*For Debate . . .***An alternative to the diagnostic dilatation and curettage—endometrial cytology**

D W POLSON, A MORSE, R W BEARD

Abstract

Endometrial aspiration cytology has been shown by multicentre prospective studies to be an acceptable and valuable method of assessing the endometrium. A retrospective study was undertaken over three years' routine use of the Isaacs cell sampler. In 86% of the cases suitable endometrium was obtained, with experience of the technique being the important factor. When compared with histological findings, all 11 cases of malignancy were confirmed, including one ovarian adenocarcinoma. Of the cytological reports of endometrial hyperplasia, 78% were confirmed by the histological findings, with the remainder showing minor degrees of cystic hyperplasia or normal endometrium. In no case was a more abnormal lesion present on histological examination than had been suggested by cytological findings. The use of progestogens in reversing hyperplasia is seen to be effective, though the long term benefit remains uncertain.

It is concluded that with an experienced cytologist, Isaacs endometrial aspiration should be used routinely for the primary investigation of dysfunctional uterine bleeding and postmenopausal bleeding.

Introduction

Endometrial aspiration using the Isaacs cell sampler has been used regularly at the Samaritan Hospital for eight years as a routine gynaecological outpatient investigation. This technique is simple, quick, safe, and acceptable to the patient,^{1 2} and several prospective studies have emphasised the diagnostic accuracy of the method.¹⁻⁴ A retrospective review has been undertaken to confirm that endometrial cytology in routine use is an accurate method of determining the state of the endometrium and to see the effect on management of patients.

Patients and methods

From January 1980 to December 1982 endometrial aspirates were obtained from 709 women: 607 in the gynaecology clinic at the Samaritan Hospital, 62 from the Raymede Family Planning Clinic, and 40 from private consultations. None of the women received anaesthetics, and the Isaacs endometrial aspirator was used in all cases, as previously described.^{3 5} Table I shows the indications for endometrial aspiration.

There was a considerable variation in the experience of the medical staff performing the aspiration, from the most junior senior house officer through all the registrar grades to consultant.

The cytological findings were reported by a single cytologist; earlier work has clarified the cytological changes during the menstrual

Samaritan Hospital for Women, London NW1

D W POLSON, MB, BS, senior house officer

A MORSE, CFAC, chief medical laboratory scientific officer

Department of Obstetrics and Gynaecology, St Mary's Hospital Medical School, London W2

R W BEARD, MD, FRCOG, professor of obstetrics and gynaecology

Correspondence to: Professor R W Beard.

TABLE I—Indication for endometrial aspiration in 709 women seen during study period (excluding any patients included in prospective studies)

	No	%
Gynaecological symptoms, including dysfunctional uterine bleeding and postmenopausal bleeding	355	50
Hormone replacement treatment	139	20
Follow up of previous problem—for example, hyperplasia found at curettage	103	15
Routine	62	9
Trial (not published)	50	7

cycle and those changes characteristic of hyperplasia and malignancy.^{4,6} To help in the management of patients, cases of hyperplasia were classified into those with well marked proliferation, possibly amounting to cystic hyperplasia, and those with features consistent with cystic hyperplasia.

In several cases samples from the endometrium had been obtained for histological assessment within two months of the aspirate. Samples taken more than two months after the aspirate were excluded in view of the natural continual fluctuation of the endometrium. This therefore allowed a reliable comparison to be made between histological and cytological findings.

Three groups were studied. A total of 520 aspirates were cytologically normal; 307 of these were from women with gynaecological symptoms, and these 307 women formed one group. This group seemed the most likely to have a diagnostic curettage, and in 48 cases histological samples were available. Group 2 comprised the 81 cases from whom the aspirates were cytologically abnormal; in 30 cases histological specimens were available. A total of 51 patients presenting with postmenopausal bleeding made up the third group.

All the histological specimens were reported by a single pathologist. The reports described a benign, proliferative, or secretory phase; mild, moderate, or severe cystic hyperplasia; mild, moderate, or severe atypical hyperplasia and malignancy.

A few women with endometrial hyperplasia were treated with cyclical norethisterone. After three to six months a sample of endometrium was obtained for either cytological or histological re-assessment.

Results

A sample of endometrium suitable for cytological assessment was obtained in 601 of the 709 cases (85%). A total of 529 aspirates were taken by consultants or senior registrars and 180 by senior house officers. The consultants and senior registrars failed to obtain endometrial cells suitable for cytological assessment in 47 (9%) cases, whereas senior house officers failed in 61 (34%) cases. This difference was significant ($\chi^2=43.57$, $p<0.001$).

Of the 601 cases in which cytological assessment was studied, 520 were normal with proliferative or secretory endometrium. Table II shows the results for the remaining 81 and compares the results with indications for the aspirate.

In 48 cases from group 1 (normal cytological findings) and 30 cases from group 2 (abnormal cytological findings) histological specimens had been obtained within two months. Table III compares the histological and cytological appearances in these cases.

Of the 51 women in group 3 one third (17) had abnormal aspirates. Two were reported as having abnormalities suggestive of cystic hyperplasia and were managed as outpatients. The remaining 15 were admitted for curettage. Of the 34 patients with normal aspirates in group 3, 21 were admitted for curettage; six had no curettages and two were unfit for anaesthesia. Table IV compares the histological and cytological findings.

Our retrospective study also supports earlier findings of a detection rate of 20-70% for endometrial neoplasia with cervical cytology.^{8,9} Of our 10 cases only five had malignant cells on the routine cervical smear.

All seven women with cystic and atypical hyperplasia who received treatment with progestogens had reverted to normal over a three to six month period. In one case of severe atypical hyperplasia, a reversal through to severe cystic hyperplasia, mild cystic hyperplasia, and finally to normal endometrium was seen. It is interesting that this last report was in the specimen obtained at hysterectomy, as the progestogen had failed to control the patient's heavy bleeding.

Discussion

Routine use of the Isaacs sampler obtained endometrial material suitable for cytological assessment in 85% of the cases. This is slightly lower than the rate in prospective studies^{5,7} and is clearly related to inexperience in the use of the technique among the junior staff and, to some extent, the more senior staff. With instruction, we believe that successful aspirates should be obtained in 95% of cases.

TABLE II—Details of cytological abnormalities found in endometrial aspirates related to indication for aspiration

	Gynaecological symptoms	Follow up of previous problem	Receiving hormone replacement treatment	Routine	Total
Cystic hyperplasia	26	12	7	4	49
Cystic and atypical hyperplasia	2	4			6
Atypical hyperplasia	6	7	2		15
Malignancy:	11				11
Endometrial adenocarcinoma	9				
Endometrial sarcoma	1				
Ovarian adenocarcinoma	1				
Total	45	23	9	4	81

TABLE III—Comparison of cytological and histological findings in 78 cases of endometrial abnormalities

Cytological findings	Histological findings				
	Normal	Cystic hyperplasia	Cystic plus atypical hyperplasia	Atypical hyperplasia	Malignancy
Normal	45	2	1		
Cystic hyperplasia:					
Suggestive of	3				
Consistent with	3		3		
Cystic plus atypical hyperplasia	2		1		
Atypical hyperplasia	1		1	3	
Malignancy					11

TABLE IV—Comparison of cytological and histological findings in 51 women presenting with postmenopausal bleeding

Cytological findings	Aspirate only	Admitted for curettage			
		Unfit for general anaesthesia	No curettages obtained	Histological findings	
				Normal	Cystic hyperplasia
Normal (n=34)	13	2	6	12	1
Suggestive of cystic hyperplasia (n=2)	2				
Cystic plus atypical hyperplasia (n=2)			1		1
Atypical hyperplasia (n=3)			1		
Malignancy (n=10)					2
					10

Comparison of cytological with histological findings shows clear discrepancies, primarily in the minor degrees of cystic hyperplasia, which are often difficult to categorise. It is important to note that in no case was a more advanced hyperplasia seen on histological examination than was detected by cytology and, in particular, all the cytological reports of malignancy were confirmed.

Cytological examination is clearly of special value in the investigation of women with postmenopausal bleeding, in whom there are much greater risks associated with general anaesthesia and in a high percentage of whom no curettings are obtained.

The management of the women with evidence of cystic or atypical hyperplastic changes in the endometrium is still unresolved. Progestogens can clearly be used to reverse these changes, though there may be no symptomatic improvement and this may precipitate surgical intervention. It is also likely that the endometrium will become abnormal again, because the tendency to hyperoestrogenism remains. Endometrial aspiration is obviously a useful method of screening for such a change, though much work still needs to be done to determine the clinical validity of treatment with progestogens in these women.

It is clear that the single most important criterion is the cytologist's ability in reporting the findings. We hope that the results of this study will stimulate further interest among gynaecologists and cytologists. It is only with the gynaecologist's trust in the method that the cytologist or histologist will be able to obtain the necessary experience.

This review of routine clinical experience therefore confirms our earlier findings in controlled prospective studies—namely, that endometrial aspiration can be used for the preliminary

screening of women who are at risk of endometrial carcinoma. We recommend it as the primary investigation in women with dysfunctional uterine bleeding and bleeding during and after the menopause. There are obvious benefits both for the women in our care, as unnecessary hospital admission and anaesthesia are avoided, and also for the health service, as waiting lists are reduced and finances conserved.

References

- ¹ Anforaker SH, Kawada CY, McKinney D. Endometrial aspiration studies on Isaacs cell sampler with cytohistologic correlation. *Acta Cytol (Baltimore)* 1979;**23**:303-8.
- ² Segadal E, Iversen OE. The Isaacs cell sampler. An alternative to curettage. *Br Med J* 1980;**281**:364-5.
- ³ Hutton JD, Morse AR, Anderson MC, Beard RW. Endometrial assessment with Isaacs cell sampler. *Br Med J* 1978;**ii**:947-9.
- ⁴ Morse AR, Ellice RM, Anderson MC, Beard RW. Reliability of endometrial aspiration cytology in the assessment of endometrial status. *Obstet Gynecol* 1982;**59**:513-8.
- ⁵ Isaacs JH, Wilhoite RW. Aspiration cytology of the endometrium: office and hospital sampling procedures. *Am J Obstet Gynecol* 1974;**118**:679-87.
- ⁶ Koss LG, Durfee GR. Cytologic diagnosis of endometrial carcinoma. Result of ten years' experience. *Acta Cytol (Baltimore)* 1962;**6**:519-31.
- ⁷ Ellice RM, Morse AR, Anderson MC. Aspiration cytology versus histology in the assessment of the endometrium of women attending a menopause clinic. *Br J Obstet Gynaecol* 1981;**88**:422-5.
- ⁸ Hecht EL. Cytological approach to uterine carcinoma. *Am J Obstet Gynecol* 1952;**64**:81-90.
- ⁹ Rascoe RR. Endometrial aspiration smear in diagnosis of malignancy of uterine corpus. *Am J Obstet Gynecol* 1963;**87**:921-5.

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Clinical Topics

Guidelines for initial management after head injury in adults

Suggestions from a group of neurosurgeons

Recent studies in the United Kingdom, the United States, and Australia have shown how variable is the part played by neurosurgeons in the management of patients with head injuries,¹⁻⁴ and focus attention on how often avoidable mortality and morbidity occur.⁵⁻⁶ The most common avoidable factor is delayed detection of features that can lead to secondary brain damage. These include intracranial haematoma, open skull injury, and extracranial injuries and complications. The

objectives of management therefore should be to prevent secondary brain damage by prompt diagnosis and treatment of these conditions and then to promote the fullest possible recovery and social integration of survivors.

Concepts of certain intracranial events that occur soon after injury are changing in the light of evidence from computed tomography. In particular, it is clear that intracranial haematomas are more frequent and develop sooner after injury than was previously realised. With computed tomography haematomas can sometimes be detected before serious cerebral compression has become clinically obvious; this facilitates early surgical intervention, which in turn appreciably reduces mortality and morbidity.^{7 8}

Changes in policy designed to improve the management of head injuries in the UK need to take account of local organisational factors, including the facilities available to various specialists in different parts of the country. The need to re-deploy regional resources to maximise the effective use of avail-

Members of group: M Briggs, Oxford; P Clarke, Middlesbrough; A Crookard, London; B Cummins, Bristol; S Galbraith, Glasgow; J Garfield, Southampton; R Jeffreys, Liverpool; B Jennett, Glasgow; R Kalbag, Newcastle; A D Mendelow, Glasgow; J D Miller, Edinburgh; D Price, Bradford; J Taylor, Derby; G Teasdale, Glasgow; D Uttley, London.

Correspondence to: Professor Bryan Jennett, Institute of Neurological Sciences, Southern General Hospital, Glasgow G51 4TF.