Since the principal interest of this study relates to the prophylactic use of lignocaine in patients with ventricular ectopic beats after myocardial infarction, it is important to consider the circumstances of the seven deaths in this group of 33 patients (Table VII). Two died in ventricular fibrillation during the lignocaine infusion. Four others died at intervals between two and seven days after apparently successful lignocaine therapy. These patients were beyond the period of maximum risk of cardiac arrest (more than 72 hours after infarction), and no premonitory dysrhythmia was observed before the fatal one. The seventh patient did not respond to lignocaine therapy, and succumbed to ventricular fibrillation two hours later. This experience, despite the small numbers, has made us cautious in claiming that the use of this drug has significantly influenced the overall mortality. A double-blind trial of lignocaine therapy after myocardial infarction is now in progress.

We wish to acknowledge the collaboration of the medical and nursing staff of the cardiac monitoring unit.

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Positive Smear in Pregnancy

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Brit. med. J., 1969, **1**, 216–217

Summary: Of 8,500 consecutive cervical cytology tests in the antenatal period a positive or suspect result was found in about 1%. For the patients with a positive smear, examination under anaesthesia and small four-quadrant cervical biopsies are proposed as an alternative to antenatal conization, with its risk of subsequent haemorrhage or abortion.

A waiting policy is safe and permits normal delivery in hospital. Clinical and cytological follow-up is a vital part of conization-excision therapy. For the suspect smear (dyskaryosis) follow-up tests may revert to normal, but others may become positive and demand biopsy.

Introduction

In the management of a pregnant patient with a positive or suspect cytology test the obstetrician has the choice of observation with further tests from the cervix or some form of biopsy. Histology is, of course, the basis of diagnosis, but the pregnant cervix is soft and vascular and a cone biopsy carries the risk of haemorrhage or even abortion.

Since 1958 all antenatal patients have been screened in this unit, and we here describe the gradual evolution of a policy for clinical management. Over the period 1958 to 1965 8,500 consecutive antenatal patients were screened: 33 were positive (3/1,000) and 81 suspect (dyskaryosis (10/1,000)). A positive test was an indication for four-quadrant biopsies around the cervical squamo-columnar junction to exclude invasive carcinoma as far as is possible.

Intrapartum and Postnatal Care

In four patients seen at an early stage of the investigation, intrapartum conization was attempted. The pathological reports of these were carcinoma-in-situ in one, basal cell dysplasia in two, and in one no abnormality.

Twenty conizations for positive tests were carried out on the postnatal and therefore relatively avascular cervix. The operation of conization not only aims at the diagnosis of cervical lesions but also aims to cure the patient, so that the conization as practised by this unit is extensive. The portio vaginalis cervicis and much of the cervical canal is included in what is in fact a cone-shaped partial amputation of the cervix. This, of course, is no outpatient procedure, since careful haemostasis is obligatory and often quite difficult to achieve (McLaren, 1967). Histological examination showed: carcinoma-in-situ in 14, basal-cell dysplasia in five, and in one nothing abnormal was found.

Antenatal Care: Further Investigations.—Of the 33 patients with positive antenatal tests nine have not yet had a biopsy. The reasons for postponed biopsy can be summarized as follows: three became negative postnatally (under observation); one was lost to follow-up; one was lost to follow-up for six years, then negative; one postnatally negative, but became positive after six years; one postnatally negative, became positive after four years; one persisted postnatally as positive, but the patient declined further tests; and one who refused treatment for three years developed fatal carcinoma of cervix.

Positive Smear: Treatment Refused

Case 1.—A para-12 aged 40, though she understood the risk, refused to have any form of biopsy despite repeated positive antenatal and postnatal tests. Three years later, still under observation, she developed cervical carcinoma, which rapidly extended out to the parametrium. Despite radiotherapy death occurred six months later.

Though not within this series a further two cases are here summarized.

Case 2.—A para-4 aged 44 had a positive smear in pregnancy in 1963. She declined biopsy but sent self-aspiration tests, which five years later were still positive.

Case 3.—A para-3 aged 45, from whose (clinically) normal cervix repeated positive smears were obtained, refused biopsy or treatment. Six years later she died of carcinoma of the cervix despite belated radiotherapy.

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All these patients and their husbands were fully informed of the significance of a positive test and the risks of a waiting policy.

Outlook with Dyskaryosis

In our experience a good sample of representative cells is best obtained in pregnancy by an Ayre's scrape or surface biopsy test, even if slight vascular oozing results. Dyskaryotic cells not meriting the label "suspicious" are commonly found. Eight years ago, when our observations in pregnancy began, the importance of dyskaryosis was not fully appreciated, so that of 81 "suspect" pregnancy dyskaryotic tests follow-up was achieved in only 67.

Abnormal cells exfoliated by the cervix may be replaced by normal cells or they may persist, so that obviously there is no alternative but to follow up all dyskaryotic tests. The following summarizes our observations in the 67 tests. Suspect smears (dyskaryosis): (a) regressed to normal (follow-up only), 55; (b) suspect, progressed to positive, 6; and (c) suspect, persisting, 6.

Conversion of six dyskaryotic tests to positive (malignant-appearing cells) took the following intervals of time: three negative postnatally then positive after three years, and two negative postnatally then positive after one year. These five positive patients were ultimately shown to have carcinoma-in-situ. The remaining patient with a dyskaryotic smear was finally graded as positive after being observed for three years. At conization, however, no abnormal epithelium was discovered. Follow-up of the residual cervix has remained normal.

Reversion to Normal

The mechanism which leads postnatally to normality is not understood, but follow-up (including further pregnancies) may or may not show reversal to a positive test and carcinoma-in-situ. Physiological desquamation of cervical epithelium is considerable soon after delivery, and a small area of abnormal epithelium might well be shed. To illustrate this type of "switching" cytology a case report is given:

A para-3 aged 31 had in 1959 had a positive smear in pregnancy, which after delivery changed to a dyskaryotic grade so that only follow-up was planned. Subsequent cell tests at six-monthly intervals remained negative for six years, then positive tests were again recorded. Conization showed marked basal-cell epithelial dysplasia affecting almost all epithelial layers—that is, not quite meeting the criteria laid down by Govan *et al.* (1966) for a diagnosis of carcinoma-in-situ. Follow-up has been normal, but lifelong clinical and cytological tests are planned. Hysterectomy is not acceptable to the patient, but even if it were we should continue to take tests indefinitely from the residual vagina, which is not immune to similar cellular abnormalities.

Tests from a further three patients declared positive in pregnancy became normal postnatally. These patients have remained under observation for four, seven, and eight years respectively. Follow-up will continue.

While our knowledge of the significance of these pathological epithelial changes remains incomplete the need for careful follow-up is obvious, and to achieve this efficiently follow-up patients have become the responsibility of one clinician. Special clinics and home visits by a qualified nurse (health visitor) are planned. These arrangements are of interest to the busy clinician, who may find, as we have done, that an ordinary outpatient session is inadequate for this type of lifelong (almost ruthless) follow-up where a defaulter would be in danger.

Clinical Management

A report of a positive smear from the cervix can easily alarm the patient, and it is vital that the family doctor and the con-

sultant should co-operate closely and use identical descriptive terminology. In our unit both the patient and her husband are interviewed by a senior clinician with adequate time to answer questions. A letter is then sent at once to the family doctor with details of the positive test and an outline of the proposed investigations. The patient should understand that, although a clinical investigation of her positive smear is necessary, to avoid the risk of haemorrhage or abortion full investigation can safely be delayed until the baby is born. Nevertheless, four-quadrant biopsies are taken from the squamocolumnar junction. To exclude invasive carcinoma with certainty, however, nothing short of a cone biopsy will suffice, and this is planned for six to eight weeks after delivery.

Conization

In over 90% of our cases a planned conization aimed at both diagnosis and therapy achieves a successful result (McLaren, 1967). Clinical and cytological follow-up is part of this form of conservative treatment, and provided this proves to be normal no further surgery is required.

Persistence of malignant cells at follow-up, however, points to residual pathological tissue and the need for hysterectomy and subsequent follow-up tests from the residual vaginal epithelium.

Conization and Future Pregnancies.—Eight weeks after conization a healed cervix covered with healthy squamous epithelium is the rule. Physiological mucus at the external os is also commonly observed. During 1952–68 200 conizations were performed in this unit, but whether or not conization has reduced fertility is not known.

Total number of conizations ...	200
Number of patients in reproductive age group ...	122
Number of pregnancies in 25 patients ...	41
Number of normal deliveries ...	35

Thus it is important that our conservative policy allowed 25 patients to have 41 pregnancies. There were, however, six pregnancies which terminated in abortion, but in only three was it considered that conization had played a part. Labour at 34 weeks produced a premature baby of 5 lb. (2,270 g.), which survived. In another case failure of dilatation of the cervix led to caesarean section with a live child. Since a non-dilated "coned" cervix might tear and lead to haemorrhage the need for skilled obstetrical supervision of all "coned" patients in a well-staffed maternity hospital is obvious. We conclude from our impression gained over the past eight years that conization produces far fewer disturbances of pregnancy than one might expect in view of the extent of the cone-shaped dissection required in radical conization.

Conclusions

It seems clear that cytology should be offered as an effective screening technique to all antenatal patients, whether seen initially by their own doctor or at a booking clinic. In the management and follow-up of patients with positive or suspect tests close liaison between the family doctor and his colleague in hospital is vital.

The team responsible for this report gratefully acknowledge the assistance of clinical colleagues in the professorial unit, and especially the assistance of Dr. F. Selby Tait. The Birmingham branch of the British Empire Cancer Campaign provided financial support, and this is gratefully acknowledged.

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