Acceptability of the Cytopipette in a General Hospital

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Summary: Altogether 2,798 cytopipette smears have been taken by patients entering the general medical and surgical wards of a hospital. Twelve unsuspected positive smears were found, a rate of 4 per 1,000. Biopsy of these patients has shown five pre-malignant lesions, one invasive carcinoma of cervix, and one carcinoma of corpus uteri. Five patients await biopsy.

The cytopipette is both acceptable to the patient (62% acceptance) and a feasible laboratory technique and can produce good cytological smears. Only 30% of patients entering the hospital had already had the opportunity to obtain a smear before, and most of them welcomed the opportunity for the test.

Though the self-pipette may be criticized for its inaccuracy we feel that any test, if it can detect cervical abnormality at the rate of 4 women per 1,000, is better than no test at all. It should have a place in routine cytological testing of women second only to the use of Ayre's spatula.

Introduction

The problem of who takes the cervical smear has been discussed for as long as the test has been used as a preventative health measure. The *British Medical Journal* (1965) favoured a doctor's full pelvic examination and reassurance as the ideal procedure for a well-woman clinic. Women are not easily persuaded to attend a clinic, however, and it became obvious that to screen a proportion of the women at risk various methods would be needed. This department has investigated a number of ways in which cervical smears may be taken. Public health and family planning clinics, hospital antenatal and gynaecological patients, and general practice and factory communities were screened and the authorities responsible for these clinics encouraged the well women to attend (McLaren and Attwood, 1961; Lucas and Williams, 1967). It was apparent, however, that as a teaching hospital we were completely failing to screen a large readily available group of women—namely, all female admissions to the general wards of this hospital as distinct from routine gynaecological admissions. This paper describes the feasibility of obtaining routine cervical smears from all hospital inpatients.

Methods

During 1964-6 a pilot study was made by this department into the use of the Davis (1962) cytopipette, which had received so much criticism on its introduction to Britain (McGregor, Fraser, and Mann, 1966; Muskett, Carter, and Dodge, 1966). A survey of a local factory community and a general practice was made and both the acceptance of the test by the women and the prevalence of abnormal smears

(which when biopsied were proved to be from abnormal epithelium) encouraged us to investigate the feasibility of using the pipette for hospital inpatients.

The project was started on four wards only. As a routine method was satisfactorily developed patients were included from further wards, new wards being added at the rate of about one a month. There are about 6,100 female admissions to the Queen Elizabeth Hospital each year for acute and chronic medical and surgical conditions. Because of the gradual introduction of the test on to the wards only 4,531 patients out of a possible 9,000 were approached in the first 18 months, from 1 January 1968 to 30 June 1969. At present all female patients other than those admitted for known carcinoma of the cervix, those in intensive care, or neurosurgical and acute psychiatric patients are offered the opportunity of taking the test.

As this was a pilot experiment it was not possible to provide medical staff to take the cervical smears or involve the resident medical staff in this extra examination during routine admission. If a repeat smear was requested a cervical smear was taken by speculum and a full pelvic examination made. If further investigation was necessary as a result of a report, the gynaecological staff would carry this out at the request of the consultant under whose care the patient was admitted.

The project began on 1 January 1968 with the co-operation of the nursing and administrative staff. Technicians from this department made a daily round, taking pipettes and written instructions to all the females admitted on the wards notified to them by the admissions officer. Each patient had the cytopipette test explained to her and was then given a set of instructions to take the test herself. If necessary she was further encouraged by the nursing staff to perform this simple test. The pipettes were then collected and returned to this laboratory for processing and screening.

Results

Of the 4,531 hospital inpatients available 2,798 (62%) performed the test. The cytology grades of smears in these tests were: normal in 2,311, suspicious in 108, positive in 34, and not satisfactory in 345. Of the 108 patients with suspicious smears 11 were known to have cancer of the cervix; 97 smears were from patients with no pelvic symptoms, and these patients are being followed up both clinically and cytologically. On repeating the smear in these 97 patients by a routine cervical scrape three were graded as positive and classified by the cytologist as "pick ups"—that is, unsuspected positives. Of positive smears obtained from the 34 patients 25 were from cases of known cancer of the cervix. Nine patients were therefore classified as pick ups.

The pathological diagnoses of tissue from the 12 patients with unsuspected positive smears were: carcinoma in situ in four, dysplasia in one, carcinoma of the cervix in one, and carcinoma of corpus uteri in one. In five patients a diagnosis was not proved—two were awaiting biopsy, one had emigrated, and two were too ill.

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For the following reasons 1,733 patients did not take the test: 301 (6.6%) refused, 463 (10.2%) were too old or too young, 236 (5.2%) were too ill, 259 (5.7%) were discharged from hospital before the test, and 474 (10.5%) gave miscellaneous reasons.

These results compare with our experience of this method in unpublished figures from general practice patients and a factory community. An invitation was made to 2,000 female factory workers by their medical officer to accept a pipette and instructions to test themselves—965 (48%) accepted the pipette and returned it to this laboratory. Pipettes were also sent through the post to 1,587 patients aged 20 to 50 years from a general practice to use in their own homes—966 (68%) were returned used to this laboratory.

Of the factory workers five had positive smears and seven had suspicious smears; of the general practice patients the figures were four and 12 respectively. The pathological diagnoses of the positive smears in the factory workers were: carcinoma of the cervix in one, carcinoma in situ in three, and dysplasia in one; and of the general practice patients one had carcinoma of the cervix, one had carcinoma in situ, and two had dysplasia.

A total of 1,500 consecutive hospital patients were asked whether or not they had had a previous cytological smear before entering the hospital. Only 30% (500 patients) had already had the test.

Discussion

These results show that to screen routine hospital patients is feasible. If it is not possible to obtain a cervical scrape from a patient because of lack of opportunity or apathy on the part of the patient the "do-it-yourself" pipette has a definite pick-up rate and is better than no test at all. It was possible to persuade 62% of all the patients to accept the test compared with an acceptance rate of this method of 48% in a factory community and 68% in general practice patients. This is a far greater rate of acceptance than at a well-woman clinic. When the test is offered to the community outside hospital apparently only 30% of our patients had the opportunity or interest to have this test before admission to hospital, and this is a group of women of whom most are in the so-called at-risk group, the "over 35s." This finding is at some variance with published optimistic figures of the Department of Health and Social Security.

The value of the cytopipette to the patient in hospital soon became apparent. Patients were often introduced to the test for the first time and their fears about the test were allayed. Refusal to perform the test (6.6% of those approached) was low, and with increasing experience the staff soon learnt to persuade this type of patient of its simplicity and value. Handling and processing of the pipette became a routine and was easily incorporated into the department's work.

The technical interpretation of these smears requires experience. After an initial period of familiarization with the appearances of the smear the cytologist need have no difficulty in its interpretation. Of the total smears 12% were classified as unsatisfactory because of a low yield of cells. This high figure is disturbing, as Koch and Stakemann have shown (1964) that these unsatisfactory smears may be obtained from a group of patients with frank carcinoma of the cervix.

We cannot agree with those workers who have criticized the self-pipette method as inaccurate and unwieldy. We do not know how inaccurate is our cervical scrape and how often it misses a positive lesion and therefore cannot directly compare its pick-up rate with the cytopipette. What is important is that the cytopipette has a pick-up rate (4 per 1,000), and in a group of women we had previously neglected to screen 11 patients were found by this method to have malignancy or pre-malignancy of the cervix and one had carcinoma of the corpus uteri. These women were in hospital under investigation and might have left without the diagnosis of pre-malignant or malignant disease of the cervix being made if they had not used this simple test.

The case history of one patient is presented to illustrate the scope of the project. This patient had no gynaecological symptoms and is classified as a pick-up.

The patient was a married woman aged 45. A cytopipette result on 2 October 1968 showed a grade IV positive smear with differentiated and undifferentiated squamous cells. A cervical scrape on 14 October gave a further positive result and colposcopy of the cervix showed severe dysplasia and carcinoma in situ with glandular involvement. Cone biopsy of the cervix on 15 November showed carcinoma in situ with one area of possible microinvasive carcinoma.

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