

Colposcopic Evaluation of Preinvasive Lesion of Cervix at Gynecology Outdoor in A Tertiary Level Hospital in Chattogram

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ABSTRACT

Carcinoma cervix is the 2nd most common gynecological cancer in female and an important cause of cancer death. But early detection and proper management can improve disease free and progression free survival. Colposcopy is a way of looking at the cervix through a special magnifying device called a colposcope. It is done when results of cervical cancer screening tests show abnormal changes in the cells of the cervix. So, the aim of the present study is to detect preinvasive and micro-invasive lesions of carcinoma cervix at the OBGYN outdoor in a tertiary level hospital.

Data was collected from patients visiting the gynecology outdoor for suspicious carcinoma cervix based on clinical history and screening tests (Pap smear and VIA test). After obtaining an informed written consent, a total of 324 patients were included in this study.

Most of the study subjects were found in the age group 31-40 years (41.36%); majority were from urban region (73.77%) and were house wives (77.78%). Regarding colposcopic evaluation, 32 (9.88%) patients had abnormal findings. 27 of them showed cervical intraepithelial neoplasia I (CIN I), 3 showed cervical intraepithelial neoplasia II (CIN II), 1 depicted cervical intraepithelial neoplasia III (CIN III), and one invasive cancer on colposcopy guided biopsy. All cases were managed accordingly. Among these patients, 25 showed a positive result on biopsy that was used as a confirmatory test. In the remaining 7 patients, biopsy showed chronic cervicitis. In this study colposcopy had a sensitivity of 78.125%.

Colposcopic evaluation is an important tool to diagnose, preinvasive and micro-invasive lesion of cervical carcinoma which can help in early detection and management of the patient.

Keywords

Colposcopy, Screening tool, Preinvasive lesion.

Background

In women, cervical cancer is the second most commonly diagnosed cancer in the world [1,2]. Its prognosis is worse in developing countries due to lack of screening [3]. Furthermore, despite

availability of screening, lack of access to healthcare, financial instability and lack of health awareness also plays a role in the worsening of this disease [4].

In Bangladesh, cancer is the 6th leading cause of death and in women cervical cancer and breast cancer are the most common [1]. In fact, the prevalence of cervical cancer in Bangladeshi women are between 25-30 per 100,000 women.

There are various causes of this disease. Sexual behavior factors, like first sexual intercourse at an early age, poor sexual hygiene and multiple sexual partners have shown an association with cancer of the cervix. HPV is an important agent that causes cervical cancer.

According to an article by Dresang [2], introducing cervical screening program in areas where they are unavailable can result in a 60% to 90% reduction in cervical cancer rates. Hence, undergoing colposcopy is a preferable option when abnormal Pap smear or VIA test results are found. Although the most common indication for colposcopy is an abnormal Pap smear, testing positive for HPVs also being considered as an option.

Colposcopy is a medical procedure used to inspect the cervix, vagina, vulva and anal epithelium for any abnormalities. This is done with the help of a colposcope, a 'low power binocular microscope, designed to magnify the surface epithelium of the vaginal part of the cervix including entire transformation zones [5]. First introduced by Hans Hinselmann in 1925 in Germany, this procedure is used as a backup tool for screening of cervical cancer. In fact, it is the primary method for the evaluation of an abnormal cervical cytology smear. Colposcopy is done when results of cervical cancer screening test shows abnormal changes in the cells of the cervix. However, this procedure is not sufficient alone as it has low sensitivity and positive predictive value. The major role in colposcopy is in guiding the diagnostic biopsy [6]. 'While the diagnostic ability of colposcopy is well understood and appreciated, scientific data on its potential as a screening method are limited [7]. The aim is to detect preinvasive and invasive lesions of carcinoma cervix using this method hence, evaluating its efficacy as a screening tool.

Materials and Methods

This is a hospital based observational study that was conducted at Chattogram Maa O Shishu Hospital for a three- year time period (Jan 2016- Dec 2018). All participants were voluntary and were included based on their clinical history or any abnormalities in screening test results (Papanicolaou test or VIA test). Patients with Diabetes Mellitus, pregnant women and women with previous history of cervical surgery were excluded from the study. A total of 324 patients met the inclusion criteria and were included in the study. Study results were analyzed using Microsoft Excel Software.

Procedure

The subject was placed in a dorsal position and the cervix was

initially visualized using a Cusco's speculum. The cervix was then cleared using a swab soaked in normal saline since mucus or any other discharge may obstruct the view. Then the cervix was wiped with 5% acetic acid and visualized using a binocular colposcope (Karl Kaps Japan).

Finally, Lugol's iodine solution was used to delineate normal from abnormal epithelium and biopsy from abnormal areas were taken. Biopsy results were used to confirm the diagnosis.

The colposcopic findings were categorized as normal if the epithelial cells were normal and the transformation zone was typical; abnormal if there was an atypical transformation zone or a suspected frank invasive cancer; and unsatisfactory if no transformation zone was visible.

Results

When we look at age variability, we see most patients are between the ages of 21 and 50. Only about 7.41 percent is beyond this age group. The highest number of individuals are between ages 31 to 40 and makes up 41.36% of the total subjects enrolled in the study. The lowest number of individuals are in the above 60 age group. In short, around 63% of colposcopic screening was done in the 31-50 years old age group (Table 1).

From the below table, it is evident that most patients come from the urban area making up 73.77% of the total population. 85 patients come from rural areas and thus make up about one- fourth of the total number of individuals (Table 2).

When categorized according to occupation, 252 of the patients were housewives and 72 were service holders. Among the service holders, majority of the women were garments workers. Other professions included school teachers or professors, doctors (both homeopathic and allopathic), nurses, etc (Table 3).

From colposcopic findings we see that 32 patients had abnormal colposcopic findings making up approximately 10% of all study subjects; and 19 had unsatisfactory findings. The rest were found normal (Table 4).

In the next table (Table 5), abnormal colposcopic findings were divided in to cervical intraepithelial neoplasia I (CIN I), cervical intraepithelial neoplasia II (CIN II), cervical intraepithelial neoplasia III (CIN III), or invasive cancer. 27 patients were diagnosed with CIN I, 3 were diagnosed with CIN II, 1 with CIN III and 1 as invasive cancer.

Among the 32 patients who had an abnormal colposcopic finding, around 25 showed a positive result on biopsy, which was used to confirm the diagnosis. Among the remaining 7 patients with abnormal colposcopic findings, biopsy usually indicated chronic cervicitis. Hence colposcopy was found to have a sensitivity of 78.125% (Table 5).

| Age | Number | Percentage |
|--------------|--------|------------|
| 21-30 | 94 | 29.01% |
| 31-40 | 134 | 41.36% |
| 41-50 | 72 | 22.22% |
| 51-60 | 18 | 5.56% |
| More than 60 | 6 | 1.85% |

Table 1: Age Variability.

| Area | Number | Percentage |
|-------|--------|------------|
| Urban | 239 | 73.77% |
| Rural | 85 | 26.23% |

Table 2: According to Locality.

| Category | Number | Percentage |
|----------------|--------|------------|
| Housewife | 252 | 77.78% |
| Service holder | 72 | 22.22% |

Table 3: According to occupation.

| Category | Number | Percentage |
|----------------|--------|------------|
| Normal | 273 | 84.26% |
| Abnormal | 32 | 9.88% |
| Unsatisfactory | 19 | 5.86% |

Table 4: According to colposcopic findings.

| Age | CIN I (%) | CIN II (%) | CIN III (%) | Invasive (%) |
|--------------|------------|------------|-------------|--------------|
| 21-30 | 10(3.09%) | 2(0.62%) | - | - |
| 31-40 | 17 (5.25%) | 1(0.31%) | 1(0.31%) | - |
| 41-50 | - | - | - | 1(0.31%) |
| 51-60 | - | - | - | - |
| More than 60 | - | - | - | - |

Table 5: Distribution of abnormal findings on colposcopy according to age.

| | CIN I | CIN II | CIN III |
|-------------------------|-------|--------|---------|
| Regression to normal | 60% | 40% | 80% |
| Persistence | 30% | 35% | 50% |
| Progression to CIN III | 10% | 20% | - |
| Progression to invasion | <1% | 5% | - |

Table 6: Fate of cervical intraepithelial neoplasia in study subjects.

Figure 1- CIN I



Figure 2- CIN II

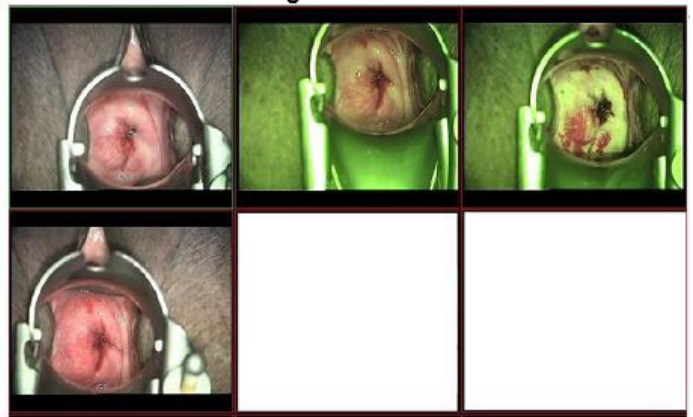


Figure 3- CIN III

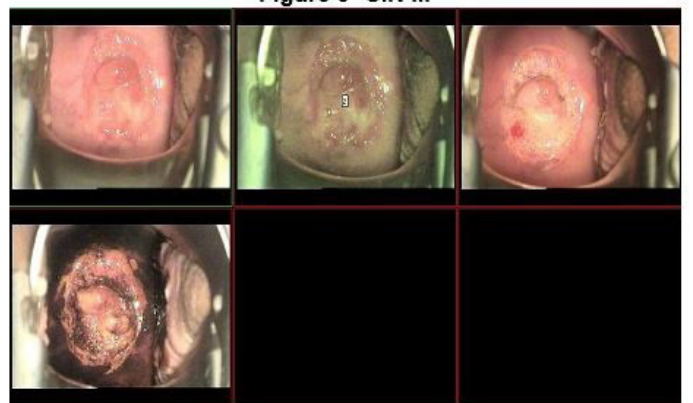
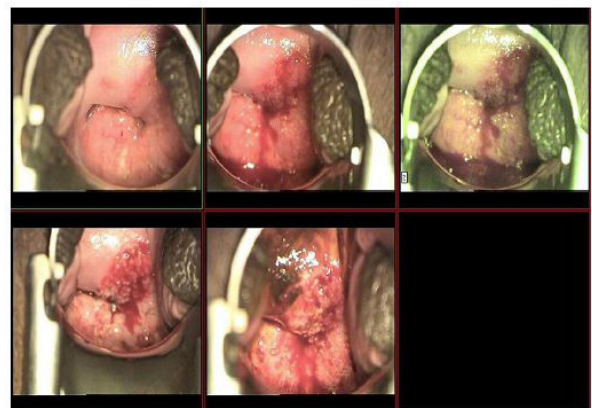


Figure 4- Invasive squamous cell carcinoma type 1 confirmed through biopsy



Among the 27 CIN I patients, 21 went through regression to normal and 6 had persistent CIN I which were managed by thermocoagulation at another hospital. Among the 3 patients who had CIN II, two patients were managed by LEEP procedure and one by total abdominal hysterectomy as disease was persistent and could progress to CIN III. One case of CIN III was diagnosed which was managed by total abdominal hysterectomy; and one case which was invasive was managed by Wertheim's hysterectomy (Table 6) (Figures 1-4).

Discussion

Most patients that came to hospital and included in the study were within the 21-50 age group. The number of patients decreased drastically beyond this age. This suggests that most patients come with complaints when they are premenopausal. Sexual activity is also a factor that can lead to a gynecological visit.

When we look at professions of the individuals, majority of the women were house wives. This is not something unexpected since majority of women in Bangladesh stay at home as tradition and culture dictates. However, as the trend is changing, and more and more females are working, we see service holders making up about one-fourth of the total subjects. What is interesting is that at least 48 of the 72 service holders work in garments factories. This could have two meanings- either garments workers are more self-aware, or they are more involved in unsafe sexual intercourse with multiple partners resulting in various complications. The latter is supported by a study on gender and HIV/AIDS in Bangladesh where high-risk groups include truck drivers, garments workers and rickshaw pullers [8].

On assessing the location of the subjects, we can see that most of them are from urban areas. It is possible that only women who have access to healthcare could have come to the hospital; hence only they could undergo screening. Thus, it is difficult to imply that most women in urban settings undergo colposcopy.

Assessment of cervical disease status relies mostly on colposcopy directed punch biopsies [9]. Hence biopsies were done on individuals who either had abnormal, unsatisfactory or suspicious findings. However, colposcopic impression of any abnormality is also prone to observer difference. Besides, there is data that shows that colposcopic guided biopsy misses a fair number of lesions [6]. And hence, even biopsy results cannot confirm a diagnosis accurately. Since colposcopic appearance is often complex, and the most abnormal area may be small, the sensitivity of the procedure will depend on taking more than a single biopsy in many cases. Hence, even experienced colpologists may miss the diagnosis. Thus, although our study yields a sensitivity of 78.125%, we cannot confirm that the finding is accurate.

Biopsies were not obtained from individuals who showed a normal satisfactory study since colposcopy, although a relatively safe procedure, may show adverse long-term effects like cervical stenosis or other obstetric complications [10]. Due to this, specificity could not be found.

To improve the accuracy of colposcopy results, optimum training must be given to improve the services in a reasonable period [1]. Appropriate training for colposcopy to resident physicians is necessary to improve diagnosis and management of abnormal histology and cytology as well as reduce unnecessary testing procedures. Inaccurate colposcopy and incorrect management

results in unnecessary tests, biopsies, and anxiety for patients [11].

Conclusion

In many developing countries, the incidence and mortality rates of cervical cancer has been declining due to wide spread screening and intervention. While colposcopy is an effective tool for screening; sex education, marital age, and child bearing practices, safe motherhood initiatives and vaccination against human papilloma virus (HPV) may also play an important role against cervical cancer [3].

Recommendations

Colposcopy can be used as a guide to collect specimens for biopsy in case of abnormal cervical findings. It is a tool that can improve accuracy in specimen collection and hence is advisable to be used where ever cervical intraepithelial neoplasia is suspected.

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