Original Article

Histological Changes of Endocervical Polypoid Lesions in Women at Reproductive Age

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Abstract

Background: Endocervical polyps (ECP) are fragile benign protrusions commonly affecting 2%–5% of women during the reproductive age. **Aim:** This study aimed to identify the histopathological changes of clinically identified endocervical polypoid lesions during the reproductive age to detect any premalignant or malignant transformation if present. The objective is to assist the clinicians to decide whether the cervical polyps should be excised or not. **Materials and Methods:** Sixty specimens of the resected cervical polyps were obtained from Al-Salaam Teaching Hospital in Mosul city during the period from June 2021 to February 2022, women diagnosed to have cervical polyps on per speculum examination were given a time to be operated on with exclusion of pregnant, postmenopausal women, those on hormone replacement therapy, and those below 20 years. After polypectomy, fixation of biopsies in 10% buffered formalin was done followed by processing and staining with hematoxylin and eosin for histological examination. Chi-square test was used for interpretation of the histological findings. **Results:** The study revealed that 52% of the enrolled women were in the range of 40–49 years of age. Squamous metaplasia and benign microglandular hyperplasia were detected equally in 25% of the study group. Nabothian cyst was observed in 8%, whereas leiomyoma presenting as cervical polyp in 6%. Fortunately, no malignant changes were reported in the examined 60 cases and the only serious lesion was cervical intraepithelial neoplasia (CIN) observed in 2% of the examined polyps. **Conclusion:** we conclude as the incidence of malignant transformation of endocervical polyp is low in women in reproductive age and the only critical lesion is *in situ* intraepithelial neoplasia (CIN), it is proposed to follow an expectant management without interference and those patients can be only followed up to improve their health.

Keywords: Changes, endocervical, histopathological, lesions, polypoid

Introduction

Endocervical polyps (ECP) are fragile benign protrusions frequently detected in approximately 2%–5% of reproductive-age women as the second most common polyps after the endometrial polyps.[1] Women with cervical polyps are asymptomatic and they are diagnosed incidentally in the gynecological practice during speculum examination, abdominal or transvaginal ultrasound or during colposcopy.[2] Cervical polyps might be single or multiple, friable, and readily bleed on touch, sessile or pedunculated, lobular or tear-shaped, soft, glistening cherry-red to purple in color.[3] Large clinical studies have shown that endocervical polyps rarely exhibit premalignant and malignant transformation; therefore, cautious histological assessment to rule out the malignant possibility should be considered.[4] Many theories about the causes, some proposed the concept that congestion of blood vessels and the consequent disturbance of the blood flow facilitate the growth of polyps, whereas other workers advocated that infection, chronic inflammation, some irritating chemicals, and estrogen therapy might induce unwarranted growths.[5] Multigravida may have an increased risk although majority of them are asymptomatic. However women may present with vaginal discharge or abnormal vaginal bleeding, such as intermenstrual or postcoital bleeding.[6] Many clinicians believed that it is reasonable to excise all cervical polyps regardless of patients

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complaints and their menopausal status, because that polyps are unlikely to resolve, as well as easy to remove, it is not known whether malignant transformation will occur or not particularly in asymptomatic women although removal of polyp is associated with the risk of anesthesia, infection, and bleeding.[7]

We conduct this study in order to identify the histopathological changes of clinically identified endocervical polypoid lesions during the reproductive age to detect any premalignant and malignant transformation if present. This might aid further management whether cervical polyps need to be removed or not.

Patients, Materials and Methods

Sixty specimens of the resected cervical polyps which have been observed by clinical examination were obtained from Al-Salaam Teaching Hospital in Mosul city during the period from June 2021 to February 2022, the patients included in the study were in the range of 20–55 years, attending the department of gynecology and exhibiting symptoms like vaginal bleeding or discharge, and sometimes abdominal mass were subjected to pelvic examination by speculum. Women diagnosed to have cervical polyps bulging through cervical os were given a time to be operated on and all signed on the consent form. Their age, parity, and presence of vaginal bleeding or discharge were recorded with exclusion of pregnant, postmenopausal women, those on oral contraceptives or hormone replacement therapy, and those below 20 years. After polypectomy, fixation of biopsies in 10% Buffered formalin was done followed by processing and staining with hematoxylin and eosin for histological examination. For interpretation of the histological findings, Chi-square test was used.[8]

Results

In this study, Table 1 showed the number and percentage of cases in relation to some sociodemographic parameters. All the enrolled 60 women were in the range of 20–55 years. After analysis of the clinical criteria, 52% of the women included were in the range of 40–49 years of age, whereas 25% of them were in age group 30–39 years. The remaining patients 11.6% were in the age group 50–59 years, the least common 11.4% of women were in the age group 20–29 years. A single endocervical polyps was detected in 80% of patients whereas two ECP in 16% and multiple polyps were observed in 4%. Endocervical polyps were asymptomatic in 42% of the included cases but the patients significantly coincide with abnormal vaginal spotting or bleeding 38%, abnormal vaginal discharge 10%, postcoital bleeding 10% of cases [Table 1].

Table 1: The Number and percentage of cases in relation to some sociodemographic parameters

Clinical parameter	No. of cases (n = 60)	%
Age group		
20–29	7	11.4%
30–39	15	25%
40–49	31	52%
50–55	7	11.6
Total	60	100%
No. of polyps		
Single	48	80%
Two	10	16%
Multiple	2	4%
Total	60	100%
Symptoms		
Asymptomatic polyp	25	42%
Vaginal bleeding or discharge	23	38%
Vaginal discharge	6	10%
Postictal bleeding	6	10%
	60	100%

Table 2: The percentage of histopathological findings in relation to the number of cases

Histological findings	No. of cases (n = 60)	%
Chronic inflammatory cell infiltration	10	16.6%
Ulceration of surface epithelium with congested blood vessels	10	16.6%
Squamous metaplasia	15	25%
Benign microglandular hyperplasia	15	25%
Nabothian cyst	5	8%
Leiomyoma	4	6
Cervical intraepithelial neoplasia	1	2.8
Total	60	100

Histological findings in endocervical polyps

Table 2 revealed the percentage of histopathological findings in relation to the number of cases. Microscopically, the cervical stroma appeared as highly cellular stroma [Figure 1A] and showed chronic inflammatory cell infiltration such as plasma cells and lymphocytes observed in 16.6% of the included cases [Figure 1B]. Ulceration of surface epithelium with congested blood vessels beneath the ulcerative surface is observed in 16.6% of patients [Figure 2]. However, squamous metaplasia of the surface epithelium is detected in 25% of the study group [Figure 3]. Proliferation of endocervical gland which may show benign microglandular hyperplasia, fragments of squamous epithelium with metaplastic changes are also found [Figure 4A] with neutrophilic infiltration [Figure 4B] in 25% or may appeared with cystic dilatation noticed as Nabothian cyst which was observed in 8% of patients [Figure 5] whereas cervical leiomyoma presenting as cervical polyp was found in 4 patients which represents 6% of the included cases [Figure 6]. Endocervical polyps appeared as cervical intraepithelial neoplasia (CIN) *in situ* in one patient only representing 2% of all the examined

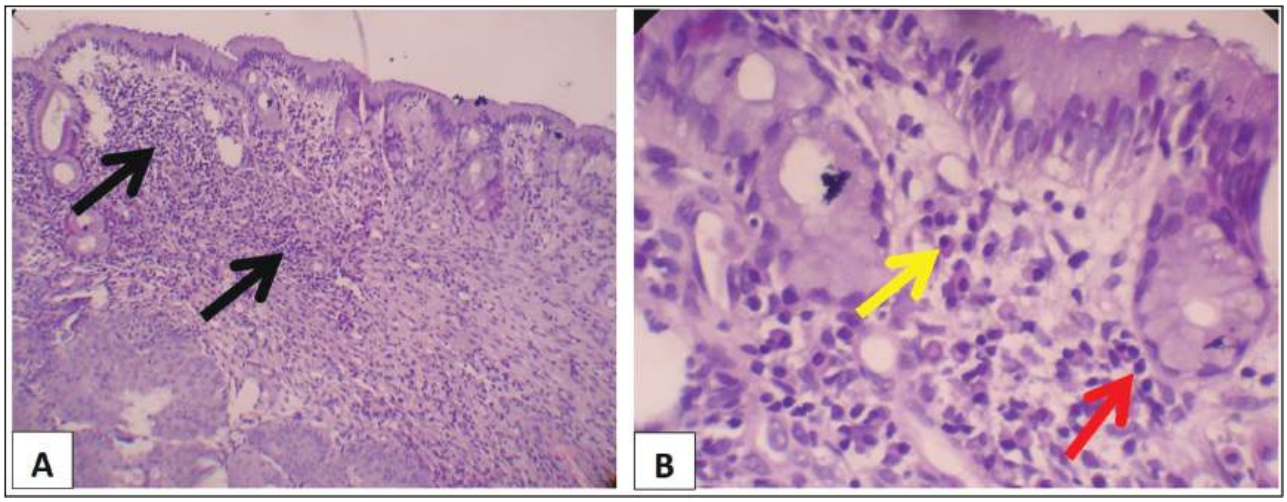

Figure 1: (A) Highly cellular cervical stroma (black arrows) (H&E ×100). (B) Chronic inflammatory cell infiltration like plasma (yellow arrow) cells and lymphocytes (red yellow) (H&E ×400)

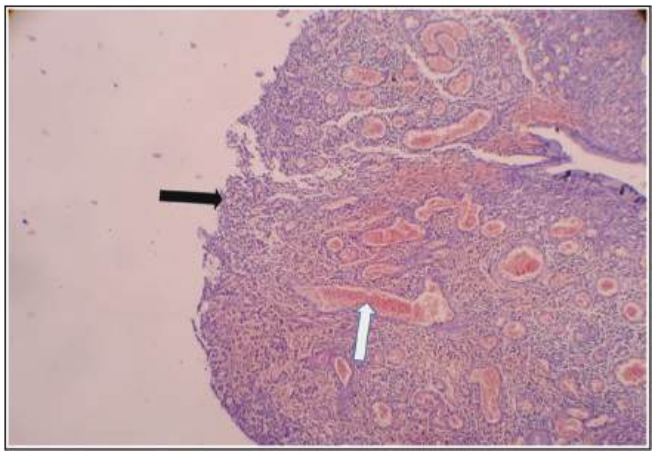

Figure 2: Ulceration of cervical surface epithelium (black arrow), congestion of blood vessels beneath the ulcerative surface (white arrow) (H&E ×100)

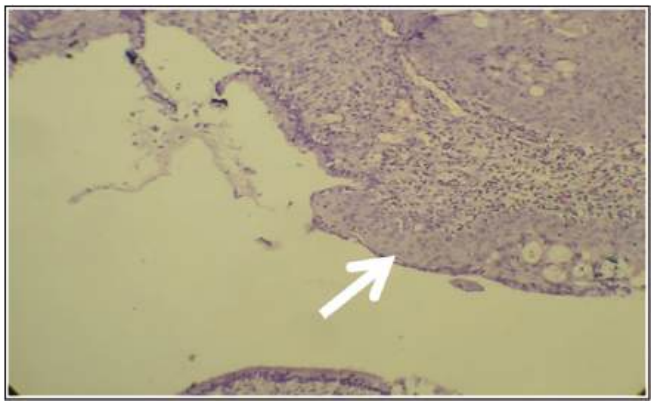

Figure 3: Squamous metaplasia of the surface epithelium (white arrow) (H&E ×100)

polyps. There was no malignancy noticed in any of the examined polyps [Table 2].

Discussion

Endocervical polyps are common benign exophytic localized hyperplastic lesions bulging from the wall of cervical canal found at any age and no definite etiologic factors, although the role of chronic inflammation has been hypothesized.[9] Usually, they not cause symptoms and discovered accidently. Endocervical polypoid lesions represent an irregular combination of glandular and epithelial squamous metaplasia with a core of fibrovascular tissue.[10]

Microscopically, many histological patterns of cervical polyp were noticed in literatures including loose, edematous stroma with variable vascular and inflammatory changes.[11]

Abnormal vaginal bleeding is the most frequent clinical manifestation of ECP. However the majority of patients may be asymptomatic. Previous workers suggest that there is no constant correlation between abnormal vaginal bleeding and the diagnosis of polyps which explains why hysteroscopic resection does not always reprieve the symptoms.[12] In this study, the only critical finding is cervical intraepithelial neoplasia in 2% of the enrolled sixty cases of ECP in agreement with other studies[5,7] who stated that although CIN limited to endocervical polyp is very rare, all polyps should be promptly resected and endometrial biopsy should be recommended and subjected to histopathological evaluation for better prognosis.

Squamous metaplasia was detected in 25% of patients with ECP, similar finding in a cohort study conducted by Park *et al.*[13] who reported 1.1% prevalence of high-grade squamous intraepithelial metaplasia and 0.1% squamous cell carcinoma on examining endocervical polypoid lesions particularly in women with intrauterine contraceptive device, and those suffered from chronic

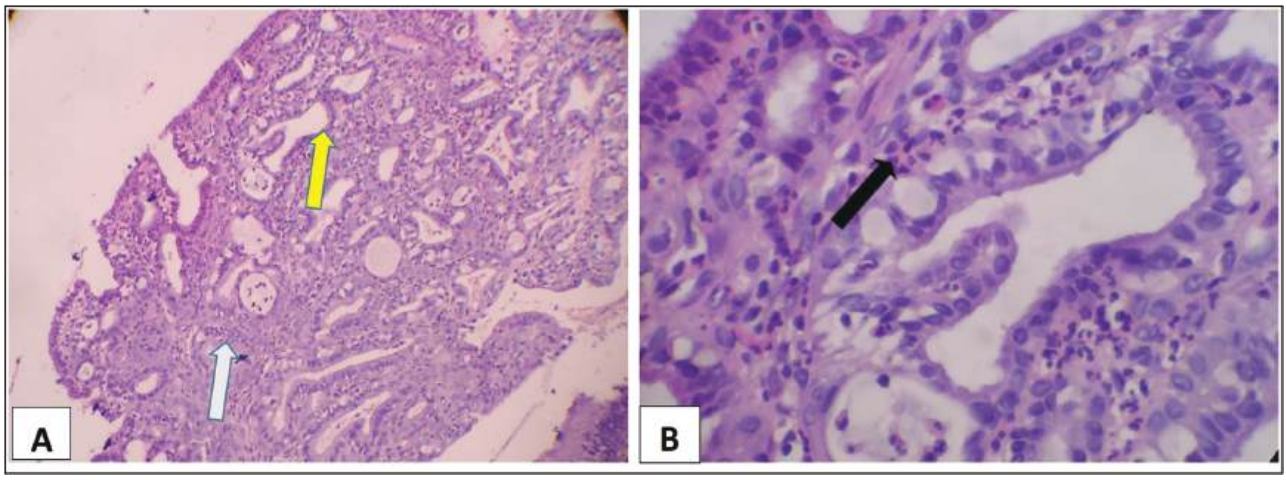

Figure 4: (A) Benign microglandular hyperplasia of endocervical glands (white arrow) fragments of squamous epithelium with metaplastic changes (yellow arrow) (H&E ×100). (B) Infiltration of neutrophilic cells (black arrow) (H&E ×400)

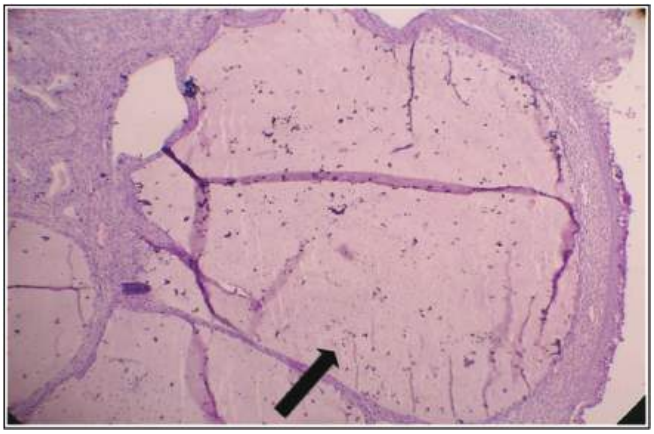

Figure 5: Cystic dilatation of endocervical glands as Nabothian cyst (black arrow) (H&E ×100)

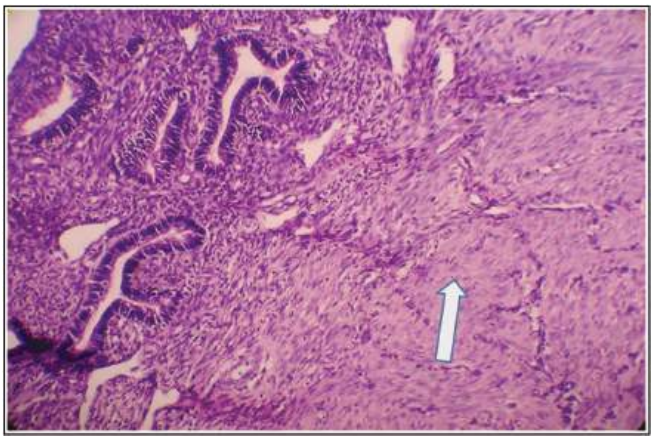

Figure 6: Lieomyoma of endometrium presenting as cervical polyp (white arrow) (H&E ×100)

cervical infection and chemical irritation. Squamous metaplasia not essentially precedes cancer although few irritants might induce squamous metaplasia in columnar cells followed by cervical carcinoma in the experimental animals.[14]

Benign microglandular hyperplasia was detected in 25% of the study group, it is a relatively common benign finding that may be confused with adenocarcinoma and might be provoked by the use of oral contraceptive pills. The cervical gland become crowded lined by cuboidal epithelium with no nuclear atypia such finding similarly observed by Stewart *et al*.[15]

Nabothian cysts were noticed in 5% of cases, which are common retention cysts at the squamocolumnar junction of cervix, filled with mucus or proteinaceous material, easily recognized during colposcopy examination.[16] Previously detected to be prolapsed into the vagina thus presented as endocervical polyp as a result of trauma or inflammation usually produce no symptoms only if enlarged.[17] Nabothian cysts can be distinguished malignancies on the basis of preoperative evaluation and imaging techniques such as magnetic resonance imaging. Although rare, they should be considered as a cause of urinary problems such as urine retention in women.[18]

Cervical leiomyoma or fibroid was observed in 2% of the study group, it is a rare usually single non-epithelial, benign monoclonal tumors of smooth muscle with fibrous connective tissue stroma might be interstitial, subserous or seldom submucous. However, the submucous category grows like polyps.[19] Similar presentation of cervical fibroids has been detected previously in literature as a case report with diverse manifestations posing quite challenging diagnosis and management which require good anatomical and clinical judgment.[20] Small cervical polyps are common incidental finding on speculum examination, whereas giant cervical polyps more than 4 cm are infrequent which might induce variable pressure symptoms like urinary retention, dyspareunia, frequency,

and rare prolapsed cervical fibroid polyp which might mimic uterine inversion or even procidentia.[21]

Conclusion

We conclude that in women at reproductive age the malignant transformation of the epithelial and glandular tissue of endocervical polyp is rare but the only critical lesion is *in situ* intraepithelial neoplasia (CIN). Majority of women with endocervical polyp were diagnosed accidently. The incidence of squamous metaplasia and benign microglandular hyperplasia is equally observed in 25% of cases whereas Nabothian cyst and leiomyoma were observed in 8% and 6% of the examined polyps, respectively.

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Conflicts of interest

There are no conflicts of interest.

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