Pathology – Research and Practice 212 (2016) 800–803

Contents lists available at ScienceDirect

Pathology – Research and Practice

journal homepage: www.elsevier.com/locate/prp

Original article

Cervical polyps: Is histologic evaluation necessary?

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ARTICLE INFO

Article history:
Received 27 April 2016
Received in revised form 1 June 2016
Accepted 22 June 2016

Keywords:
Cervical polyps
Cervical dysplasia
Cervical malignancy
Mullerian adenosarcoma

ABSTRACT

Objective: The aim of this study was to examine a series of clinically identified cervical polyps and determine the incidence of significant histologic and concurrent cytologic findings.
Methods: Consecutive cervical polyps from January 2000 through September 2012 were retrieved from the hospital laboratory information system. Histologic evaluation of these polyps was performed, followed by a chart review of clinical findings and correlation with the immediately prior or concurrently collected cervical Papanicolaou (Pap) test results, when available.
Results: A total of 369 cervical polyps were identified and reviewed. The patient ages ranged from 18 to 87 years (mean 46.5 years). Eight polyps demonstrated squamous dysplasia (6 Cervical Intraepithelial Neoplasia/CIN I, and 2 CIN II/III), while 6 had malignant or atypical/potentially malignant features (2 adenosarcoma, 2 atypical polyps concerning for Mullerian adenosarcoma, 1 endometrioid endometrial adenocarcinoma and 1 adenocarcinoma in-situ). An increased incidence of atypical squamous cells of undetermined significance (ASCUS) and atypical glandular cells not otherwise specified (AGC NOS) Pap diagnoses (12.7% and 6.1%, respectively) was found in women with benign polyps on biopsy.
Discussion: We demonstrated a higher rate of clinically significant histologic findings in cervical polyps (14 of 369 cases, 3.7%) compared to previously reported studies. The increase in ASCUS and AGC Pap results was most likely related to reactive and inflammatory changes present in benign polyps. Our results suggest that removal of all cervical polyps with subsequent histologic review is warranted.

1. Introduction

Cervical polyps arise within the endocervical canal and are reportedly present in 2–5% of women of reproductive age [1]. Cervical polyps are composed of papillary proliferations of epithelial tissue around a fibrovascular stromal core which may have glandular or squamous epithelium. Cervical polyps are frequently asymptomatic and can be discovered upon routine gynecologic examination whereas symptomatic polyps commonly present with intermenstrual, postcoital and/or postmenopausal bleeding [2]. Large clinical studies have shown that cervical polyps are usually benign, with a prevalence of malignancy in only 0.1% of cases [3,4]. The underlying pathophysiology of cervical polyps is uncertain; possible causes include chronic inflammation, hormonal stimulation, and/or congestion of cervical blood vessels [5].

Recently published studies state that histologic examination of all cervical polyps may not be necessary because the likelihood of finding a malignant lesion is so low, and concluded that in asymptomatic polyps there was no indication for polypectomy and histologic examination if the concurrent Pap test is normal [6–8]. Furthermore, it has been reported that the most common malignancy identified in cervical polyps is endometrial in origin, and that primary cervical/endocervical malignancy in a cervical polyp is very rare [4].

A recent British study evaluated the cost efficacy of performing polypectomies on symptomatic cervical polyps, or polyps with concurrent atypical Pap test results, as opposed to the removal of all cervical polyps[7]. The majority (67%) of polyps in their study were asymptomatic, and no cases of malignancy were found in 1366 cervical polyps. Given the current health care environment, there is concern that the unnecessary removal of polyps can have a significant effect on health care resources. This study concluded that significant decrease in health care costs could be attained if asymptomatic polyps were not removed [7].

Abbreviations: Pap, Papanicolaou test; hr-HPV, high-risk Human Papilloma Virus; ASCUS, atypical squamous cells of undetermined significance; AGC NOS, atypical glandular cells not otherwise specified; ASC-H, atypical squamous cells: cannot exclude high-grade squamous intraepithelial lesion; LSIL, low-grade squamous intraepithelial lesion; HSIL, high-grade squamous intraepithelial lesion.

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http://dx.doi.org/10.1016/j.prp.2016.06.010
0344-0338/

Conversely, there are experts who recommend routine removal of all cervical polyps [4,9,10]. The studies that support this approach argue that removal of all cervical polyps is helpful to rule out malignancy or explain atypical Pap test results. Two studies have reported higher rates of atypia and dysplasia in endocervical polyps in premenopausal patients and an increased frequency of malignancy in cervical polyps in post-menopausal patients [9,11]. Fauth et al. [9] reported an incidence of dysplasia and malignancy in 1.4% of 4402 cervical polyps examined, and Schnatz et al. [4] evaluated 2458 polyps and reported rates of cervical malignancy, dysplasia and atypia at 0.1%, 0.7%, and 1.9%, respectively in women younger than 50 years (premenopausal women).

Cervical polyps may also be the presenting finding of carcinoma from elsewhere in the gynecologic tract. A Turkish study of 4063 patients found 3 cases of metastatic endometrial adenocarcinoma in cervical polyps of postmenopausal women [11]. They concluded that endometrial pathology may be associated with endocervical polyps in the postmenopausal group. Studies have found increased incidence of endometrial malignancies and hyperplasia in patients with postmenopausal bleeding [12,13].

Benign polyps have been associated with squamous metaplasia, microglandular hyperplasia, inflammation, erosion, Arias-Stella reaction, and endometriosis [10]. Morphologic findings of reactive changes may be interpreted as atypical findings on cytologic evaluation. Prior studies have shown that a significant number of AGC Pap test results are related to benign endocervical polyps; Cheng [14] reported 21% of AGC cases had histologic findings of benign polyps and Sorosky [3] reported that 71% of AGC pap tests corresponded to reactive changes, benign polyps and normal endocervical histology.

2. Methods

All consecutive endocervical polyps evaluated at the University of Arkansas for Medical Sciences (UAMS) between January 2000 and September 2012 were retrieved from electronic medical records. The search terms "cervix", "endocervix", "cervical polyp", "endocervical polyp, and 'atypical polyp' were used to identify cases within the clinical information and final diagnosis fields of the pathology reports. The laboratory information system was also utilized to obtain clinical information that included patient demographics, clinical presentation, type of procedure and histologic diagnosis. Results of cervical Pap tests performed at the time of cervical biopsy or within one month before or after the procedure were collected with high-risk Human Papilloma Virus (hr-HPV) DNA results when available. This study was approved by the UAMS Institutional Review Board.

Specimens with scant tissue that did not meet the histologic criteria for a cervical polyp were excluded. All cases were reviewed by a pathologist (RAL) and atypical findings were confirmed by a second pathologist (CMQ). The polyps were evaluated for the following histomorphologic features: inflammation, thick walled vessels, reactive epithelium, squamous metaplasia, tubal/endometrial metaplasia, microglandular hyperplasia, endometriosis, atypical stromal cells, stromal mitoses, granulation/ulceration, cervical intraepithelial neoplasia, and evidence of malignancy. We analyzed the data under two age groups; premenopausal (age <50 years) and post-menopausal (≥50 years). Categorization of menopausal status of patients by age is not ideal, however, it has been used in previously reported studies [2,4,6]. Histologic findings of the biopsies were correlated with Pap results and hr-HPV DNA results, when available. Microsoft Excel was used to analyze the data. Contingency tables were analyzed with Fisher's exact test and $p < 0.05$ was considered as significant.

Table 1
Breakdown of age ranges of 369 women with cervical polyps.

Age (years)	N	%
Total	369	100
18–20	3	0.8
21–29	33	8.9
30–39	73	19.8
40–49	119	32.2
50–59	96	26.0
60+	43	11.7
Unknown	2	0.5

Table 2
Incidence of reactive histologic findings in benign cervical polyps.

Benign and Reactive Findings	Incidence
Inflammation	356 (96.5%)
Thick walled vessels	361 (97.8%)
Reactive epithelium	336 (91.1%)
Squamous metaplasia	145 (39.3%)
Tubal/endometrial metaplasia	79 (21.4%)
Multiglandular hyperplasia	67 (18.2%)
Endometriosis	18 (4.9%)
Atypical stroma	29 (7.9%)
Stromal mitoses	5 (1.3%)
Granulation/Ulceration	53 (14.1%)

3. Results

A total of 369 cervical polyps were identified and reviewed. Patient age ranged from 18 to 86 (mean age 46.5 years) (see Table 1). Three hundred fifty-six of these polyps (96.47%) showed reactive findings, and over 90% of them contained the characteristic findings of inflammation, thick-walled vessels, and reactive epithelium. Squamous, tubal and endometrial metaplasia were common findings in the benign polyps as well (see Table 2). Seventy-seven women with cervical polyps presented with vaginal bleeding (20.87%) while the remaining were either asymptomatic or the reason for presentation was not documented.

Pap test results were available in 228 patients with polyps. Sixty-four of them had abnormal cytologic findings (29 ASCUS, 14 cases of AGC NOS, 3 ASC-H (Atypical squamous cells: cannot exclude high-grade squamous intraepithelial lesion), 15 LSIL (low-grade squamous intraepithelial lesion) and 3 HSIL (high-grade squamous intraepithelial lesion)), yet benign histologic features on corresponding polyps. In our study population, hr-HPV DNA molecular tests were available on 8 patients with Pap tests showing atypical squamous cells of uncertain significance (ASCUS). Six of the 8 patients had positive hr-HPV results. Of the remaining Pap tests with ASCUS, either hr-HPV DNA testing was not performed in house or the Pap test was performed prior to 2003 when hr-HPV DNA tests were not routinely use. Regardless of the HPV status however, all patients with ASCUS on Pap tests showed histologically benign cervical polyps.

We identified 14 cases (3.7%) with clinically significant histologic findings consisting of squamous dysplasia, atypical polyps, and malignancies in polyps (see Table 3). Eight polyps showed squamous dysplasia including 6 cases of LSIL (CIN I) and 2 cases of HSIL (CIN II–III) on the polyp surface; 2 polyps had adenosarcoma, 2 polyps demonstrated atypical features concerning for a Mullerian adenosarcoma, 1 polyp was involved by endometrioid endometrial adenocarcinoma and 1 polyp displayed adenocarcinoma in-situ (see Fig. 1). The 8 polyps with dysplasia accounted for 2.17% of all polyps examined and the 6 polyps with atypical and malignant findings accounted for 1.63%. Within the premenopausal age group, 12 of 229 patients (5.24%) were found to have dysplastic or malignant results while in the postmenopausal group they accounted for 1.43% (2 of 140 patients) (Fisher's Exact Test p-value = 0.0903).