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Original Research Article

The utility of colposcopy in detecting relapse after treatment of gynaecological malignancies

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ABSTRACT

Background: Vaginal bleeding is the most common symptom of vault relapse in gynecological cancers. This symptom may be overlooked or attributed to other causes, such as atrophy, infection, or post-radiation changes. Colposcopy allows direct magnified visualization of vaginal mucosa and abnormal vasculature though its role in detecting relapse is unclear.
Methods: It is a retrospective observational study of 31 patients who were referred for colposcopy and biopsy with complaints of abnormal vaginal bleeding during follow up of endometrial or cervical cancer.
Results: Among 31 patients, 19 patients were diagnosed to have primary cervical cancer and 12 endometrial cancers. Primary treatment was surgery alone (n=10, 32.2%), chemo-radiation alone (n=4, 12.9%) and both (n=17, 54.8%). Abnormal colposcopic findings were atropic features (n=21, 67.7%), radiation changes (n=8, 25.8%), erosion (n=9, 29.0%), acetowhite areas (n=9, 29.0%), abnormal vessels (n=8, 25.8%) and iodine staining abnormality (n=16, 51.6%). According to Swede scoring system, 77.1% (n=24) were normal or low grade lesions, 22.6% (n=7) were high grade lesions. Total of 6 recurrence cases identified out of which 5 cases had high grade (Swede score >7) and one had low grade (Swede score 5-7) colposcopic features. On taking Swede score cut off of 5 or more, the sensitivity of colposcopy in detecting vault recurrence is 100%, specificity 96%, positive likelihood ratio of 25%and negative likelihood ratio of 0%. Overall the accuracy of colposcopy in detecting relapse was 96.8%.
Conclusions: In our experience colposcopy is worth in detecting the cause of abnormal vaginal bleeding after treatment for endometrial and cervical cancer. Swede score is a good measure to decide on taking biopsy among these patients. Furthermore, larger studies are needed for better clarification.

Keywords: Cervical cancer, Endometrial cancer, Abnormal vaginal bleeding, Colposcopy, Relapse, Diagnostic accuracy

INTRODUCTION

Colposcopy is a minimally invasive technique that allows direct visualization of the vaginal mucosa and cervix.[1] It has been used for various indications, such as screening and diagnosis of cervical and vaginal pre-invasive and invasive lesions. However, its role in the follow-up of patients with endometrial or cervical cancer is not well established.

Diagnosing a relapse in the vault after endometrial and cervical cancers can be challenging due to several reasons. The relapse can be asymptomatic or present with nonspecific symptoms such as vaginal bleeding, discharge, or pain.[2] These symptoms may be overlooked or attributed to other causes, such as atrophy, infection, or post-radiation changes. Conventional methods such as pelvic examination, cytology, or imaging may not be sufficient to confirm the relapse.[3,4] The vaginal mucosa may be altered

by previous surgery or radiotherapy, making it hard to visualize or sample the lesion. Moreover, the cytology may have a low sensitivity or specificity due to sampling error or inflammation. Additional imaging tests such as computed tomography (CT), magnetic resonance imaging (MRI), or positron emission tomography (PET) may also have limitations in detecting small or deep lesions or discriminating between benign and malignant finding.[3]

In this article, we retrospectively analysed the utility of colposcopy in detecting relapse after treatment for these gynaecological malignancies. We also discuss the advantages and limitations of this method, as well as the potential implications for clinical practice and future research.

METHODS

We conducted a retrospective observational study in Mitera Hospitals, Kottayam, Kerala. We collected the details of patients from our colposcopic register from July 2020 to May 2023. We selected patients who were referred for colposcopy with complaints of abnormal vaginal bleeding on the follow up for endometrial and cervical cancer. The other selection criteria included were no visible growth on clinical examination and underwent biopsy during colposcopy. The final pathology reports were compared to the colposcopic findings. Diagnostic accuracy of colposcopy was assessed to predict recurrence considering positive colposcopic findings with Swede score 5 or more.

Data analysis was performed using IBM statistical package for the social sciences (SPSS) version 27.0 statistical software. Descriptive statistics were used to summarize patient characteristics.

RESULTS

Among 31 patients, 19 patients were diagnosed to have primary cervical cancer and 12 endometrial cancers. The demographical characters were described in Table 1. Nine patients were completed treatment for more than 2 years. Total of 21 patients received radiation either as a part of primary or adjuvant treatment.

Abnormal colposcopic findings were atropic features (n=21, 67.7%), radiation changes (n=8, 25.8%), erosion (n=9, 29.0%), acetowhite areas (n=9, 29.0%), abnormal vessels (n=8, 25.8%) and iodine staining abnormality (n=16, 51.6%). According to Swede scoring system, 77.1% (n=24) were normal or low grade lesions, 22.6% (n=7) were high grade lesions. Positive colposcopic test is meant by Swede score more than or equal to 5 which was compared with biopsy report.

Total of 6 recurrence cases identified out of which 5 cases had high grade (Swede score >7) and one had low grade (Swede score 5-7) colposcopic features. On taking Swede score cut off of 5 or more, the sensitivity of colposcopy in detecting vault recurrence is 100%, specificity 96%, positive likelihood ratio of 25% and negative likelihood ratio of 0%. Overall the accuracy of colposcopy in detecting relapse was 96.8%.

Table 1: Demographic characters.

Parameters	Number of cases (n=31)
Age	
<40	0
40-60	16
>60	15
Primary disease	
Cervical cancer	19
Endometrial cancer	12
Primary treatment	
Surgery	10
Radiation	4
Surgery and radiation	17
Duration from primary treatment (min)	
<6	1
6-12	5
12-24	16
>24	9

Table 2: Colposcopic findings.

Characteristics	n	%
Acetowhite area		
Absent	22	71.0
Minor	4	12.9
Major	5	16.1
Erosion	9	29.0
Vessels		
Normal	23	74.1
Abnormal	8	25.8
Lugols iodine		
Positive	15	48.4
Patchy	13	41.9
Bright yellow	3	9.7
Atrophic features	21	67.7
Radiation changes (fibrosis, stenosis)	8	25.8
Swede score		
0-5	24	77.14
5-7	2	6.5
7-10	5	16.1

Table 3: Comparison of Swede score to histopathology diagnosis.

Swede score	Benign (%)	Malignant (%)
0-5 (n=24)	24 (100)	0
5-7 (n=2)	1 (50)	1 (50)
>7 (n=5)	0	5 (100)

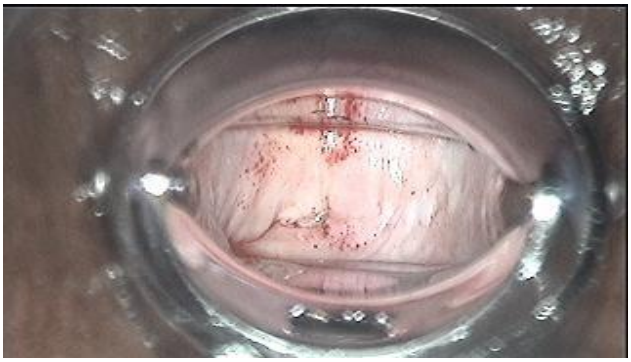

Figure 1: Atrophic vagina with petechial spots.

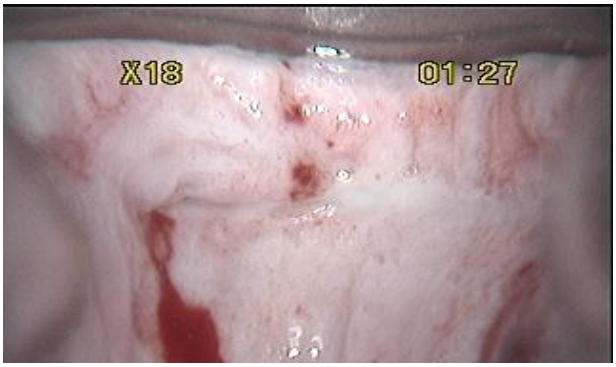

Figure 2: Fibrosis and vascular pattern under magnification.

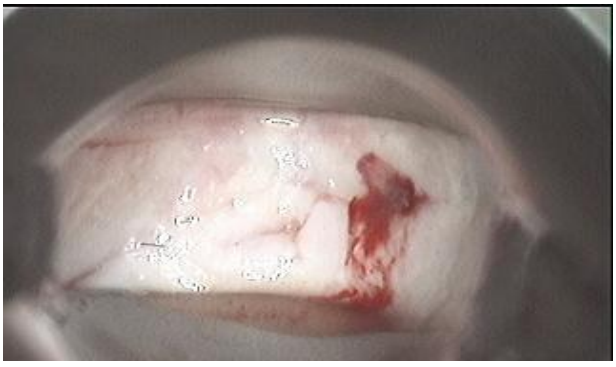

Figure 3: small mucosal lesion at 2-3 O'clock position.

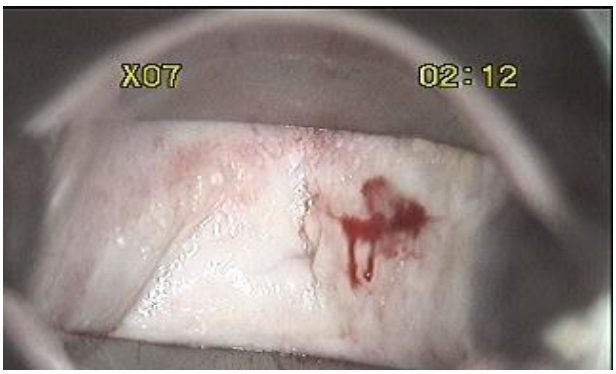

Figure 4: Same vagina after acetic acid application – acetowhite areas with mosaicism.

DISCUSSION

The vaginal vault is the commonest site of recurrence in gynaecological malignancies, especially cervical and endometrial cancers. Abnormal vaginal bleeding would be the most common symptom of recurrence though it could be due to other reasons like atrophy, post-radiation changes, erosion, and granulation tissue. After primary treatment, clinicians do regular clinical examinations and annual Pap smears. However, the most effective strategies for surveillance after patients have achieved a complete response are lacking. Many studies showed Pap smear is inefficient and identified an asymptomatic vaginal recurrence in only less than 1% of the cancer population.[5,6] Moreover, the Pap test is not reliable in case of active bleeding spots and after radiotherapy due to paucicellularity and radiation-induced atypia.[7] Most of the time a relapse is identified by clinical examination. In previous studies, around 10-15% of recurrence cases in the whole cohort and 15-20% in asymptomatic cases were identified by physical examination.[8-11] In our study, we analyzed patients with abnormal vaginal bleeding and no definite lesion suggestive of relapse on clinical examination. We could identify 19.4% (6/31) of relapses out of which all were having abnormal colposcopic findings. In our observation, colposcopic assessment could guide the diagnosis and avoid unnecessary biopsies. A magnified view of the vaginal vault could help to differentiate between small or papillary neoplastic mucosal outgrowths which are barely seen with the naked eye and other benign conditions like atrophic mucosa with petechial haemorrhage, erosions, and granulation tissue. Swede score of five or more has 100% sensitivity and 96% specificity in diagnosis and could be taken as a valid point to decide on a biopsy. In a study by Popović, 902 follow-up of patients; there were 65 (7.2%) abnormal colposcopic findings in which 43 (4.8%) relapses were detected.[12] Another study in which colposcopic follow-up examination was done in 82 treated gynecologic tumour patients comprising 10% of all examined by colposcopy during the same period. Twenty-one cases were found to have recurrence or metastasis in the cervix, vagina or vulva proven by pathology. Ten of these 21 cases were initially diagnosed by colposcopy. The conformation rate between colposcopic examination and pathology was 85.7%. An accuracy of 86.7% was achieved by a combination of cytology and colposcopy for recurrent tumours. The results showed that tumour recurrence can be detected earlier by colposcopy than by clinical examination.[13] Doing routine colposcopy in all patients under follow-up is cumbersome, expensive and uncomfortable for patients. So we utilized colposcopy in follow-up patients with abnormal vaginal bleeding with no specific clinical signs. In our experience, colposcopy is helpful to identify the cause of abnormal vaginal bleeding and aid in biopsy.

Limitations

This study has some limitations that should be taken into account when interpreting the results. It was a

retrospective observational study with a small sample size. The retrospective analysis was conducted to assess the feasibility of using colposcopy in post-treatment situations. The sample size was small because colposcopy is not a universally accepted method of follow-up. In clinical scenarios where patients experience bleeding per vaginally after treatment, they are usually advised to have cytology or blind biopsy. Given the usefulness of colposcopy in detecting vault relapse, we are planning to conduct prospective studies in the future.

CONCLUSION

Colposcopy is not a routine method of follow up in gynaecological cancers. But it is a minimally invasive tool to directly visualise the vault mucosa and its vascular pattern. In our experience colposcopy is worth in detecting the cause of abnormal vaginal bleeding after treatment for endometrial and cervical cancer. Swede score is a good measure to decide on taking biopsy among these patients. Furthermore, larger studies are needed for better clarification.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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