Clinical Topics

The Isaacs cell sampler: an alternative to curettage

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Summary and conclusions

The Isaacs cell sampler was tested in 150 women (102 of them postmenopausal) referred for curettage. The results of cytological testing of material obtained with the sampler were compared with histological findings from curettage performed immediately afterwards. Satisfactory aspirates for cytological diagnoses were obtained in 141 patients and satisfactory material for histological diagnosis in 124. In the 102 postmenopausal patients the cytological method yielded 94 satisfactory specimens, while curettage yielded only 76.

All the 17 carcinomas were diagnosed cytologically. Of the 12 cases of premalignant change, nine were diagnosed cytologically; two cytologically diagnosed premalignant cases did not, however, yield satisfactory material by curettage.

The Isaacs cell sampler is a simple and reliable way of diagnosing malignancies. Further investigation is needed to define the cytological criteria for diagnosing premalignant cases, but as the material is well preserved accuracy should improve with increasing experience. The method should be valuable in screening women having oestrogen substitution therapy.

Introduction

The Isaacs cell sampler was introduced for cytological endometrial diagnosis in 1974¹ and has been tested in England by two groups. One group² concluded that the technique was safe, quick, comfortable, and reliable for assessing the endometrial state, but the other did not obtain satisfactory results.³

Patients and methods

One hundred and fifty women (102 postmenopausal) who were admitted for curettage from September 1978 were also tested with the Isaacs cell sampler. Their indications for curettage were postmenopausal bleeding (79), menorrhagia or metrorrhagia (38), pelvic tumour (11), myoma uteri (6), cervical lesions (8), and other reasons (8).

Sampling with the Isaacs cell sampler, which was performed immediately before curettage, was done according to the method of Isaac and Wilheite.¹ During the first weeks of the study it was done by only one clinician (OEI), but later most of the medical staff of the department of gynaecology performed the procedure. The aspirate was smeared on to four glass slides, which were immediately placed in 96% alcohol and stained with Papanicolaou stain.

Material was accepted as adequate when there was a rich yield of tissue fragments and many single cells. It was classified as: carcinoma, atypical hyperplasia, adenomatous hyperplasia, and miscellaneous, including normal, cystic hyperplasia, and atrophic endometrium (according to criteria given by Anne Morse at meeting of Royal Society of Obstetricians and Gynaecologists, London, July 1978). The carcinomas were further classified according to type and degree of differentiation, but we did not differentiate between secretory and proliferative patterns or try to identify cases with cystic hyperplasia.

The histological classification after curettage was carried out routinely according to the criteria of the World Health Organisation.⁷ The cytological and histological interpretations were made independently but on the same data.

Results

Satisfactory specimens were obtained for cytological diagnosis in 141 patients and for histological diagnosis in 124. Among the 102 postmenopausal women 94 yielded adequate cytological specimens and 76 adequate histological specimens (table I).

TABLE I—Adequacy of cytological and histological specimens

	No of women	Cytology		Histology		Inadequate for both cytology and histology
		Adequate	Inadequate	Adequate	Inadequate	
Premenopausal	48	47	1	48	0	0
Postmenopausal	102	94	8	76	26	5
Total	150	141	9	124	26	5

Recent findings on the relation between the use of oestrogen and endometrial abnormalities has heightened the need for a screening method for assessing endometrial state.^{4,5} Having previously tested the Gravlee Jet washer⁶ we have now tested the Isaacs cell sampler to assess its value in routine screening.

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The diagnoses agreed in 118 cases (table II). Cytological examination diagnosed all 17 cases of cancer but only nine of the 12 cases of premalignant change. Two of the remaining three patients had adenomatous hyperplasia, and the third, who had histologically atypical hyperplasia, did not yield a representative sample for cytological testing. One patient who was diagnosed as having adenomatous hyperplasia on cytology had normal histological findings; while two others with cytologically diagnosed premalignant lesions did not give representative material on curettage.

Three of the 17 cancers were cancers of the cervix with endocervical localisation. They were classified as poorly differentiated carcinomas and the possibility of cervical origin was indicated in the report.

The Isaacs cell sampler generally gave small fragments of tissue consisting of glandular structures surrounded by various amounts of

stroma. In premenopausal women material left in the cannula after preparation of the cytological slides provided satisfactory histological material.

Discussion

The Isaacs cell sampler proved promising in yielding material suitable for detecting premalignant and malignant lesions of the

our gynaecological department. Instead of routinely performing curettage we will consider a normal clinical examination combined with normal cytological findings with the Isaacs cell sampler and normal cervical cytology as sufficient examination. If abnormalities are detected on any of these examinations we will perform curettage. Using the Isaacs cell sampler as a screening procedure in this group of women we hope to reduce unnecessary admissions and use our resources better.

TABLE II—Combined results of cytology and histology

Cytology	Histology				
	Normal	Inadequate	Adenomatous hyperplasia	Atypical hyperplasia	Carcinoma
Normal	90	19	2		
Inadequate	3	5		1	
Adenomatous hyperplasia	1	1	4		
Atypical hyperplasia	1	1	3	2	
Carcinoma					17

endometrium. In postmenopausal women the cell sampler obtained a higher proportion of adequate samples than curettage.

Though all cases of malignant change were diagnosed cytologically, there were problems in the premalignant cases of stating the degree of atypia. With increasing experience these difficulties will probably be overcome because the material is usually well preserved and rich in cytological details. The conflicting results of other authors^{2,3} may be explained by the fact that the method is a new one and the criteria are not fully established.

Minor lesions lying deep in the endometrium may present a problem for the Isaacs cell sampler, as was shown in two of our cases of adenomatous hyperplasia, where the cytological report was negative and the histological report described tiny focal areas of adenomatous hyperplasia. Heavy bleeding may also prevent sampling.

On the basis of our experience we plan to change our method of screening patients with postmenopausal bleeding referred to

References

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A patient has been taking a single 5 mg-dose of chlorthalidone (Librium) daily for some years now. How may he best be weaned off it?

Even in a small therapeutic dose, benzodiazepines may produce symptoms and signs of withdrawal in some patients during weaning. In most patients having long-term treatment with a small dose, however, dependence is predominantly psychological, and if a small regular dose has helped the patient for several years there is no harm in continuing it. The best way to wean a patient off any drug is by gradual reduction of dosage accompanied by much support and reassurance. No other psychotropic drug should be substituted as this again introduces the risk of developing dependence. With a drug such as chlorthalidone, which has a long half life and is only being taken in a tiny dose, the easiest technique is gradually to increase the intervals between the doses, perhaps by omitting the drug on one day of the first week, two days the second week, and so on.

What are the risks from radiation exposure of carrying out a single anteroposterior radiograph of the spine on adolescents taking part in a pilot study for screening early idiopathic adolescent scoliosis?

It is impossible to avoid natural background radiation in the general population. Diagnostic radiology provides the next greatest genetically significant contribution (about 25% of the natural background radiation). No "safe" dose of radiation exists; risk must be balanced against benefit. In this example the genetic risk is negligible, especially with gonadal shielding, collimation of the beam, and higher speed film-screen combinations. The carcinogenic risk is not significant with a single film, but a recent study on long-term treatment of adolescent scoliosis showed that multiple repeated radiation to the

breast in girls increased the incidence of carcinoma.¹ Obtaining a posteroanterior radiograph rather than the more usual anteroposterior projection dramatically reduced the increased risk of breast cancer in this group from 150 to 5.3 per million; this technique is therefore advised in all such examinations. Pregnant girls should be excluded from the study by examining girls only in the ten days after the onset of menstruation. If care is taken to ensure good radiographic practice and the return in terms of increased information is considered worth while a single radiograph of the spine does not constitute a significant increased risk to the subject.

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Is there any contraindication to a children's dentist who is pregnant administering nitrous oxide?

Vessey¹ concluded from a study of the evidence available that there is a moderate increase in the risk of spontaneous abortion in women working in operating theatres. Cohen *et al*² reported that exposure to nitrous oxide in dental surgeries increases the risk of spontaneous abortion by 111%. It would seem wise for the dentist not to use nitrous oxide in the first months of pregnancy unless effective scavenging at all times can be ensured. It is also necessary to exclude any other cause of repeated miscarriage.

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