An in-service registrar-training programme in colposcopy at Groote Schuur Hospital

Reliability and results

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Summary

A scheme for the in-service training of registrars in colposcopic techniques was evaluated in a prospective study. The colposcopic interpretation was satisfactory in 79% of the 721 patients examined, and inappropriate treatment was avoided by utilizing the specified protocol of management. The value of cytological screening of the population is emphasized by the fact that in 95,7% of patients referred for colposcopy the pre-invasive cancer was not suspected on the basis of symptoms or the results of clinical examination.

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During the past decade colposcopy has been accepted as a reliable diagnostic procedure for the evaluation of cervical lesions in patients presenting with abnormal cytological findings in a vaginal or cervical smear. The fact that colposcopic, cytological and histological findings in directed biopsy samples can be correlated by 'experienced' colposcopists in 85 - 90% of patients has been well established in a number of studies,[1-3] but the training requirements for the attainment of colposcopic expertise have not been defined. The American approach that has evolved with no apparent planning has been initiation via a textbook[4] followed by a basic course in colposcopy, and thereafter, after a period in practice, a further advanced course. The basic and advanced courses are conducted by teachers experienced in integrating the fields of cytology, colposcopy and histology with that of clinical gynaecology.

The colposcopy service at Groote Schuur Hospital, Cape Town, copes with a large patient load: 447 new patients were seen in 1981 out of a total of 1 495 colposcopic examinations. Our aim is to train senior registrars to be competent colposcopists, and because of in-service demands in this and other areas it was decided to evaluate the efficiency of in-service training.

Patients and methods

Senior registrars in the latter half of their training period rotate through the colposcopy service for a 6-month period. The only preparation suggested before training was the thorough study of a good atlas or text on colposcopy,[4] and supervised colposcopic evaluation of 20 abnormal cervices emphasizing the basic principles of colposcopy. Thereafter the trainee was asked to assess, without supervision, the cervix of any patient with abnormal cytological findings. If any problems were encountered 1 of 3 experienced colposcopists was available for consultation, but the latter opinion, although recorded, was not taken into account in this study. The patients included in this study were seen by 4 registrars in training.

The records of 750 consecutive patients seen at the colposcopy clinic during 1980/1981 were prospectively analysed in this way in order to assess:

1. The degree of correlation achieved between the trainee's colposcopic assessment and the histological diagnosis. Correlation between cytological and histological findings was also analysed.

2. The effect of this type of training on patient management, with particular reference to any deleterious effect on the patient. The scheme for investigation of those patients with a doubtful diagnosis is detailed in Fig. 1.

The total number of patients studied was 750, 29 being excluded because of incomplete information; 721 patients were therefore available for analysis. Of these patients 62 (8,6%) were pregnant at first consultation and 27 (3,7%) had histologically confirmed condylomata acuminata, while in 67 (9,3%) the colposcopic examination was considered unsatisfactory.

There were 513 (71,2%) patients classified as Coloured, 108 (15%) classified as Black, and 100 (13,8%) classified as White; this classification is in keeping with the population distribution in the area served by Groote Schuur Hospital. The age distribution of the patients was as follows: < 20 years — 3 (0,4%), 20-29 years —152 (21,1%), 30-39 years — 316 (43,8%), 40-49 years — 175 (24,3%), > 50 years — 75 (10,4%). It is striking that 65,3% were under 39 years of age. This is additional evidence that in South Africa, as in other parts of the world, cervical intra-epithelial neoplasia (CIN) is occurring in a younger age group. Another important factor is almost certainly earlier diagnosis because of more widespread cytological screening.

The indications for cytological examination are important because they unequivocally confirm the principle that cytological screening should be performed in asymptomatic sexually active women, irrespective of age. In 690 (95,7%) of these patients the CIN was detected on a routine screening cytological smear. Only 4,3% of patients were asymptomatic at the time of sampling. Fourteen women were examined because of post-coital bleeding, 12 because of post-menopausal bleeding, and 5 because of menstrual irregularity.

The cytological abnormalities at the time of referral for colposcopy are listed in Table I. CIN I was present in 3,2% of the patients, CIN II in 10,4% and CIN III in 76,4%. The classification of severity used was that suggested by Coppelson *et al.*[4] in

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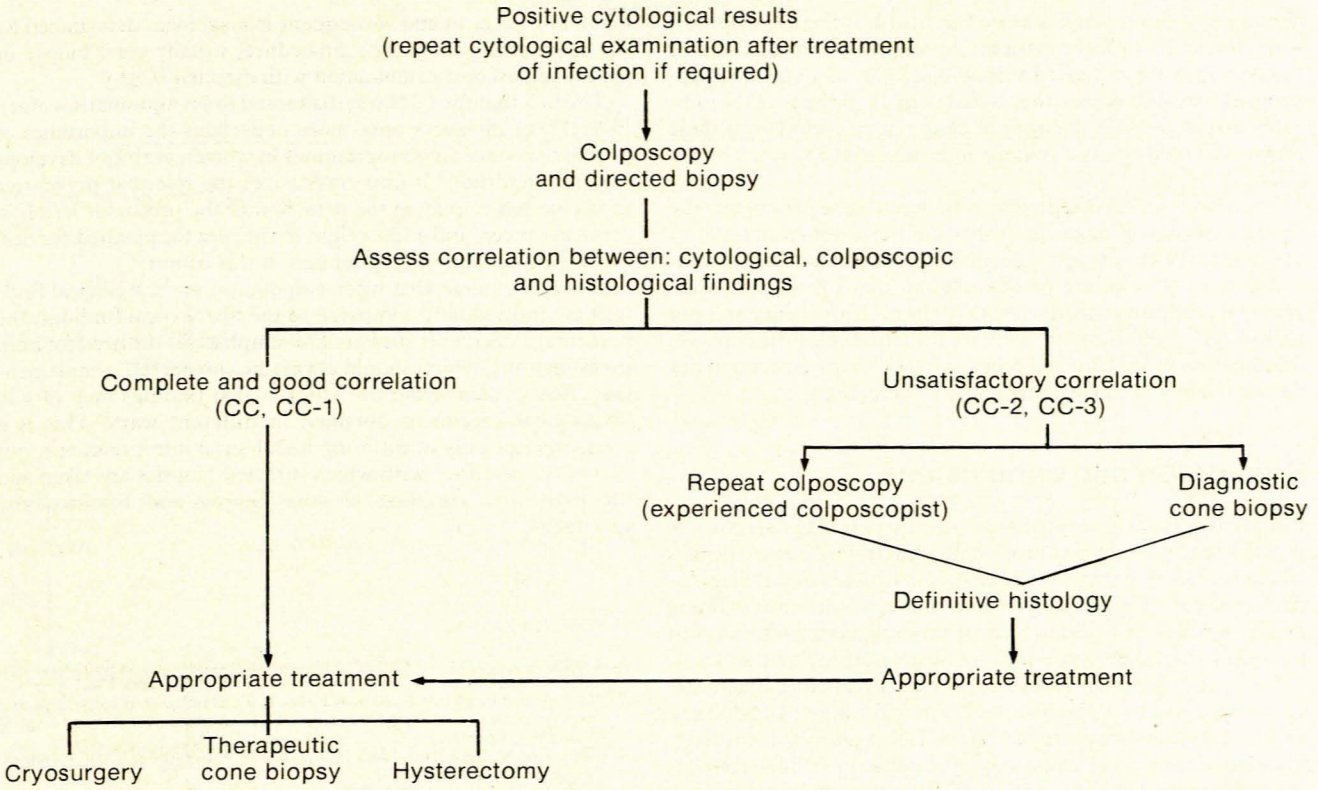

Fig. 1. Scheme for the management of patients with positive cytological results.

TABLE I. CYTOLOGICAL GRADING ON REFERRAL FOR COLPOSCOPY

	No.	%	Grading
Mild dysplasia	**23**	**3,2**	**CIN I**
Moderate dysplasia	**75**	**10,4**	**CIN II**
Severe dysplasia	**289**	**40,1**	**CIN III**
Carcinoma *in situ*	**262**	**36,3**	**CIN III**
Micro-invasive carcinoma	**28**	**3,9**	
Invasive carcinoma	**44**	**6,1**	
Total	**721**	**100,0**	

which CIN I = mild dysplasia, CIN II = moderate dysplasia and CIN III = severe dysplasia and carcinoma *in situ*. Thus, of the 721 patients seen and subsequently analysed, 551 (76,4%) had serious intra-epithelial disease (CIN III) requiring active treatment.

In order to assess the degree of correlation between cytological, colposcopic and histological findings it was necessary to devise a scoring system. The degrees of correlation were assigned to four groups, depending on the number of parameters in agreement. Patients were assigned to the 'complete correlation' group (CC) when all the parameters were identical, to the 'good correlation' group (CC-1) when 2 parameters were identical but 1 varied by 1 degree only, to the 'poor correlation' group (CC-2) when 2 parameters were identical but 1 varied by 2 degrees, and to the 'disagree' group (CC-3) when all 3 parameters were different or 1 parameter varied by 3 degrees. Even though we are aware that this system can be criticized in that it is not sufficiently detailed, we believe that it provides enough information to serve as a basis for assessing whether the method of training outlined above is satisfactory.

Results of analysis

The results of this analysis of correlation in the 721 patients were as follows: in 569 patients (79,0%) 'complete' or 'good' correlation was obtained, while 'poor' correlation and no correlation ('disagree') occurred in only 71 (9,8%) and 81 (11,2%) of the patients respectively.

Because of the number of variables an additional analysis was undertaken in the latter groups (CC-2 and CC-3). From Table II, where the histological diagnosis was assumed to be the definitive one, it can be seen that the discrepancy between colposcopic and histological findings and between cytological and histological findings occurred in an identical percentage of patients (58%) in the two groups.

TABLE II. CYTOLOGICAL, COLPOSCOPIC AND HISTOLOGICAL COMPARISON

	Incorrect diagnosis		Correct diagnosis		
	No.	%	No.	%	Total
Cytology	**89**	**58**	**63**	**42**	**152**
Colposcopy	**88**	**58**	**64**	**42**	**152**
Histology	**27†**		**112**		**139***

*10 patients had cone biopsy as initial treatment.
†Histology: unsatisfactory correlation of directed biopsy or cone biopsy with hysterectomy.

The fact that the colposcopic and cytological examinations are complementary is emphasized by the finding that in 49 of the 58 patients in whom the cytological findings did not correlate with the histological findings, colposcopy was accurate, and that in the second group, in which colposcopy was inaccurate (also 58 patients), the cytological examination was accurate in 51 patients.

When these discrepancies arose the final histological diagnosis was obtained in all the patients by means of repeat directed biopsy (56 patients), and by cone biopsy in 60 patients. Inappropriate treatment was thus avoided in all patients. This indicates that in the vast majority of cases one or the other of these diagnostic methods is a reliable indicator of the severity of the CIN.

In all instances of disagreement between these parameters the final diagnosis was made on the basis of the histological findings of a diagnostic cone biopsy specimen; provided that these potential sources of error are recognized and that subsequent management is appropriate, the health of the individual patient is not prejudiced. Indeed, in 27 patients the histological findings on examination of the directed biopsy or cone biopsy specimen did not correlate with those obtained at hysterectomy.

Discussion and conclusions

Colposcopy is now accepted as an integral part of gynaecological practice, and present-day programmes for trainee gynaecologists should ensure that they are adequately instructed in this diagnostic technique. The major problem that arises in most training programmes is how best to achieve this aim, taking into account the heavy service demands and training priorities in other areas.

The results of this analysis show an acceptable diagnostic accuracy (79%) with the form of training outlined. In addition, and perhaps more importantly, in the 21% of patients incorrectly assessed by means of colposcopy the subsequent management was satisfactory and did not affect the patient in a deleterious manner. This is in part due to the fact that the errors in colposcopic diagnosis will be evident if the cytological report is always taken into account and subsequent management determined by the appropriate diagnostic procedure, usually cone biopsy or repeat colposcopic examination with directed biopsy.

The fact that the CIN was diagnosed in asymptomatic women in 95,7% of instances once more underlines the importance of population screening programmes in women at risk of developing this condition. It also emphasizes the role that preventive medicine has to play in the detection of the precursor lesion in cervical cancer, and adds weight to the plea for planned cervical cytological screening programmes in this country.[5]

It is also evident that when colposcopic and cytological findings are individually compared to the histological findings, the percentage of error is similar. This emphasizes the need for both investigations, which should always be considered complementary. Also evident from this study is that findings may vary in histological specimens obtained in different ways. This is a reflection not only of differing histological interpretations, but also of the accuracy with which directed biopsies are taken and the extent of sampling of cone biopsy and hysterectomy specimens.

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