minimum percent in two methods are atypical endometrium and drug effect endometrium. In the study carried by Abdolazim et al. [10] maximum and minimum of results were proliferative endometrium and atypical endometrium, respectively. In our study 82% pipelle biopsy and 98% of D&C were satisfactory pathologically. In the study by Leng et al. [6] 93% of Samples were satisfactory.

In comparative study performed by Fakhar et al. [7] on women who referred with abnormal Uterine bleeding, 100% D&C and 98% pipelle biopsy samples were satisfactory pathologically.

Kazandi et al. [11] reported that 7% of pipelle biopsy results and 4% of D&C results were unsatisfactory. Data has detected the same success rate for D&C especially for the extensive lesions assessments but pipelle biopsy has limited diagnostic accuracy for focal lesions (one of thirteen endometrial polyp was diagnosed by pipelle biopsy).

Study performed by Mousavifar et al. [9] demonstrates that 94% of pipelle biopsy samples were satisfactory. Considering this research and other studies highlights that the efficacy of samples in pipelle biopsy is acceptable, because this method in comparison with D&C is safe, low invasive, without bleeding and pain and other complications [9, 12]. It is not time consuming.

Although effectiveness of D&C samples is a little more than pipelle biopsy, comparison of sensitivity and specificity of pipelle biopsy and D&C ables to be useful for replacement of pipelle biopsy instead of D&C in the patients with AUB. And it could be the best topic for future research.

4.2. Conclusions

The author compared results of this research in terms of effectiveness with other papers and detected that the samples effectiveness is high. This research recommend for replacement of pipelle biopsy instead of D&C. However, pipelle biopsy is economic and is not time consuming.

In this work, D&C and pipelle biopsy were not performed at the same patients because there were multiple papers about this kind of research and the goal of author was performing useful and economic procedure for low cost patients in Zahedan and areas like here.

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Footnotes

Authors' Contribution: All authors had equal role in design, work, statistical analysis and manuscript writing.

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