

Is hysteroscopy, dilatation and curettage for investigating abnormal uterine bleeding in women under the age of 40 justifiable?

Ay Eeng Tan¹
Rajanishwar Gyaneshwar²
Jenny Bin Shao²
Xuelian Gao³

Abstract

Objective: To assess the justification of hysteroscopy, dilatation and curettage in the management of abnormal uterine bleeding especially in women under 40 years old.

Methods: All cases of hysteroscopy, dilatation and curettage over a three years period (1998-2001) in a regional referral hospital were analyzed.

Results: The procedures were performed in 1168 patients and 758 (64.9%) of them were due to abnormal uterine bleeding. There were 521 cases (68.7%) of normal endometrial histology. In the remaining 173 cases (22.8%) a range of histological abnormality was detected. Of the 14 women with endometrial adenocarcinoma all were over 40 years of age.

Conclusions: In this study the low prevalence of abnormal pathology suggests that a significant proportion of the procedures performed in this study may not be justifiable. With careful evaluation, patients below 40 years of age, in the absence of other risk factors of endometrial malignancy, need not have routine hysteroscopy, dilatation and curettage for abnormal uterine bleeding. When indicated, we recommend less invasive and less expensive assessment using a transvaginal ultrasound and Pipelle device.

Key words: endometrial cancer, abnormal uterine bleeding, hysteroscopy, dilatation and curettage

¹Department of Obstetrics & Gynaecology,
Faculty of Medicine, Universiti Kebangsaan Malaysia,
56000, Cheras, Kuala Lumpur, Malaysia

² Division of Women's and Child Health
Faculty of Medicine, University of New South Wales
Liverpool Health Service, NSW, Australia.

³Division of Women's and Child Health,
Liverpool Health Service, NSW, Australia.
Currently Attending Physician
Dept of O&G, 1st Hospital,
Peking University, Beijing, China

Correspondence:
Dr Tan Ay Eeng
Department of Obstetrics & Gynaecology,
Faculty of Medicine, Universiti Kebangsaan Malaysia,
56000, Cheras, Kuala Lumpur, Malaysia

INTRODUCTION

Abnormal uterine bleeding is one of the commonest presenting complaints in gynaecology. The clinical approach to this common problem is influenced by the patient's age and risk of endometrial malignancy. A detailed history, pelvic examination, cervical cytology and a quality ultrasound should provide an accurate diagnosis in most cases. In younger women, having excluded pregnancy-related complication, obvious local lesion or pelvic mass, a trial of hormonal therapy is the treatment of choice for dysfunctional uterine bleeding. If the problem persists, further investigations may be necessary to exclude pathology. The incidence of atypical hyperplasia or cancer is rare in younger women¹.

In post-menopausal women, the management needs to be more proactive. Though atrophic changes will be the commonest cause of abnormal uterine

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bleeding, there is a significant increase in the incidence of atypical hyperplasia and carcinoma^{2,3}. Therefore in this group the investigation should exclude these possibilities more thoroughly. Hysteroscopy aided endometrial biopsy has become the method of choice for diagnosing endometrial carcinoma⁴. Although diagnostic hysteroscopy and biopsy are relatively safe procedures, these are not without complication especially if general anaesthesia is used. Additionally the expense incurred with this approach is considerably higher. Therefore in the absence of a strong clinical suspicion, alternative approaches such as transvaginal ultrasonography and outpatient endometrial biopsy should be considered. In this study we have reviewed the value of hysteroscopy and dilatation and curettage in the evaluation of women with abnormal uterine bleeding.

METHODS

The study was based at Liverpool Hospital. This is a teaching hospital of the University of New South Wales and tertiary referral center for South-Western Sydney area. All patients who underwent dilatation and curettage between 1 November 1998 and 30 October 2001 were reviewed. Procedures for pregnancy related bleeding was excluded from the analysis. Relevant clinical information were extracted from the hospital databases. All hysteroscopic findings were confirmed by histopathological examination. The hysteroscopies were performed as day surgery cases under general anaesthesia. A rigid 6.5mm continuous flow hysteroscope with saline for uterine distension was used. Curettage was carried out by sharp metal curette. Patients were allowed home several hours later after discharge criteria were met. Normal histology included those reported as proliferative, secretory, shedding, inactive, atrophic endometrium or progestogenic decidualization changes. Abnormal histology included endometrial polyp, endometritis, endocervical polyp, submucous myoma, endometrial hyperplasia, atypical hyperplasia, endometrial adenocarcinoma, uterine sarcoma and others. Data were managed and analysed using the MS Access 97 and SPSS 11.0 Programs.

RESULTS

During the three-year study period, 2260 women underwent dilatation and curettage under general anaesthesia. Removal of retained products of conception after an incomplete miscarriage was the major indication for the use of dilatation and curettage alone. One thousand and one hundred sixty eight (52%) had hysteroscopy performed. The principal indication for combining dilatation and curettage with hysteroscopy was abnormal uterine bleeding (64.9%), followed by pelvic pain (3.9%), infertility (2.3%), suspected polyp (2.4%) and suspected fibroid (0.9%). Thirteen patients were investigated for Tamoxifen related problem (Table 1). In 197 cases, the indication for the procedure was not clearly stated. Normal endometrium was reported in 782 women (66.9%). Pathology results were not available in 85 women (7.3%) due to insufficient specimen. Abnormal pathology was reported in 25.8% of these women (Table 2). Of these 301 women 105 had endometrial polyp. Endometrial adenocarcinoma were found in 19 cases.

Of the 1168 hysteroscopy, dilatation and curettage performed, 758 cases were for the evaluation of abnormal uterine bleeding, 521 (68.7%) showed normal endometrium. Abnormal pathology were found in 173 (22.8%) cases including endometrial polyp (9.2%), endometritis (2.1%), endocervical polyp (2.0%), submucous myoma (1.2%), endometrial hyperplasia (1.6%), atypical hyperplasia (1.8%), endometrial adenocarcinoma (1.8%) and uterine sarcoma (0.1%)(Table 3). Fourteen patients with abnormal uterine bleeding were diagnosed with endometrial adenocarcinoma. The remaining five with endometrium carcinoma had hysteroscopy to confirm a clinical diagnosis based on history and examination.

Patients with endometrial cancer were further reviewed. None of them were younger than 40. Seventeen of the 19 patients with endometrial carcinoma were above 50 years of age. The other two were aged 49 and 50. Most of these women had other risk factors of endometrial cancer such as hypertension, diabetes, obesity and family history. Eighteen women with atypical hyperplasia, two were below 40 years of age (30 and 36) (Table 4). Both were obese and one also had hypertension and diabetes.

Table 1 Indications of hysteroscopy, dilatation and curettage

Indication	Number	Percent
Abnormal uterine bleeding	758	64.9
Pelvic pain	45	3.9
Polyp	28	2.4
Infertility	27	2.3
Fibroid	11	0.9
Tamoxifen related problem	13	1.1
Others	89	7.6
Indication not stated	197	16.9
Total	1168	100

Table 2 Uterine pathology diagnosed at hysteroscopy, dilatation and curettage

Uterine pathology	Number	Percent
Normal endometrium	782	66.9
Endometrial polyp	105	9.0
Endocervical polyp	25	2.1
Endometritis	24	2.1
Product of conception	20	1.7
Submucous myoma	16	1.4
Endometrial hyperplasia	15	1.3
Atypical hyperplasia	18	1.5
Endometrial adenocarcinoma	19	1.6
Uterine sarcoma	1	0.1
Cervical carcinoma	2	0.2
Others	56	4.8
Insufficient specimen	85	7.3
Total	1168	100

Table 3 Uterine pathology diagnosed at hysteroscopy, dilatation and curettage in patients presented with abnormal uterine bleeding

Uterine pathology	Number	Percent
Normal endometrium	521	68.7
Endometrial polyp	70	9.2
Endometritis	16	2.1
Endocervical polyp	15	2.0
Submucosa myoma	9	1.2
Endometrial hyperplasia	12	1.6
Atypical hyperplasia	14	1.8
Endometrial adenocarcinoma	14	1.8
Uterine sarcoma	1	0.1
Others	22	2.9
Insufficient specimen	64	8.4
Total	758	100

Table 4 Age related incidence of genital tract cancer/ pre-cancer at hysteroscopy, dilatation and curettage

Age group	Cervical cancer	Endometrial cancer	Uterine sarcoma	Atypical hyperplasia
<40	0	0	0	2
40-50	0	2*	0	2
>50	2	17	1	14
Total	2	19	1	18

*Aged 49 and 50

DISCUSSION

Several authors have reported that 40 to 50% of women with abnormal uterine bleeding were found to have uterine pathology at hysteroscopy^{2,4,5}. Emanuel et al⁵, from a large teaching hospital in Netherlands, reported a 43.1% yield of abnormal pathology on hysteroscopy, dilatation and curettage in 962 women. The patients were general practitioner's referrals for abnormal uterine bleeding. All were evaluated using hysteroscopy, dilatation and curettage. In the Liverpool study only 22.8% of the 758 women yielded abnormal pathology. All these women had been assessed pre-operatively by gynaecologists. We are unable to explain this difference on the information available. Our study also shows by the selection criteria used in Liverpool over two-thirds of the women had normal histological findings. This may suggest that a significant proportion of the women in our study underwent unnecessary invasive diagnostic procedures in the evaluation of their abnormal uterine bleeding.

We question the appropriateness of invasive and expensive techniques such as hysteroscopy, dilatation and curettage as the routine evaluation of abnormal uterine bleeding especially in women below 40 years of age. While complication arising from hysteroscopy, dilatation and curettage is rare these procedures are not without morbidity. Diagnostic dilatation and curettage alone has been reported to carry small but significant risks including haemorrhage, infection and perforation.^{6,7} We have not been able to find complication rates for diagnostic hysteroscopy but would expect this to be similar. If the procedures are carried out under general anaesthesia, the additional anaesthetic complication should be considered.

In addition to the above concern, the cost implication of unnecessary procedures should be a consideration. Our conservative estimation is that a combined hysteroscopy, dilatation and curettage performed in a day surgery center would cost about AUD\$1200. We would suggest that with more careful clinical evaluation, about 500 of these procedures during the study period could have been avoided. The potential saving of \$600,000 excludes loss of patient earnings, etc.

The major justification for hysteroscopy, dilatation and curettage would be to exclude endometrial malignancy. In reviewing the literature, less than 3% of all endometrial carcinoma arise in women younger than 40 years of age.⁸ The Office of National Statistics in England and Wales reviewed registration of cancers diagnosed between 1993 and 1996. They reported the incidence of endometrial carcinoma as 5

per 100 000 at 40 years of age.¹ Fewer than 2% of new registrants were under the age of 45. In our study the youngest woman with endometrial cancer was aged 49. We would conclude therefore women less than 40 years old could be safely evaluated using less expensive and less invasive techniques.

There are several alternatives available for evaluating patients with abnormal uterine bleeding. Transvaginal ultrasound (TVS) measurement of endometrial thickness (ET) is a highly sensitive and less invasive method. During the early follicular phase, the ET is usually less than 5 mm, approaching 10 mm at ovulation. In the post-menopausal the lining is 1-3 mm in thickness. ET of more than 14 mm in premenopausal and greater than 5 mm in post-menopausal women requires further investigation.⁹ Smith-Bindman et al. in a meta-analysis of 35 prospective studies demonstrated that the sensitivity of transvaginal ultrasonography for diagnosing endometrial carcinoma in postmenopausal bleeding varied according to the ET used as normal value. He concluded that at a cut-off point of less than or equal to 5 mm, the sensitivity was 95% with a specificity of 55%.¹⁰ A potential problem with conventional 2D ultrasound is that it may not differentiate between endometrial hyperplasia and polyps. This can be overcome by using 3D endometrial volume measurement.¹¹ Another option is to perform a 2D transvaginal ultrasound with simultaneous infusion of saline into the uterine cavity. This is useful in detecting intrauterine focal lesions such as submucous myoma.^{12,13} Three-dimensional hysterosonography has been shown to provide even better visualization of the uterine cavity and endometrium. This has been reported to be superior to hysteroscopy.¹⁴ More recently, Makoto²³ showed that although there were no patients with endometrial cancer with ET measuring <5mm, no significant difference was found in the mean value of ET between patients with endometrial hyperplasia and carcinoma. No patients with endometrial hyperplasia showed any blood flow in the endometrial lesions. On the contrary, intramural blood flow was detected in 72% of endometrial carcinoma. He concluded that transvaginal colour Doppler ultrasound(TV-EDU) may be more useful in differentiating between endometrial hyperplasia and endometrial carcinoma than measuring endometrial thickness by transvaginal gray-scale sonography. This approach needs further clinical evaluation.

Outpatient endometrial sampling using the Pipelle device has been reported to be sensitive in detecting endometrial pathology.^{15 & 16} However the sensitivity is dependent on selection criteria and technique.^{17, 18} Pipelle sampling alone may miss some benign uterine pathologies such as polyps and submucous myoma.¹⁹

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Ferry et al. found that when used alone the device failed to detect 33% of endometrium carcinoma.¹⁸ However when it is used in combination with ET evaluation the sensitivity and specificity improve significantly.²⁰ Transvaginal sonography and Pipelle endometrial biopsy has been shown to be safe and effective first line investigation in the management of abnormal uterine bleeding.

Hysteroscopy can be used as an adjunct when indicated.¹⁹ Where diagnostic hysteroscopy is considered essential we advocate its use as an outpatient procedure using local anaesthesia. This should be considerably more convenient and less expensive than if performed under general anaesthesia. Several series have demonstrated it as a safe and reliable alternative without compromising diagnostic sensitivity.^{2,19,24}

Dunn et al.²² recommend a cost-efficient, risk-based clinical pathway for evaluation of abnormal uterine bleeding. Following history and physical examination, patients were grouped according to their menopausal status and risk of endometrial carcinoma. The first line management for the low risk group was medical treatment or adjustment of HRT for the postmenopausal HRT users if there was no

improvement in symptoms, endometrial biopsy and ultrasonography assessment was performed. They tested this approach in managing 1000 patients over a 3-year period. They were able to treat 44% of their patients medically without requiring endometrial biopsy.

CONCLUSION

The low prevalence of abnormal pathology (22.8%) on hysteroscopy, dilatation and curettage in this study raises the concern of patient selection for these procedures. Significant proportion of the procedures performed in this study appears not to be justifiable. We recommend that patients with abnormal uterine bleeding below 40 years of age in the absence of other risk factors and after careful evaluation need not have hysteroscopy, dilatation and curettage. Less invasive and expensive assessment using a transvaginal ultrasound and Pipelle device offers a reasonable alternative approach. If hysteroscopy is required, this should be performed as an outpatient procedure.

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