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ORIGINAL ARTICLE

Endometriosis: Locations and coexistence with other uterine conditions, single-center experience.

Shireen Hamid[1], Muhammad Mudassar[2], Saleha Tariq[3], Rubya Khanum[4], Nida Hamid[5], Sadia Hameed[6], Tariq Mehmood[7]

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ABSTRACT… Objective: To see the association of endometriosis with other uterine conditions in our setup. **Study Design:** Descriptive Retrospective study. **Setting:** Private Lab in Faisalabad. **Period:** January 2010 to December 2019. **Material & Methods:** A total of 297 cases were evaluated in this study. We have included all endometriosis cases with associated other conditions of the uterus. In this study paraffin blocks and previous slides along with clinical data were analyzed according to the standard protocols. All the data including age, location of endometriosis, and association with other uterine conditions were noted and reported as percentages. **Results:** In this study, we analyzed 297 endometriosis cases, received during ten years. The age group ranges from 15 years to 75 years. The most common age group ranges from 26-30 years, 87(29%) cases, and the least commonly affected group was 71-75 years, only one case. The most common site of endometriosis was in the ovaries, 169(57%) cases. The most common associated other condition was benign tumor leiomyoma, 65(43%) cases while only one case of endometrial carcinoma was noted. **Conclusion:** This study concludes that ovarian endometriosis is the most common location and there is a strong association with another co-existing benign tumor such as leiomyoma. This signifies the possibility of common risk factors such as hyperestrogenism. Thus it is important to be aware of the possibility of co-existence of other conditions so that they can be treated at once in a single surgery.

Key words: Adenomyosis, Endometriosis, Localization, Uterine Conditions.

INTRODUCTION

The incidence of endometriosis is 1% to 7%. It is more common in the reproductive age group, the incidence is 10 – 15 %. Endometriosis is the term for the presence of endometrial glands and stroma outside the uterus. It is the second most cause of hysterectomy in premenopausal women after uterine leiomyomas. It is a common disease that can cause pelvic inflammation, chronic pain, and infertility. It has a strong association with infertility.[1,2,4] The location of endometriosis can be in the cervix, vagina, vulva, fallopian tubes, appendix, bladder, pelvic peritoneum, lymph nodes, and surgical scars. The treatment of endometriosis is hormonal or surgical depending on circumstances. The predominant location of endometriosis is in the ovaries followed by soft tissues. There is an association of endometriosis with other benign and malignant tumors such as leiomyomas, endometrial polyp, ovarian cysts, and with carcinomas such as endometrioid and clear cell carcinomas.[1,2,3] Uterine fibroids are estimated to occur in 33-77% of women during their reproductive years and they are the most common reason for the hysterectomy. The symptoms commonly include abnormal uterine bleeding, pelvic pain, or infertility that may require medical or surgical intervention. The etiology of uterine leiomyoma is uncertain but is likely to involve genetic predisposition and hormonal imbalance.[5,6,7] The presence of co-existing other tumors signifies the possibility of common risk factors. The rationale of this study is to find out the most common co-existing condition so that physicians and surgeons should evaluate the young females of the reproductive age group

1. MBBS, FCPS, Assistant Professor Pathology, Independent Medical University Hospital, Faisalabad.
2. MBBS, FCPS, Associate Professor Pathology, Independent Medical University Hospital, Faisalabad.
3. MBBS Student, CMH, Lahore.
4. MBBS, MD (Microbiology), Assistant Professor Pathology, University Madina and Dental College, Faisalabad.
5. MBBS, FCPS, Assistant Professor Gynae and Obstetrics, Sirsyed College of Medical Sciences, Karachi.
6. MBBS, M.Phil, Professor Pathology, University Madina and Dental College, Faisalabad.
7. MBBS, M.Phil, FCPS, Professor Pathology, Independent Medical University Hospital, Faisalabad.

Correspondence Address:
Dr. Shireen Hamid
Department of Pathology
Independent Medical University Hospital, Faisalabad.
shirin.hamiddoc@gmail.com

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before surgery so that both conditions can be treated in a single surgical procedure.

MATERIAL & METHODS

This descriptive retrospective study was done in the department of pathology in a private lab, Faisalabad. A total of 297 cases were evaluated for the last 10 years from January 2010 to Dec 2019 study. It includes all endometriosis cases along with associated other uterine conditions of any age The patients with ovarian carcinomas were excluded from the study. Medical records of all patients were reviewed for demographic and clinical information. All endometriosis cases paraffin blocks were taken out from the record and slides were reviewed. Wherever needed further sections were taken. Sections were cut at 3 to 4 microns and stained with Haematoxylin and Eosin. Immunohistochemistry was not done. All the data including age, location of endometriosis, and association with other uterine conditions were noted and reported as percentages. This study was approved by the ethical committee.

RESULTS

In this study, we have evaluated 297 endometriosis cases, including cases with other uterine conditions. The most common age group affected was 26 to 30 years as shown in Table-I. The cases presented with only endometriosis were 70. The most common site of endometriosis was ovaries in 169 (57%) cases and the second most commonly affected site was C - section scar in 65(22%) cases. The cases presented with endometriosis in ovaries with fallopian tubes were 36(12%), while 14(5%) cases were only in the fallopian tubes. We observed 02 cases in the appendix, 02 cases in the cervix, and 3 cases of vaginal endometriosis. There were 02 cases each of ovarian endometriosis with abdomen and omentum, while one case each of endometriosis in bladder and intestine, shown in Table-II.

We have also analyzed endometriosis cases associated with other conditions of the uterus such as leiomyoma, adenomyosis, endometrial polyp, serous and mucinous cystadenomas, and endometrial carcinoma. The most common association was endometriosis with leiomyoma, 65 cases while the second most common combination was with adenomyosis, 38 cases. While only one case of endometrial carcinoma was noted, shown in Table-III.

Age Distribution	Total Number (n=297) (%)
15 to 20	14 (4.7%)
21 to 25	45 (15.1%)
26 to 30	87 (29.2%)
31 to 35	57 (19.1%)
36 to 40	48 (16.1%)
41 to 45	29 (9.7%)
46 to 50	15 (5%)
51 to 55	02 (0.6%)
56 to 60	02 (0.6%)
61 to 65	00 (0%)
66 to 70	00 (0%)
71 to 75	01 (0.3%)
Total	297 (100%)

Table-I. Age-wise distribution of endometriosis cases.

Location	Total Number (n=297) (%)
Ovaries	169 (56.9%)
Ovaries with fallopian tube	36 (12.1%)
C-Section scar	65 (21.8%)
Fallopian tube	14 (4.7%)
Ovaries and omentum	02 (0.6%)
Ovaries and C-section scar	02 (0.6%)
Appendix	02 (0.6%)
Cervix	02 (0.6%)
Vagina	03 (1%)
Intestine	01 (0.3%)
Bladder	01 (0.3%)

Table-II. Distribution of endometriosis cases according to its locations.

Other Uterine Conditions	No of Cases (n= 164) (%)
Leiomyoma	70 (42.6%)
Adenomyosis	58 (35.3%)
Serous cystadenoma	13 (7.9%)
Mucinous cystadenoma	02 (1.2%)
Endometrial polyp	17 (10.3%)
Dermoid cyst	01 (0.6%)
Teratoma	02 (1.2%)
Endometrial carcinoma	01 (0.6%)

Table-III. Number of endometriosis cases with other uterine conditions.

The average age group of patient with other combinations of diagnosis were also evaluated.

Age groups (years)	Leiomyoma	adenomyosis	Endometrial polyp	Serous and mucinous cystadenoma	Dermoid cyst/ Teratoma	E C	Total %
15-20	-----	------	------	----------	------	-----	00
21-25	00	01	00	00	02	00	1.8%
26-30	13	13	01	04	00	00	18.9%
31-35	06	11	06	01	00	00	14.6%
36-40	24	17	05	00	00	00	28%
41-45	15	10	06	03	00	00	20.7%
46-50	10	06	04	01	00	00	12.8%
51-55	01	00	00	00	00	00	0.6%
56-60	01	01	00	01	00	00	1.8%
61-65	-------	-----	-----	------	-------	-----	00
66-70	------	------	-----	------	------	------	00
71-75	------	------	------	------	-------	01	0.6%
Total							164

Table-IV. Age association with other combination of diagnosis

The youngest group of patients was 21 to 25 years presented with adenomyosis, dermoid cyst, and teratoma. The oldest group of patients was 71 to 75 years with associated endometrial carcinoma. Most of the cases with other associated conditions were in the 36 to 40 years age group, including leiomyoma, endometrial polyp, serous cystadenoma, adenomyosis, mucinous cystadenoma, and endometrial polyp.

DISCUSSION

In this study, the most common location of endometriosis was in ovaries, 169(57%) cases, followed by C- section scar, 65 (22%) cases, ovaries with fallopian tubes, 36 (12%) cases and fallopian tubes, 14(5%) cases. There were only 2 cases in the appendix, cervix, and omentum, while only one case was noticed in the intestine, bladder, and inguinal region. This is in concordance with the results published by (Lee HJ), in which the most common location was ovaries (96.4%), followed by soft tissues (2.8%), gastrointestinal tract (0.3 %), and urinary tract (0.2 %) cases.[2] In the study published by D. Serteva, the most common location was in the myometrium (adenomyosis) 157 (75.5%) cases and the second most common location was in ovaries, 50 (24%) cases, followed by fallopian tubes.[2,1] This might be because, in Bulgarian medicine, adenomyosis is also a type of endometriosis while we consider it as an associated benign condition.[3]

In our study, the most common associated benign condition was leiomyomas, 70(43%) cases while the second most common condition was adenomyosis, 58(35%) cases. Other associated benign diseases were endometrial polyps, serous cystadenoma, mucinous cystadenoma, dermoid cyst, and teratoma. These results are similar to the studies done by Dr. Serveta in which the most common combination was endometriosis with leiomyomas (134, 59.8 %).[3] In the study done by Nezhat C, 87.1% of patients with leiomyomas also had histologically proven endometriosis. They concluded that symptomatic leiomyomas may be a risk for the development of endometriosis.[8] Huang QJ et. al also reported 113 patients out of 131 with the combination of endometriosis and fibroids.[9] In the cross-sectional study conducted by R. Shahid in the department of Pathology at Dow Medical College in Karachi,157 hysterectomies in women of reproductive age were evaluated and the common pathologies were endometritis, endometrial polyp, leiomyoma, adenomyosis, and uterine prolapse.[10] In our study majority of the women with adenomyosis, endometrial polyps, leiomyomas, serous and mucinous cystadenomas were in the reproductive age group of 36- 40 years, (28%) cases. This differs in the studies done by Seza Tetikkurt, and Dr. Serveta in which the women with adenomyosis, endometrial polyp, and hyperplasia were mostly in the age group 41-45 years, and 48 - 58 years respectively.[11,3] Similar

results were seen in the study by Matalliotaki et al in which the co-existence of benign gynecological tumors with endometriosis was evaluated in a group of 1, 000 women.[12]

In the study done by Morassutto et al, the incidence and prevalence of endometriosis and adenomyosis were estimated. The most common age group was 46-50 years and they emphasized the study of endometriosis with adenomyosis in post-menopausal women.[13] The association of endometriosis with endometrial cancer is rare in our study as there is only one case of endometrial carcinoma grade I in the aged group 71-75 years. The average age of patients with endometriosis and endometrial carcinoma was 61 years[14], in the study by Dr. Serveta, which is similar to our results, also in the study done by Seza Tetikkurt the age of the patient was above 55 years.[3,14] S Johnatty et al evaluated the co-existence of leiomyomas, adenomyosis, and endometriosis in 1399 endometrial carcinoma patients and concluded these conditions as risk factors for endometrial carcinoma (EC).[15] Similar results were reported by R. Nomelini et al that adenomyosis is more frequently found than endometriosis in women with leiomyomas or cancer in premenopausal women.[16]

Endometriosis and endometrial cancer are both hormonally regulated diseases, having a common risk factor and similar treatment measures. Both are involved in an increased risk of uterine fibroids. The predominant symptom of endometrial cancer is pelvic pain, which is also one of the main symptoms of endometriosis. In a recent genetic study, it was identified that these two diseases have common genetic causes.[17,18] Dawson et al. also suggested that endometriosis and cancers of reproductive-aged women may share common biological mechanisms.[19] While Ingred J et al. concluded that premenopausal women with fibroids may have an increased risk of endometrial cancer but they find no association with endometriosis.[20] Our study also emphasizes the strong association between fibroids and endometriosis. This is in concordance with the study conducted by Uimari O et al., who also suggest that symptomatic endometriosis appears more commonly together with symptomatic uterine fibroids and these two diseases seem to decrease female fertility.[21,22]

CONCLUSION

This study signifies that endometriosis may be associated with an increased risk of other benign tumors such as leiomyomas. This raises the suspicion of a common etiologic agent between these conditions, which may be hyperestrogenism. Thus it is important to be aware of the possibility of co-existing associations so that they can be treated intraoperatively simultaneously. However, further investigations are needed to validate this observation.

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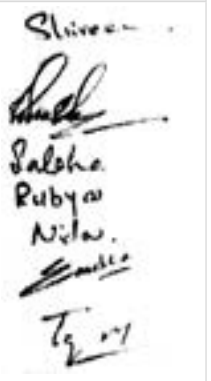
AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Shireen Hamid	Manuscript writing, Data collection, Methodology.	
2	M. Mudassar	Proof reading.	
3	Saleha Tariq	Histopatath review.	
4	Rubya Khanum	Data collection, Review.	
5	Nida Hamid	Sampling, Results.	
6	Sadia Hameed	Supervision, Data collection.	
7	Tariq Mehmood	Supervision, Data collection.	