PRACTICE OBSERVED

Practice Research

Screening for cervical cancer: a new scope for general practitioners? Results of the first year of colposcopy in general practice

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Abstract

A survey was carried out over one year of all the women who attended a colposcopy clinic in a general practice. During the year 1254 women underwent cytological screening in the practice and 197 of these underwent colposcopy. Of 79 women with abnormal smears that suggested cervical intraepithelial neoplasia, 62 (79%) were confirmed by biopsy to have cervical premalignancy. In addition, the remaining 118 women with normal or inflammatory smears underwent colposcopy either because of their history or because they requested the investigation.

A general underestimate of cervical intraepithelial neoplasia when cytology alone was used was discovered. Seven out of 28 women with inflammatory smears were found to have important cervical premalignancy. Mildly dyskaryotic smears led to a falsely reassuring estimate of the degree of severity of cervical lesions. Seven out of 13 patients who underwent colposcopy because they were thought to be at high risk of neoplasia because of a history of genital warts, unexplained recurrent cystitis, heroin abuse, or immunosuppression had cervical intraepithelial neoplasia proved at biopsy.

This report shows that both in screening for and in the follow up of known cervical disease a normal smear cannot guarantee normal pathology. Diagnostic colposcopy is a valuable complementary investigation that could be carried out in a general practice.

Introduction

Between 1975 and 1985 the proportion of cervical smears reported by a local district laboratory as showing cervical intraepithelial neoplasia 1-2 (mild or moderate dyskaryosis) increased threefold. Over the same period the proportion reported as cervical intraepithelial neoplasia 3 (severe dyskaryosis) increased sixfold. These figures were reflected nation wide¹ and in my general practice, where there was a noticeable increase in the number of abnormal smears recommended for colposcopy.

Delays of up to 16 weeks for a hospital colposcopy appointment led to the idea of creating a general practice diagnostic colposcopy service to meet the demand. This service also aimed at investigating patients with normal smears but suspect case histories and at providing continued surveillance of women with a history of cervical disease, treated or untreated.

Subjects and methods

The colposcopy service was set up in a general practice in a densely populated urban area of London. The current list size is 6500, of whom 3500 are women with 2439 aged 16-44. Before setting up the colposcopy service I had had four years' experience in colposcopy at a clinic at the local hospital.

Since its establishment in 1972 this practice has routinely performed cytological examination of the cervix on all its women patients (virgins excluded) every three years. In the one year of this survey (from August 1985) 1254 women underwent cytological screening, and 197 of these patients also underwent colposcopy. Cervical smears were taken by myself or by the practice nurse, who had been instructed in the standard technique: a standard Ayre's spatula was used in a single and gentle 360° sweep; a Medscand cervical cytobrush was then inserted into the cervical canal until the bristle end just disappeared, and the brush was also rotated 360° and then withdrawn. The material from both spatula and brush was smeared on to the same slide, which was flooded with a fixative.

The patients who underwent colposcopy were: (a) all women with smears

indicating dyskaryosis, (b) a sample of women with inflammatory smears, (c) women previously treated for cervical intraepithelial neoplasia, (d) a sample of women regarded as being within the possible high risk groups for cervical neoplasia despite normal cytology results (those with a history of genital warts in self or partner, heroin addicts, immunosuppressed patients taking azathioprine for either colitis or rheumatoid arthritis, and women with recurrent cystitis with normal results on intravenous urography, cystoscopy, and urine culture), (e) a sample of women who had a previously abnormal smear untreated and whose latest smear was reported as normal, (f) anxious patients who requested colposcopy for additional reassurance despite a normal smear and no known risk factors in their case histories.

All colposcopic examinations were carried out by me. The vulva and vagina were first carefully inspected for abnormalities both macroscopically and using the colposcope. High vaginal swabs were taken if indicated. The cervix was then examined under the colposcope and a cervical smear taken if required. Normal saline was applied to the cervix and the vascular pattern noted. A solution of 5% acetic acid was applied and a biopsy specimen taken from abnormal or suspicious areas. Lugol's iodine was occasionally applied to improve assessments of some lesions. Silver nitrate sticks were used to stop any bleeding from the biopsy site. The average time for the initial colposcopy was 30 minutes; follow up examinations were shorter.

Results

Abnormal results were obtained in 154 (12%) of the 1254 patients who underwent cytological screening in the practice during the 12 months from August 1985: they included 10 in women who were being followed up after conservative treatment for cervical intraepithelial neoplasia. The highest abnormality rate was in the 25-34 year age group, in which 80 out of 562 patients (14%) had an abnormal smear; 10 (91%) of the 11 patients with severely dyskaryotic smears were aged between 25 and 44 years.

Table I shows the results of cytological and histological examination in all groups of women who underwent colposcopy. In the mildly dyskaryotic group 29 (48%) of 60 women had biopsy findings suggesting cervical intraepithelial neoplasia 2 or cervical intraepithelial neoplasia 3 compared

with six (60%) of 10 in the moderately dyskaryotic group and eight (89%) of nine in the severely dyskaryotic group.

Among those with inflammatory smears, seven (25%) were found to have lesions of either cervical intraepithelial neoplasia 2 or cervical intraepithelial neoplasia 3 at biopsy.

Table I also shows the results in 38 patients who underwent colposcopy one to 10 years after conservative treatment for cervical intraepithelial neoplasia (four cone biopsy, three diathermy, two cryotherapy, and 29 laser treatment). Four colposcopies were unsatisfactory owing to cervical stenosis. (This was observed in three patients previously treated by cone biopsy and in one treated by diathermy.) Two of these patients had moderate to severe dyskaryosis on smear testing and all four were referred to hospital.

Table II shows the results from women who had normal smears. Thirteen of these underwent colposcopy because they were thought to be at high risk of cervical neoplasia owing to their history. All smears were reported as normal but seven (54%) had cervical intraepithelial neoplasia proved at biopsy. Nineteen women had had an abnormal smear (mild to moderate dyskaryosis) within the past two years and underwent routine rescreening during the survey year. All these smears were normal, but simultaneous histology showed cervical intraepithelial neoplasia in 11 patients (58%). Colposcopies were also performed on 20 women with normal cytology who were anxious, but only one was found to have cervical intraepithelial neoplasia 1 (5%).

A total of 197 patients had colposcopy, and 79 were referred for treatment. These women comprised all the patients with cervical intraepithelial neoplasia 2-3 on histological examination; all patients with a smear that showed moderate to severe dyskaryosis; certain patients with cervical intraepithelial neoplasia 1 lesions; and all patients with unsatisfactory colposcopy (usually due to cervical stenosis).

Discussion

The diagnostic colposcopy service achieved its primary aim of reducing local delays of 16 weeks or longer for the evaluation of patients with an abnormal smear. Once the service was established

TABLE I—Results of cytological and histological examination in all women who underwent colposcopy in one year

Findings on cytology	No of women	No who underwent colposcopy	No lesion seen (no biopsy)	No who underwent biopsy	Findings on colposcopy						
					Findings on biopsy						Vaginal intra-epithelial neoplasia
					Normal	Inflammatory cells	CIN 1	CIN 2	CIN 3		
Abnormal and inflammatory smears:											
Inflammatory smear	65	28	7	21	2	7	5	2	5	0	
Mild dyskaryosis (CIN 1)	60	60	2	58	8	4	16	14	15	1	
Moderate dyskaryosis (CIN 2)	10	10	0	10	1	0	3	2	4	0	
Severe dyskaryosis (CIN 3)	9	9	0	9	1	0	0	3	5	0	
Follow up after treatment:											
Inflammatory smear	4	4	3+1*	0	0	0	0	0	0	0	
Mild dyskaryosis (CIN 1)	2	2	0	2	0	1	1	0	0	0	
Moderate dyskaryosis (CIN 2)	2	2	1*	1	0	0	0	1	0	0	
Severe dyskaryosis (CIN 3)	2	2	1*	1	0	0	0	0	1	0	
Normal cytology	28	28	17+1*	10	3	1	5	0	1	0	
Normal smears:											
Previously abnormal	19	19	7	12	1	0	8	2	1	0	
High risk history	13	13	2	11	3	1	3	1	3	0	
No known risk factors	20	20	11	9	7	1	1	0	0	0	
Total	234	197	53	144	26	15	42	25	35	1	

*=Patient with stenosis. CIN=Cervical intraepithelial neoplasia.

TABLE II—Results of colposcopy for patients with normal smears

	Total No who underwent colposcopy	No lesion seen (no biopsy)	No who underwent biopsy	No with normal histology	Inflammatory cells	CIN 1	CIN 2	CIN 3
Patients with a high risk history	13	2	11	3	1	3	1	3
Genital warts	8	2	6	3	0	3	0	0
Heroin abuse	2	0	2	0	0	0	0	2
Immunosuppression*	2	0	2	0	0	0	2	0
Recurrent cystitis†	1	0	1	0	0	0	0	1
Patients with a previously abnormal smear	19	7	12	1	0	8	2	1
Anxious patients with no risk factors	20	11	9	7	1	1	0	0

*=On azathioprine treatment. †=Analysis of midstream urine intravenous urography, and cystoscopy all gave normal results. CIN=Cervical intraepithelial neoplasia.

TABLE III—Comparison of the results between the practice and the district laboratory in one year (percentages in parentheses)

	Royal Northern Hospital/ Whittington Hospital	Practice cytological examination	Practice histological examination after colposcopy
Total No of smears processed	21 470	1254	197
Mild to moderate dyskaryosis (CIN 1-2)	984 (4.6)	74 (5.9)	66 (5.3)*
Severe dyskaryosis (CIN 3)	346 (1.6)	11 (0.9)	35 (2.8)*

CIN=Cervical intraepithelial neoplasia. *Figures are percentages of 1254.

the average time for assessment, including histology results, was not longer than four weeks. More disease was discovered on colposcopy than on cytology alone, and this resulted in more referrals for treatment. The discovery rate of cervical intraepithelial neoplasia 3 lesions trebled with the use of colposcopy (table III).

Inflammation on cervical smears is frequently disregarded and rarely suggested as a reason for colposcopy. These results suggest that such inflammatory smears may be associated with an underlying cervical intraepithelial neoplasia 3 lesion—in 18% of cases in this series. The persistence of inflammation after treatment of any underlying infectious disorder is an indication for colposcopy.

Colposcopy showed hidden disease in many patients with a history of cervical abnormality (treated or untreated) who currently had normal cytology. Such patients required colposcopy as well as cytology.

The finding on colposcopy of one cervical intraepithelial neoplasia 2 and three cervical intraepithelial neoplasia 3 lesions among five women with normal smears but a history of immunosuppression, heroin abuse, or unexplained cystitis suggests that all smears, particularly normal ones, need to be assessed in conjunction with the patient's full case history. The data already available to a general practitioner may be of considerable help in diagnosing hidden cervical disease.

A correlation was shown between the degree of abnormality of the cervical smear and the probability of appreciably abnormal biopsy results (cervical intraepithelial neoplasia 2-3). Cytological and histological results corresponded only for the more abnormal smears. Patients with normal or mildly abnormal smears had all grades of cervical intraepithelial neoplasia lesions on histological examination.

The failure of examination of cervical cytology alone as a screening test is known.² Consequently, as these results show, any abnormal smear may be seen as a "good result" in that it should lead to colposcopic evaluation. A normal cervical smear may be misleading, and further management should be guided by the patient's history.

Of 775 smears taken from women under 35 years, 97 (13%) were abnormal. Cervical intraepithelial neoplasia was found on histological examination after colposcopy in 68 out of 117 women in the same age group. In this study 57% of cervical intraepithelial neoplasia lesions found were in women under 35 years of age.

The present government policy, which emphasises screening for women over 35 at five yearly intervals, does not reflect the age at which this disease exists in its early curable form. Only 124 of the 1234 smears taken attracted payment under the existing regulations.

The increasing number of referrals of women with abnormal smears to hospital colposcopy clinics indicates an epidemic of preinvasive cervical disease.¹ Such an epidemic has already overstretched existing hospital resources, as shown by the long waiting times for colposcopy and treatment.

A general practitioner trained in colposcopy should be of great help as a specialist assistant in the district and may well allow for more efficient use of already scarce resources.³ The years of training and experience required to become an expert colposcopist and the financial cost of equipment may mean that most general practitioner colposcopists will work as assistants at their local hospital clinic.

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References

- 1 Wolfendale MR, King S, Usherwood MMD. Abnormal smears. Are we in for an epidemic? *Br Med J* 1983;287:526-8.
- 2 Walker E, Dodgson J, Duncan I. Does mild atypia on a cervical smear warrant further investigation? *Lancet* 1986;ii:672-3.
- 3 Clayton B, MacNaughton M, Evans DMD. Means to fight cervical cancer. *The Times* 1986 Oct 16:21.

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100 YEARS AGO

MR. GEORGE H. SARGANT, of Birmingham, has published his experience and views with regard to free dinners at schools, founded on three years' work as chairman of the Dinners Committee. Providing dinners for hungry school children is not entirely a matter of recent experience; but it has assumed a new aspect and a fresh importance since the introduction of compulsory school attendance. It may be maintained that, to provide food for semi-starved children, would enable them to make full use of the costly education now provided for them, and would prevent an enormous amount of physical and moral degeneration; and that the cost would probably be repaid, over and over again, by the saving in our expenditure on paupers and criminals. The food supplied to the poorest children would be an equivalent for that which compulsory education has deprived them of the means of obtaining for themselves, and enable them to meet the additional strain thrown upon them in school. In 1846, an industrial day feeding school was established in Birmingham, and continued at work for twenty years; a plan was adopted by which the children earned the meals provided for them by their own labour. Dinners at a penny and a halfpenny were provided in 1860. Other attempts seem to have been made from time to time, but were of a more or less temporary character; it is to be hoped that this was due to the temporary character of the local distress. There is no economic reason why self-supporting kitchens should not be permanent, as much as the dining rooms attached to some colleges. Dr. William Strange, of Worcester, in a letter which appeared in our columns recently, gives an interesting account of his work in trying to relieve distress. "Victoria kitchens for the supply of cheap

and wholesome food to the poor" have been started in Worcester, the sales covering the cost of food, firing, and gas, with the cook's wages; the rent was met by subscriptions. It seems to us that food thus supplied for adults should pay all expenses; while that for children might be on a similar business basis, a certain number of free tickets being carefully distributed; for it is found by experience that really starving children cannot get any coin without begging it. It must ever be borne in mind that the object of these dinners is to provide food at the schools for those who want it, not merely to relieve starvation from poverty. It should not be an act of charity for a school child to buy a wholesome dinner at school. In working the mixed system of dinners by purchase and by free tickets, the farthing dinner is very useful as a check upon the proportion of free to paying children; while the proportion of free dinners has grown rapidly when the price has not been reduced. Mr. Sargent further says in his article: "As to clothing, numbers have merely a few rags, often tied on with string; their shoes, if they have any, are such as to merely hold the wet round their feet, and it would be far better in most cases if they were thrown away. On the other hand, some of the poorest children are kept clean, and neatly, though insufficiently, clothed." It is interesting to hear that many children are bright and intelligent, although on the verge of starvation; but, on the other hand, they work better after their midday meal. The calculation is made that an increase of five per cent in the amount the nation now expends on education would secure that no child need attend any school in a condition of semi-starvation, as so many now do. (*British Medical Journal* 1887;ii:1060.)