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Research Article

Endometrial Polyps Prevalence in Uterine Leiomyoma and Correlated Clinical Factors in Patients Attending Tertiary Center

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Abstract

Background *Abnormal uterine bleeding is a common clinical presenting scenario in every day gynecological practice usually have various causes but the most challenging is the preexisting hyper estrogenic pathological status. Fibroids, endometriosis and endometrial polyps are considered and believed to be a form of pathological disorders triggered by a hyper estrogenic status however the research debate and interest in finding whether they are correlated.*
Aim *to investigate the endometrial polyp's prevalence in cases having uterine leiomyomas and correlated clinical factors in coexistence of those two pathological categories.*
Methodology *A retrospective clinical research trial in which the medical records of 400 research study subjects that have undergone hysterectomy from January 2014 till February 2017 due to uterine leiomyomas have been reviewed for research data variables collection, tabulation and analysis.*
Results *statistical Logistic regression analysis for un-adjusted odds ratio showing statistical significance as regards Number of fibroids ≥ 2, Fibroid size ≥ 7.5, Endometrial hyperplasia, Cervical polyp (p values =0.037, 0.021, 0.001, 0.001 consecutively) and adjusted odds ratio showing statistical significance as regards Number of fibroids ≥ 2, Fibroid size ≥ 7.5, Endometrial hyperplasia, Cervical polyp (p values = 0.022, 0.013, <0.001, <0.001 consecutively)*
Conclusions *The current research study reveals and display that the age, number of fibroids, diameter of the largest fibroid, are correlated factors for coexistence of endometrial polyps and uterine fibroids.*

Introduction

Abnormal uterine bleeding is a common clinical presenting scenario in every day gynecological practice usually have various causes but the most challenging is the preexisting hyper estrogenic pathological status. Fibroids, endometriosis and endometrial polyps are considered and believed to be a form of pathological disorders triggered by a hyper estrogenic status however the research debate and interest in finding whether they are correlated is still widely investigated [1,2,3].

Endometrial polyps are due to endometrial glands and stroma abnormal overgrowth pattern. Interestingly prior research groups of investigators have revealed and displayed that the prevalence of endometrial polyps is around 10-40% in females clinically presenting with abnormal uterine bleeding and rises in a directly proportional manner with increase in age within the reproductive life [4,5,6].

Various forms and protocols are implemented in the diagnosis and management of abnormal uterine bleeding, general and local examination with targeted investigations according to the cases general condition with hormonal profile is a widely practiced management manner all over the globe ,however the most widely implemented imaging procedure for visualization and determination of endometrial polyp location is transvaginal sonography conjugated with sono-hysterography, and diagnostic hysteroscopy [7,8,9].

Histopathological examination of endometrial polyps and excised fibroids is critical to exclude the malignant trans formation. interestingly it was observed by prior research efforts that the risk of malignant transformation is around 3 % of endometrial polyps [10,11,12].

leiomyomas within the uterus are the most frequent benign tumors in females and are the most common cause if hysterectomy particularly when medical conservative treatment fails and patient completed her family, however myomectomy is practiced when fibroids are causing

reduced fertility capacity in order to raise the chances of conception and the management protocol choice is usually tailored according to the clinical scenario of the case [13,14].

Aim of the work

To investigate the endometrial polyp's prevalence in cases having uterine leiomyomas and correlated clinical factors in coexistence of those two pathological categories.

Methodology

A retrospective clinical research trial in which the medical records of 400 research study subjects that have undergone hysterectomy from January 2014 till February 2017 due to uterine leiomyomas have been reviewed for research data variables collection, tabulation and analysis.

Cases have been categorized into two research categorial groups in accordance according to the existence of endometrial polyps. Exclusive research criteria were as follows hysterectomy perfumed due to gynecologic malignancy, benign ovarian disease, and uterine prolapse, cases that have undergone myomectomy. Uterine leiomyomas and endometrial polyps have been diagnosed using transvaginal Sonographic assessment and verified by through histopathologic. Specimens examination. all research study subjects in both categorial groups (fibroid research group, fibroid + endometrial polyp research group) research data were collected involving age, BMI, parity, contraception, hemoglobin levels, cesarean section history, smoking, hypertension, DM, and abnormal uterine bleeding. The number of uterine Leiomyomas, size and site of the largest fibroid, and other associated gynecologic pathologies (e.g. adenomyosis, endometrial hyperplasia, and endometriosis) have been recorded from histopathological reports.

Statistical Analysis

Data were collected, revised, coded and entered to the Statistical Package for Social Science (IBM SPSS) version 23. The quantitative data were presented as mean, standard deviations and ranges when parametric and compared between the two groups using Independent t-test while qualitative data were presented as numbers and percentages and compared between the two groups using Chi-square test and/or Fisher exact test when the expected count in any cell found less than 5. Receiver operating characteristic curve was used to assess the cutoff point between the two groups regarding age, number of fibroid and largest fibroid size. Logistic regression analysis was used to assess the associations between endometrial polyp with fibrosis with the histopathological findings with adjustment for age and HTN of the studied patients. The confidence interval was set to 95% and the margin of error

accepted was set to 5%. So, the p-value was considered significant at the level of < 0.05.

Results

Table 1 reveals and displays the demographic clinical history and symptom profile of the investigated research groups Endometrial polyp+ uterine fibroid research group versus Uterine fibroid research group only in which there was no statistical significant difference between both groups as regards BMI (kg/m2), Parity, Gravidity, Abortions, Hb (g/dl)(p values 0.483, 0.298, 0.479, 0.264, 0.901 consecutively) whereas age mean and age ≥ 46, no. (%) was statistically significantly different (p values =0.016,0.003 consecutively). Furthermore there was no statistical significant difference as regards Previous CS, no (%), DM, no (%),Smoking, no ., (%)Post menopause, no (%)IUD use no. (%)(p values = 0.456, 0.422, 0.797, 0.733, 0.933 consecutively) whilst HTN, no. (%) was statistically significantly higher among the fibroid only research group (p value=0.040) .additionally there was no statically significant difference between the investigated research groups as regards the symptom profile {no symptoms, Positive symptom ,Abnormal uterine bleeding ,Pelvic pain, Pelvic pressure, Dysmenorrhea, Urinary tract symptoms, Bowel symptoms (p values =0.199, 0.694, 0.742, 0.477, 0.466, 0.104, 0.158 consecutively)}.

Table 2 and figure 1 reveals and displays the Comparative statistical analysis between the two investigated research groups as regards histopathological findings in which there was statistical significant higher proportion of Number of fibroids ≥ 2 ,Fibroid size ≥ 7.5 , Endometrial hyperplasia, Cervical polyp among the Endometrial polyp + uterine fibroid research group (p values=0.036,0.019, <0.001, <0.001 consecutively),whereas there was no statistical significant difference between Largest fibroid location 1-Submucosal, 2-Intramural, 3-Subserous, Presence of Adenomyosis ,Existence of Endometriosis (p values =0.066, 0.425, 0.896, 0.225, 0.123 consecutively).

Table 3 reveals and displays statistical Logistic regression analysis for un-adjusted odds ratio showing statistical significance as regards Number of fibroids ≥ 2 ,Fibroid size ≥ 7.5, Endometrial hyperplasia, Cervical polyp (p values =0.037, 0.021, 0.001, 0.001 consecutively) and adjusted odds ratio showing statistical significance as regards Number of fibroids ≥ 2, Fibroid size ≥ 7.5, Endometrial hyperplasia, Cervical polyp (p values = 0.022, 0.013, <0.001, <0.001 consecutively).

Parameters	Total cases No. = 400 (100%)	Endometrial polyp + uterine fibroid No. = 85 (21.3%)	Uterine fibroid No. = 315 (78.8%)	Test value	P-value
Age (years), mean±SD	48.01 ± 8.19	48.65 ± 8.97	47.36 ± 7.41	**2.413•**	**0.016**
Age ≥ 46, no. (%)	272 (68.0%)	69 (81.2%)	203 (64.4%)	**8.612***	**0.003**
BMI (kg/m^2), mean ± SD	34.29 ± 8.92	34.68 ± 8.42	33.89 ± 9.41	0.702•	0.483
Parity, mean ± SD	3.55 ± 1.93	3.67 ± 1.86	3.42 ± 1.99	1.042•	0.298
Gravidity, mean ± SD	2.94 ± 1.59	3.01 ± 1.53	2.87 ± 1.64	0.708•	0.479
Abortions, mean ± SD	1.60 ± 1.07	1.52 ± 1.01	1.67 ± 1.12	-1.118•	0.264
Hb (g/dl), mean±SD	11.66 ± 3.01	11.63 ± 2.55	11.68 ± 3.47	0.124•	0.901
Previous CS, no. (%)	52 (13.0%)	9 (10.59%)	43 (13.65%)	0.555*	0.456
DM, no. (%)	38 (9.5%)	10 (11.76%)	28 (8.89%)	0.644*	0.422
HTN, no. (%)	73 (18.3%)	22 (25.88%)	51 (16.19%)	**4.214***	**0.040**
Smoking, no. (%)	60 (15.0%)	12 (14.12%)	48 (15.24%)	0.066*	0.797
Postmenopause, no. (%)	43 (10.8%)	10 (11.76%)	33 (10.48%)	0.116*	0.733
IUD use, no. (%)	46 (11.5%)	10 (11.76%)	36 (11.43%)	0.007*	0.933
Symptoms				1.643*	0.199
No symptoms	38 (9.5%)	5 (5.88%)	33 (10.48%)		
Positive symptoms	362 (90.5%)	80 (94.12%)	282 (89.52%)		
Abnormal uterine bleeding	*224 (56.0%)*	*46 (54.12%)*	*178 (56.51%)*	0.155*	0.694
Pelvic pain	*90 (22.5%)*	*18 (21.18%)*	*72 (22.86%)*	0.108*	0.742
Pelvic pressure	*22 (5.5%)*	*6 (7.06%)*	*16 (5.08%)*	0.505*	0.477
Dysmenorrhea	*6 (1.5%)*	*2 (2.35%)*	*4 (1.27%)*	0.531*	0.466
Urinary tract symptoms	*16 (4.0%)*	*6 (7.06%)*	*10 (3.17%)*	2.630*	0.104
Bowel symptoms	*4 (1.0%)*	*2 (2.35%)*	*2 (0.63%)*	1.996*	0.158
Bold Indicate significant difference between groups BMI: Body mass index; CS: Cesarean section; DM: Diabetes mellitus; HTN: Hypertension, IUD: Intrauterine device; Hb: Hemoglobin; •: Independent t-test; *: Chi-square test					

Table 1: Demographic, history and symptoms of the two studied groups.

Parameters	Endometrial polyp + uterine fibroid No. = 85 (21.3%)	Uterine fibroid No. = 315 (78.8%)	Test value*	P-value
Number of fibroids ≥ 2	60 (70.6%)	183 (58.1%)	**4.381**	**0.036**
Fibroid size ≥ 7.5	30 (35.3%)	72 (22.9%)	**5.45**	**0.019**
Largest fibroid location				
Submucosal	4 (4.7%)	36 (11.4%)	3.361	0.066
Intramural	69 (81.2%)	243 (77.1%)	0.635	0.425
Subserous	12 (14.1%)	40 (12.7%)	0.017	0.896
Adenomyosis	17 (20.0%)	46 (14.6%)	1.469	0.225
Endometriosis	7 (8.2%)	13 (4.1%)	2.378	0.123
Endometrial hyperplasia	9 (10.6%)	6 (1.9%)	**13.984**	**<0.001**
Cervical polyp	12 (14.1%)	12 (3.8%)	**12.611**	**<0.001**
Bold indicate significant difference between groups Data were presented as numbers and percentages and compared using * Chi-square or Fisher exact test				

Table 2: Comparative statistical analysis between the two investigated research groups as regards histopathological findings.
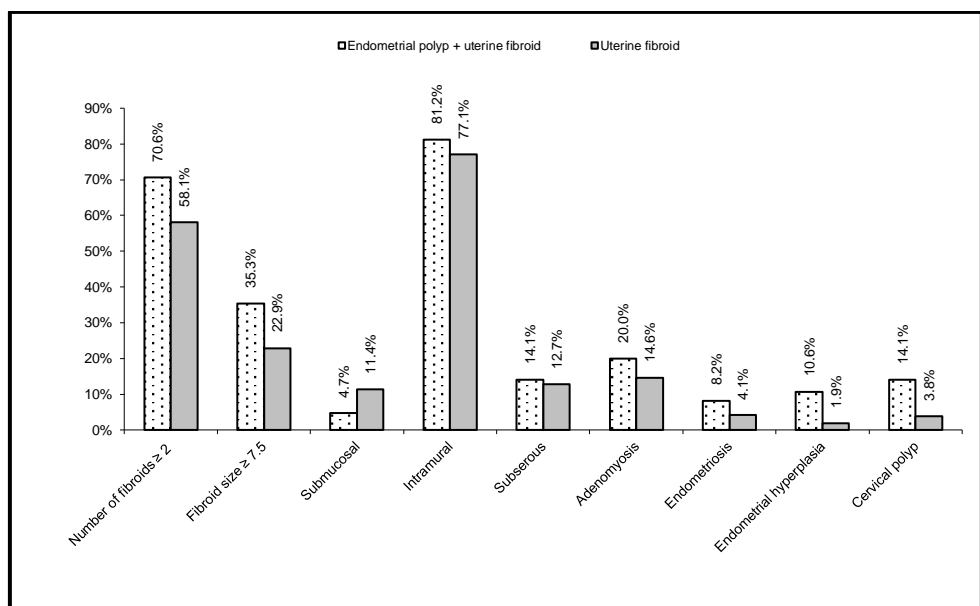
Figure (1): Comparative statistical analysis between the two investigated research groups as regards histopathological findings.

Parameters	Unadjusted OR (95% CI), p-value	Adjusted* OR (95% CI), p-value
Number of fibroids ≥ 2	1.731 (1.0318 to 2.9045), **0.037**	1.725 (1.125 to 3.142), **0.022**
Fibroid size ≥ 7.5	1.841 (1.0980 to 3.0865), **0.021**	1.903 (1.2135 to 3.3214), **0.013**
Endometrial hyperplasia	6.099 (2.1065 to 17.6570), **0.001**	6.188 (2.215 to 12.364), **< 0.001**
Cervical polyp	4.151 (1.7919 to 9.6143), **0.001**	4.009 (1.8136 to 7.6431), **< 0.001**
Bold: Indicate significant *: Odds ratio adjusted for age and hypertension		

Table 3: Logistic regression analysis for un-adjusted and adjusted odds ratio for factors related to endometrial polyp + uterine fibroid.

Discussion

Abnormal bleeding of uterine origin is a frequent clinical scenario having a major influence on the female's quality of life. The prevalence rate of abnormal uterine bleeding in females aged 18 to 50 years old have been statistically estimated in prior research efforts to be around 53 per 1000 women. Polyps of the female lower genital system is observed in around 7.8–50% of females clinically presenting with abnormal uterine bleeding patterns, infertility, and recurrent miscarriage issues. polyps at histopathological levels could be hyperplastic, atrophic, or functional. Endometrial polyps, adenomyosis, and leiomyomas are frequently presenting pathologies that could coexist in the same patient in various clinical situations that vary according to the reproductive age group [15,16].

Prior research groups of investigators have revealed and displayed that endometrial polyps are one of the chief etiologies casing abnormal uterine bleeding patterns incidence rises with advancing age (the existence of estrogen and progesterone receptors within the polyp observed by molecular and cellular level research efforts denotes that the hyper estrogenic state is a triggering factor for this. high serum estrogen levels in an unopposed manner raises consequently the insulin-like growth factor 1 serum levels, and the number of its receptors within the endometrial lining that causes the growth of endometrial polyp [1,3,5,7].

A prior research team of investigators conducted a research study similar to the current research in approach and methodology have revealed and displayed that that the mean age and rates of hypertension are statistically significantly higher among cases having endometrial polyps with endometrial polyps in coexistence to fibroids those research findings show great similarity to the current study findings and could be justified by the fact that insulin like growth factor 1 and its receptors within the endometrial lining are elevated in cases of hypertension [2,4,9].

Another research study revealed an interesting observation that condom usage has a protective impact against growth of endometrial polyp. another group of investigators have observed that endometrial micro-polyps' presence is statically significantly linked to chronic endometritis pathological persistence. Furthermore,

previous molecular and cellular level research efforts have revealed that the cyclooxygenase-2 and matrix metalloproteinase-2 expression levels within immunohistochemical analyses of endometrial polyps. All prior research findings could denote that endometrial polyps have an inflammatory pathological etiological region that in conjunction to hyper estrogenic state augment the pathological rate of endometrial polyp growth [5,8,14].

Another study similar to the current research have observed that, endometrial polyps are more frequent in females with two or more fibroids and largest fibroid diameter less than 8 cm those research findings in an interesting manner show great similarity and harmony to the current research study findings it was observed that the that hyperplastic histopathological changes are more frequently observed in endometrial polyps [1,4,13].

Conclusions and recommendations for future research

The current research study reveals and display that the age, number of fibroids, diameter of the largest fibroid, are correlated factors for coexistence of endometrial polyps and uterine fibroids. However future research efforts are recommended to be conducted in a multicentric fashion to verify the current research study results taking in consideration the racial and ethnic differences that could affect the pathological presentation.

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