

# Gynaecology in General Practice

## Exfoliative Cytology in General Practice

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Though exfoliative cytology of the cervix has been practised for some time in large centres, it is only in the past five years or so that facilities have been widely available. This has resulted in a rapid increase in the number of women having cervical smears. In East Lincolnshire (and probably also in other areas) over half of the smears dealt with by the cytology laboratory are now taken by general practitioners.

### Objects

Cervical cytology is the examination of exfoliated cells from the surface of ectocervix and lower cervical canal. In early invasive carcinoma of the cervix malignant cells may be shed before the condition is clinically recognizable. In carcinoma-in-situ, which precedes some or all cases of invasive carcinoma, malignant cells may be exfoliated as many as ten or fifteen years before the condition spreads beyond the basement membrane of the epithelium and becomes invasive. Thus the regular cytological examination of exfoliated cells should enable carcinoma-in-situ to be recognized before invasive carcinoma develops.

Nevertheless, it is not yet clear whether all cases pass through an in-situ phase, or whether all cases of carcinoma-in-situ eventually progress to invasive carcinoma if left untreated. Studies on this subject—for example, Fidler, Boyes and Worth,<sup>1</sup> Green and Donovan<sup>2</sup>—have produced widely differing results, and it is likely to be many years before the problem is resolved. In the meantime the detection of cases of carcinoma-in-situ and early invasive carcinoma by exfoliative cytology is undoubtedly saving lives and should be continued on as large a scale as time and facilities allow.

### Uses in General Practice

Cervical cytology has two main uses in general practice. Firstly, a smear should be taken during the pelvic examination of women with gynaecological symptoms, especially those whose symptoms or signs suggest disease of the cervix. Secondly, a smear may be taken as a screening procedure during routine pelvic examinations (antenatal or postnatal patients, women on oral contraceptives, etc.), at the patient's request, or as part of an active screening campaign when patients are attending as a result of being persuaded by the doctor. How far an individual doctor or practice spreads the cytological net will depend on his interest in the subject and the time he has available, but it seems reasonable to suggest that any except the last indication should be regarded as the

absolute minimum. The general practitioner is the ideal person to undertake active screening because of his close contact with his patients, especially the lower income groups, who are at the greatest risk and who are the least likely to request smears themselves. Appeals from him to attend for smears are likely to achieve a better response than those from other sources.

Active screening requires careful organization if it is to be successful, and an age/sex register is helpful. Smear sessions may be held at regular intervals, and if desired can be expanded to include other screening procedures such as breast, urine, and haemoglobin examination.<sup>3</sup> This is made much easier if nursing staff are available to help. Alternatively screening can be concentrated into a week or two of intensive activity with sessions every evening. This may be confined to smears or enlarged into a multiscreening exercise by the inclusion of other tests.<sup>4</sup>

### GROUPS AT SPECIAL RISK

The overall pick-up rate of positive smears is between five and ten per thousand women attending for the first time, but at least five factors increase the rate. Firstly, lower social status (social classes 4 and 5 have a higher incidence than classes 1, 2, or 3); secondly, high parity; thirdly, early age of first intercourse and frequency of intercourse; fourthly, promiscuity (probably related to poor hygiene); and, lastly, the highest incidence occurs in the age group of 30 to 55, though regular screening should be extended to at least as low as 25.

In the absence of symptoms the Department of Health recommends that smears should be done every five years. Nevertheless, probably some cases with a short in-situ period are missed under these circumstances and if time is available three years seems a more reasonable recommendation, though even this may not be frequent enough.

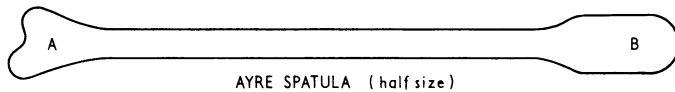
### Equipment Required

A great deal of time may be saved if one is properly organized, and the following equipment is essential. Firstly, a good light—for example, an Anglepoise or similar lamp. A more expensive alternative is to use a speculum which incorporates a light. Secondly, a bivalve speculum, either steel or the newer disposable type. The latter reduce the risk of cross-infection, but are expensive if a lot of screening is done. These are available from Gillette Industries or Aschmann Bros. and Walsh, and cost about 18p each. Steel specula need to be sterilized between patients and boiling is the most efficient method in the surgery. This means that during a smear session several will be required. An alternative method, not ideal in theory but very good in practice, is to keep the speculum immersed in 20% cetrimide between examinations. Thirdly, a standard cytology kit, available from the hospital

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laboratory or pharmacy containing an Ayre spatula, slides and slide box, and a fixative bottle. The spatula (see Figure) is the most satisfactory instrument for taking cervical scrape smears. Normally end "A" is used, since it is shaped to fit the cervix and should ensure that the squamocolumnar junction is scraped. End "B" is more suitable for a very lax external os. The fixative bottle should contain a little wax compound. This should be diluted with industrial methylated spirit before use.



AYRE SPATULA (half size)

The fourth requirement is an aspiration pipette, which is useful in cases where an aspiration smear from the posterior fornix is necessary, because a full speculum examination is impossible or painful. It is also more suitable if the smear is required for assessing the patient's hormone state. Fifthly, a pair of disposable polyethylene gloves; and, lastly, a standard cytology form. The completion of the information required on this form is time-consuming, but much useful clinical information can be provided on it to help the cytologist.

The Davis pipette is a disposable instrument with which the patient performs the test herself. This method is not as reliable as the usual Ayre spatula method, but may perhaps be used for those who repeatedly refuse to attend their doctor for smears and in underdoctored areas.

### Technique

To ensure that a satisfactory smear is obtained a smear should be taken before the remainder of the pelvic examination is undertaken to avoid contamination from lubricant or blood. The cervix must be completely exposed with the speculum so that a full 360° sweep can be made of the squamocolumnar junction with the Ayre spatula. This is not always as easy as it sounds and a preliminary digital examination is occasionally required to establish the exact position of the cervix. A common fault is scraping too hard, with resultant bleeding and an unsatisfactory smear. If the aspiration pipette is being used the bulb must be depressed before entry to the vagina. In the elderly it can often be guided to the posterior fornix and cervical area by a finger in the vagina. When in position the bulb is released and the pipette moved about. The material obtained is then expressed on to the slide. Material should be spread as gently and evenly as possible over the slide, which should be clean, and clearly labelled in pencil. The slide must be immersed in fixative solution *immediately*. Delay destroys the quality of the cells on the slide and can make accurate interpretation very difficult for the cytologist. The fixed smear should be left to dry for at least ten minutes before being sent to the laboratory.

### The Cytology Laboratory

Most laboratories use staining methods based on that described by Papanicolaou<sup>5</sup> to prepare smears for cytological examination. This stains the nuclei of epithelial cells dark blue or purple and their cytoplasm pink or blue. In sexually mature women before the menopause most of the cells are derived from the superficial layer of squamous epithelium with small numbers from the intermediate and parabasal layers. It is also usual in a well-taken smear to find groups of endocervical cells derived from columnar epithelium.

### CLASSIFICATION OF SMEARS

The standard smear form classifies smear results under the headings below, the figures in brackets referring to Papanicolaou's classification, which is used by most pathologists.

- A. (1) *Unsatisfactory*.—Either insufficient cells are present, the smear is too thick, or too much blood is present to make a reliable judgment.
- (2) *Normal Smear* (Papanicolaou Class I).—The great majority. Typically the pattern is as described above.
- (3) *Inflammatory Changes* (Papanicolaou Class II).—There is usually an increase in cells from the lower layers, and an excess of polymorphs and debris. Nuclear changes occur and sometimes it may not be possible to exclude malignancy until the smear has been repeated after treatment of the causative condition—for example, non-specific infections, erosion, cervicitis, etc. In senile vaginitis, common after the menopause, nearly all the cells may be derived from the lower layers of epithelium.
- (4) *Trichomonas vaginalis* (Papanicolaou Class II).—Similar changes as above, but trichomonas may be seen in large numbers.
- (5) *Monilia* (Papanicolaou Class II).—Similar inflammatory changes, but less marked than trichomonas are present, and spores and mycelia can be seen.
- (6) Other non-malignant reports, for which none of the above categories are appropriate.
- B. (1) *Suspicious* (Papanicolaou Class III).—Smears containing cells which while showing some features of malignancy, do not contain sufficiently marked changes or appear in sufficient numbers for a definite "positive" report to be made. Repeats are requested at frequent intervals until the presence of malignant cells is definitely established or excluded.
- (2) *Positive* (Papanicolaou Class IV and V).—Smears containing cells which have definite features of malignancy.

It should be emphasized that a positive report is *not* a definite diagnosis of carcinoma—either in-situ or invasive—but an indication that further investigation (usually a cone biopsy) by a gynaecologist is urgently required. Further details of the cytological appearances of smears may be obtained from E. G. Wachtel's excellent book on the subject<sup>6</sup> or by visiting the local laboratory, which has the added advantage of establishing contact between clinician and cytologist.

False-positive reports are rare if abnormal smears are being reported on by an experienced pathologist, on the other hand, the following circumstances may lead to a false-negative report: an incorrectly taken smear; pipette aspiration smears are less accurate than cervical scrapes and a small number of positives are missed by this method; faults by the cytologist, due to inexperience, fatigue, or boredom. These can be minimized by proper laboratory organization. Some invasive carcinomas of the cervix do not exfoliate cells very readily. Usually these are clinically obvious, but occasionally very early growths behave in this manner and the smear appears negative.

Though adenocarcinoma of the corpus uteri may sometimes be picked up by cytology, the latter is not an efficient screening method for this growth and a negative report is not an indication that such a growth is absent.

### Follow-up of Smear Reports

It is the responsibility of the clinician and not of the laboratory to ensure that abnormal smears are followed up. Positive smears are unlikely to be forgotten, but it is essential to keep a record of all other abnormal smears so that they may be repeated when required. One should also ensure that the patients concerned clearly understand the nature of their smear report, and why a repeat or referral to a gynaecologist is necessary.

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