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Problems and pitfalls of colposcopy in postmenopausal women

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OBJECTIVE(S) : To determine the problems of colposcopy in postmenopausal women.

METHOD(S) : A prospective observational study of 70 consecutive postmenopausal women referred for colposcopy was carried out. Problems encountered were noted and appropriate solutions applied. Chi square test with Yates correction when required and Student t test were used for testing significance.

RESULTS: Thirty percent had significant lesions (positive group) and 70% had inflammation (negative group). Colposcopy was unsatisfactory in 91%; the accuracy was 93%. 86.7% had procedural problems. Interpretive problems occurred in 40%. Difficulties due to senile vaginitis (27%) and relaxed vaginal walls (27%) were similar in both the groups. Problems associated with atrophy of introitus (26%), visualizing the cervix flushed with the vault (23%), and performing colposcopy due to continuous bleeding (13%) were significantly more in the positive group. Sim's speculum, vaginal wall retractors, xylocaine jelly, and estrogen therapy resolved these problems.

CONCLUSION(S) : Atrophic changes cause problems during colposcopy in postmenopausal women. Proper technique and estrogen therapy overcome these problems.

Key words : colposcopy, postmenopausal problems

Introduction

Carcinoma of cervix is the commonest cancer in Indian women[1]. In India, women aged $\geq$ 50 years constitute 14% of the total population [2]. The average annual age specific incidence rates of cervical cancer peak in this age group[1]. The atrophic changes in the genital tract cause problems in the Papanicolaou (Pap) smear as well as colposcopy, which are used for screening and confirmation of preinvasive and invasive cervical cancers. There are scant reports (none from India) specifically addressing the problems of colposcopy in postmenopausal women [3-5]. Hence, this study was undertaken.

Methods

This prospective observational study was conducted by the same colposcopy team. The study population comprised 70 consecutive postmenopausal women referred for colposcopy. The inclusion criteria were complaints of postmenopausal bleeding or abnormal vaginal discharge, postcoital bleeding, an abnormal Pap smear, an unhealthy looking cervix clinically suspicious of malignancy, and evaluation of the vagina following hysterectomy for high grade cervical intraepithelial neoplasia (CIN) or radical surgery for cancer of the cervix or uterus. Women with a history of surgery on the cervix in the past three months or with obvious cervical cancer were excluded. The main outcome measures were procedural and diagnostic problems associated with colposcopy and the corrective measures utilized to overcome the problems.

History, and general and systemic examinations were reviewed. A Pap smear was taken with an Ayre's spatula and endocervical brush during speculum examination. Colposcopy was performed at the same visit by the saline technique followed by the classical method, using a Leisegang™ (Germany) stereo-photocolposcope model 3BD at magnifications of 7.5 X and 15 X. The cervix was swabbed with 3% acetic acid followed by evaluation of the acetowhite areas with 50% Lugol's iodine. Abnormal colposcopic appearances were graded and scored, and their locations

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noted to enable a colposcopic diagnosis. Endocervical curettage (ECC) and cervical and / or vaginal biopsies were performed when indicated. When there was a diagnostic dilemma, strongly favoring atrophy, oral estrogen therapy was administered for 7-14 days and colposcopy repeated. Conjugated equine estrogen (CEE) 0.625mg daily or estradiol valerate 2 mg daily was used. Estrogen was not administered to women with a Pap smear report of atypical squamous cells, or of doubtful high grade squamous intraepithelial lesion (ASC-H) or worse, and those with abnormalities on pelvic ultrasonography and presence of medical contraindications. The procedural and diagnostic problems of colposcopy were noted and the best possible remedies were instituted simultaneously. The final diagnosis was based on the histopathology report and reassessed clinical and / or colposcopic impression in women who were administered estrogen therapy.

Statistical significance was tested by chi square test, with Yates' correction when required, and Student t test. P value of < 0.05 was considered significant.

Results

The age of the study population ranged from 38 to 72 years (one had premature menopause) with a mean of 56.3years. The final diagnoses of the study population are depicted in Table 1. Twenty one (30%) had significant lesions and were labeled the positive group. Two women of the positive group were not biopsied – one was lost to follow-up and the other wanted to undergo biopsy in another hospital. The Pap smear and colposcopic impression were invasive cancer in both these women; hence they were included in the study. The negative group comprised 49 (70%) women with no significant lesion. Twenty nine of the negative group did not undergo biopsy. Colposcopy was repeated in 19 of these 29 (65.5%) women after two weeks of estrogen therapy; the impression was immature squamous metaplasia and mild inflammation confirming the initial colposcopic diagnosis of atrophy. The remaining 10 women who received estrogen showed significant clinical improvement and declined repeat colposcopic examination. Four women in the negative group had biopsy report of inadequate for opinion; all of them responded favorably to estrogen therapy and were therefore included in the negative group. There was no significant difference between the ages of the women of the two groups (P=0.1613), mean ages of the women in the positive and negative groups being 55.3years and 57.3years respectively.

Colposcopy was unsatisfactory in 62 of the 68 women (91.2%) referred for colposcopy of the cervix. Satisfactory colposcopy was achieved in three of these with the use of the endocervical speculum. However, the use of the endocervical speculum was given up in the latter part of the study as it caused pain and bleeding. Additionally, the use of the tenaculum to stabilize the cervix made the procedure more difficult. The iris hook was successfully used in one patient with unsatisfactory colposcopy to retract the cervical lip and visualize the lower part of the cervical canal; this patient had endocervical cancer. The procedural problems encountered during colposcopy are listed in Table 2. The corrective measures used to overcome the problems are given in Table 3.

Table 1. Final diagnoses in the study population.

Diagnosis	Total N=70	%
1. Positive group	21	30
a) High-grade CIN	2	3
b) SCC of cervix	14	20
c) Adenocarcinoma of cervix	2	3
d) Invasive cervical cancer (not biopsied)[a]	2	3
e) VAIN III	1	1.4
2 Negative group	49	70
a) Cervicitis	13	18.6
b) Tubercular cervicitis	1	1.4
c) Endocervical mucus polyp	1	1.4
d) Inadequate for opinion[b]	4	6
e) Cervicitis due to atrophy (not biopsied)	29	41.4
f) Granulation tissue from vaginal vault	1	1.4

CIN - cervical intraepithelial neoplasia; SCC - squamous cell carcinoma; VAIN - vaginal intraepithelial neoplasia.

[a]Pap smear and colposcopy showed invasive cancer in both the patients
[b]Pap smear and colposcopy showed atrophy and inflammation

There were four false positive results and one false negative result, giving an accuracy of 93% for colposcopy. The first false positive case was a patient with a referral smear report of low grade squamous intraepithelial lesion (LSIL). The colposcopic diagnosis was high grade CIN due to the presence of atypical vessels (misdiagnosed prominent stromal capillaries) and coarse punctations (misdiagnosed subepithelial hemorrhages). No tissue was obtained on ECC. Pelvic sonography was normal and the Pap smear showed inflammation. The patient was prescribed oral CEE 0.625mg daily for 14 days. After two weeks Pap smear showed reactive changes of inflammation and colposcopy showed presence of immature squamous metaplasia, which confirmed the benign condition. The second false positive case had presented with lower abdominal pain and blood stained discharge. Speculum examination revealed an unhealthy looking cervix suspicious of malignancy with a small

Table 2. Procedural problems of colposcopy in the study population

Problem	Total n=70	Positive group n=21	Negative group n=49	P value
Difficulty in introducing speculum due to				
Atrophy of introitus	18 (26)	10 (47.6)	8 (16.3)	0.00
Senile vulvitis	6 (8.5)	1 (4.8)	5 (10.2)	0.45
Senile vaginitis	19 (27)	5 (23.8)	14 (28.6)	0.68
Total	43[a]	16[a]	27[a]	
Difficulty in visualizing cervix/vault due to				
Inappropriate size and type of speculum	6 (8.6)	4 (19)	2 (4.1)	0.04
Cervix flushed with vaginal vault [b]	16 (23)	10 (47.6	6 (12.2)	< 0.001
Relaxed vaginal walls	19 (27)	6 (28.6)	13 (26.8)	0.86
Pain due to severe senile vaginitis	17 (24)	3 (14.3)	14 (28.6)	0.20
Pain due to atrophy of vagina	17 (24)	8 (38)	9 (18.4)	0.07
Total	75[a]	31[a]	44[a]	
Difficulty in performing colposcopy due to				
Continuous bleeding from cervix [b]	9 (13.2)	6 (30)	3 (6.3)	0.08
Difficulty in focusing due to cervical descent [b]	13 (19.1)	1 (5)	12 (25)	0.056
Difficulty in positioning due to arthritis	8 (11.4)	6 (28.6)	2 (4.1)	0.03
Total	30[a]	13[a]	17[a]	
More than one problem	38 (54.3)	16 (76.2)	22 (45)	0.01
No problem	10 (14.3)	3 (14.3)	7 (14.3)	1.0
One problem	22 (31.4)	2 (9.5)	20 (40.8)	0.009

Figure in brackets represent percentages.

[a] Percentage not calculated as some women had more than one problem

[b] In this category, N=68, 20 and 48 for the total , positive group and negative group respectively

P value of <0.05 is significant

Table 3. Corrective measures implemented successfully to overcome problems of colposcopy.

Corrective measure	Total n=70	Positive group n=21	Negative group n=49	P value
Use of Sim's speculum and anterior vaginal wall retractor to visualize cervix / vault	31 (44.3)	18 (85.7)	13 (26.5)	<0.0001
Use of extended lithotomy position to visualize cervix	6 (8.6)	2 (9.5)	4 (8.2)	0.85
Use of 2% xylocaine jelly to decrease pain during the procedure	19 (27)	6 (28.6)	13 (26.5)	0.86
Oral estrogen therapy before review colposcopy [a]	33 (47)	0	33 (67.3)	_[a]

Figures in brackets represent percentages

[a] Estrogen was administered only to those with a Pap smear report excluding preinvasive or invasive cancer; therefore the two groups were not statistically compared.

ulcerated area on the anterior lip. Colposcopic impression was ulcer due to suspected invasive cancer. Pap smear showed severe inflammation. Multiple cervical biopsies and fractional curettage were done under general anesthesia. Histopathology showed cervicitis with ulceration; no tissue was obtained from the endocervix or uterus. Patient was prescribed oral CEE 0.625mg daily for 14 days. Repeat colposcopic examination showed marked improvement with immature squamous metaplasia in the area of ulcer. The third false positive case presented with postmenopausal bleeding. Cervix was grossly hypertrophied and suspicious of malignancy. Colposcopic impression was suspected invasive cancer. Pap smear showed epithelioid cells and Langhan's giant cells suggestive of tubercular cervicitis. Histopathology of multiple cervical biopsies and fractional curettage confirmed tubercular cervicitis. The fourth false positive case had come after 6 months of surgery for endometrial cancer of stage IA grade 1. Speculum examination revealed two small growths at the vault. Colposcopic impression was malignant polyps, on the basis of prominent vessels simulating atypical vessels and grade 2 acetowhite changes not staining with iodine. Pap smear showed inflammation. Biopsy showed granulation tissue. The false negative case was a patient who presented with blood stained discharge and lower abdominal pain. Speculum examination revealed a unhealthy looking cervix suspicious of malignancy. Colposcopy revealed an ulcer that did not have raised edges or atypical vessels, and diagnosis was severe atrophy with ulceration. Pap smear report showed adenocarcinoma of the cervix. Cervical biopsy and fractional curettage, performed under general anesthesia, showed infiltrating adenocarcinoma of the cervix.

Oral estrogen therapy was used in a total of 33 (47%) women. Twenty nine of these had a colposcopic diagnosis of severe atrophy and Pap smear diagnosis of atrophy with inflammation. All reported a marked improvement in local symptoms following estrogen therapy, and the follow up colposcopy done in 19 was significantly easier. All responded well to treatment and biopsy was averted in all these 29 (41.4%) women. A total of 39 (55.7%) women were subjected to biopsy. The biopsies included 29 cervical biopsies, 12 ECCs, one cervical polypectomy, and two vaginal biopsies.

Discussion

The atrophic changes after menopause cause symptoms mimicking malignancy of the lower genital tract e.g. postmenopausal bleeding and abnormal vaginal discharge. In our study 21(30%) had a significant lesion and cervical cancer was diagnosed in 25.7%. Toplis et al [3] reported significant lesions in 92 (86%) of 107 postmenopausal women referred for colposcopy; 16% had invasive cancer.

The conditions that give rise to an unsatisfactory colposcopies in postmenopausal women are incomplete visualization of the transformation zone (TZ) due to its recession within the cervical canal and stenosis of the external os, severe inflammation leading to trauma and bleeding during swabbing of the cervix, and inability to visualize the cervix due to severe atrophy of the vagina [6]. The rate of unsatisfactory colposcopy in this study was 91.2%, with 100% in the positive group and 87.5% in the negative group (P=0.098) [6].Toplis et al [3] and Urcuyo et al [7] reported unsatisfactory colposcopy rate of 53% and 92.6% respectively, in postmenopausal women [3,7]. In the latter part of our study the endocervical speculum was not used as it caused pain and bleeding. Prendiville et al [8] and Toplis et al [3] also reported similar problems with the endocervical speculum. In our study Sim's speculum with anterior vaginal wall retractor and the extended lithotomy position were used for satisfactory visualization of the cervix. In 31 (44.3%) patients the cervix or vault could be completely visualized by using Sim's speculum. Others have reported the use of Sim's speculum during colposcopy [9]. Cusco's speculum with a condom slipped over it (with condom tip cut) has been used to retract the relaxed vaginal walls by some colposcopists [9]. We did not find this useful. The help of an experienced assistant while using Sim's speculum cannot be overemphasized. The Obstetric Chair, model OC358, imported from Finland by Hospimedica International Limited, with controls to adjust the height and tilt, and comfortable leg supports was used as the colposcopy chair in this study and was invaluable. Others have also stressed the importance of using a proper examination couch [6,10,11].

Atrophic changes in the epithelium and stroma of the lower genital tract cause susceptibility to infections and trauma. Superficial lateral vaginal wall tears occurred in two women and abrasions occurred in another two women in this study; all were due to Cusco's speculum and all were successfully treated with antibiotic cream. These abrasions and tears can be worrisome to the beginners [11]. Conversely, true malignant extensions from the cervix to the vagina can be mistaken for superficial abrasions caused by the speculum [6]. Insertion of the speculum is painful due to the atrophic changes. The authors routinely used sterile normal saline to wet the specula and other vaginal instruments before use, and found this helpful in reducing the pain. However, the pain was significant in 19(27%) women and necessitated liberal use of 2% xylocaine jelly for lubrication of the specula. Sellors and Sankaranarayanan [9] reported wetting the instruments with clean water to be useful.

Interpretive errors occur as a result of atrophic changes resembling abnormal colposcopic appearances suggestive of CIN or malignancy [3-6,11]. In this study oral estrogen therapy proved to be a valuable adjunct in the follow-up evaluation

of patients with initial diagnostic difficulty, and averted biopsy in 41%. Other workers have reported similar advantage of estrogen therapy [4,5,11,12]. One case of tubercular cervicitis was misdiagnosed as suspected invasive cancer. There are few reports of colposcopy of tubercular cervicitis; the impression is usually ectropion, inflammation, or suspected invasive cancer [6,11,13]. The accuracy of colposcopy in our study was 93% which is more than the 84% reported by Toplis et al [3]. The false positive rate was 8.2% and the false negative rate was 4.8% in our study. These are similar to the false positive rate of 6% and false negative rate of 3% reported by Toplis et al [3] in postmenopausal women.

Conclusions

Colposcopy in postmenopausal women is challenging due to the atrophic changes in the genital tract. The authors recommend that the procedure be performed by experienced colposcopists.

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