

## Retrospective And Prospective Study Of Benign And Malignant Uterine Corpus Tumours

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**Abstract : Background and Objectives:** Uterine tumors may be localized at the corpus, isthmus and cervix. The fallopian tubes and uterine ligaments may also undergo tumor transformation. This study was undertaken to focus on uterine corpus tumors, including benign and malignant tumors. The most common uterine corpus benign tumor is leiomyoma, a proliferation of mesenchymal origin, can be seen at any time between menarche and menopause. Endometrial in on the cancer highest rank amongst genital tract malignancies in the western world but it occupies the lowest rank in the eastern hemisphere including India. **Aim :-** The study was undertaken to observe prevalence of benign and malignant tumour of uterine corpus according to age and classify according to WHO. **Methods:** This present retrospective study was conducted in one of the tertiary care hospital of Meerut city. This study was carried out on 539 cases of female genital tract tumor, out of which 211 cases of uterine tumour during a period of ten years. For the retrospective study all blocks and slides of uterine corpus tumor available were included where as for prospective study hysterectomy specimen of uterus with suspected tumor and biopsies of endometrial tumor were included. The chi square test is applied as test of significance. **Results:** In our study uterine corpus 194 (71.3%) was most common site for benign tumours in female genital tract, followed by ovary 71 (26.1%), cervix 5 (1.8%) and vagina 2 (0.7%).Where as cervix 193(72.2%) most common site for malignant tumours in female genital tract was followed by ovary 32 (11.9%), uterus 17(6.3%), vagina 16(5.9%), vulva 7(2.6%) and fallopian tubes 2 (0.7%).Most common benign tumor of uterine corpus was leiomyomas 194 cases. Whereas endometrial carcinoma 14(82.3%) most common malignant tumor of uterine corpus after that sarcoma 2(11.7%) and choriocarcinoma 1(5.85%).In age group of 31-40 years maximum cases of benign tumor of uterine corpus was observed whereas maximum cases of malignant tumor of uterine corpus was seen in age group of 51-60 years. **Conclusion:** The data can be used for estimation of load of the benign and malignant tumours of uterine corpus, establishment of management facilities, as well as for development of the objectives & strategy. [Arya A et al NJIRM 2013; 4(6) : 05-10]

**Key Words:** Benign, Endometrial, Malignant, Tumor, Uterine.

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**Introduction:** Uterine tumours may be localized at the corpus, isthmus and cervix. The fallopian tubes and uterine ligaments may also undergo tumour transformation. This study was undertaken to focus on uterine corpus tumours, including benign and malignant tumours. They may affect the endometrium, muscles or other supporting tissue. The uterine corpus represents the second most common site for malignancy of the female genital system. These neoplasms are divided into epithelial, mesenchymal, mixed epithelial and mesenchymal tumors and trophoblastic tumors<sup>1</sup>. However, as it is usually detected in early stages, it is not a common cause of cancer deaths. The most common corpus benign tumour is leiomyoma, a proliferation of mesenchymal origin, which can be seen at any time between menarche and menopause. Endometrial in on the cancer highest

rank amongst genital tract malignancies in the western world but it occupies the lowest rank in the eastern hemisphere including India<sup>2, 3</sup>. The aim and objective of our study was to observe prevalence of benign and malignant tumours of uterine corpus according to age and classify them according to WHO.

**Material & Methods:** This study was carried out on 539 cases of female genital tract tumor, out of which 211 cases of uterine tumour during the period of 1997 to 2006 (10 years) at Department of Pathology and Department of obstetrics and gynecology at LLRM Medical College, Meerut. This study was approved in a meeting of board of studies held on 10.8.2005. For the retrospective study we included all blocks and slides of uterine corpus tumor available in Pathology Department

where as for prospective study hysterectomy specimen of uterus with suspected tumor and biopsies of endometrial tumor were included. The prolapsed uterus and uterus with cervix with non specific finding like infection, premalignant condition and adenomyosis were excluded from the study. The clinical data of the patients was obtained from respective files. The excised specimen were fixed in 10% formalin .After gross examination, sections from suspected areas were taken for histopathological diagnosis of the tumor. After sectioning tissue was processed in an automated tissue processor for 16-18 hours of overnight schedule. After processing Paraffin blocks were made. Paraffin sections of 5mm were cut and stained with hematoxylin and eosin technique. Sections were studied microscopically and final diagnosis of the tumors was made on the basis of morphologic feature and the tumors were classified according to WHO. Special stain Mallory's Phosphotungstic acid haematoxylin was used when ever required for diagnosis.

**Statistical analysis:-**The data thus collected was computerized in specific programme developed on Microsoft excel 2007 soft ware. The data base so prepared was analyzed with the help of SPSS statistical software and the results were transferred to predesigned classified tables prepared according to the aims and objectives of the study. Valid inference was drawn from the information and the results were discussed with the available studies. Analysis of chi square test was applied as a test of significance. Level of significance was taken as 0.05.

**Result:** There were 15320 specimens received during the period of ten years in the department of Pathology, LLRM Medical College, Meerut; 539 were tumour of female genital tract while 211 cases were uterine corpus tumors. Out of 539 Female genital tumors, 272 (50.4%) were benign, 267 (49.5%) were malignant tumors. In our study most common site in benign tumors of female genital tract was uterine corpus 194 cases (71.3%), followed by ovary 71 cases (26.1%), cervix 5 cases (1.8%) and 2 cases (0.7%) were from vagina. Most common site in female genital tract cancer was

cervix 193(72.2%) cases, followed by ovary 32 (11.9%) cases, uterus 17(6.3%) cases, vagina 16(5.9%) cases, vulva 7(2.6%) cases and 2 (0.7%) cases from fallopian tubes. [Table 1. There were 272 cases of benign tumors of female genital tract. Histological distribution has shown that 194 cases of leiomyomas of uterine corpus out of which 190 (97.9%) cases of common leiomyoma, 2 (1.03%) cases of cellular leiomyoma, and 2 (1.03%) cases of leiomyoblastoma. A total of 17 cases of uterine corpus cancer were diagnosed, out of which 14(82.3%) cases were endometrial carcinoma, 2(11.7%) cases were sarcoma and 1(5.85) cases of choriocarcinoma. From 14 cases of endometrial carcinoma 12(85.7%) cases were endometrioid adenocarcinoma and 2(14.2%) cases were clear cell carcinoma. From 2 cases of sarcoma 1(50%) case of low-grade endometrial stromal sarcoma and 1(50%) case of leiomyosarcoma. [Table 2] Of the 194 cases benign tumors of uterine corpus, maximum number of cases (91) of was observed in the age group of 31-40 years, followed by (69) cases in the age of 41-50 years. In uterine corpus maximum number of cancer cases was 8(47.0%) observed in the age group of 51-60 years. Maximum age group for endometrioid adenocarcinoma was 51-60 years. Clear cell carcinoma occurs in the age group of 61-80 years. One case each of endometrial stromal tumour and leiomyosarcoma occur respectively in the age group of 41-50 and 51-60 years. Choriocarcinoma were found in the age group of 31-40 years. [Table 3]

**Table 1: Site distribution of benign and malignant tumour of female genital tract**

Site	Benign tumour	Malignant tumour
Uterine corpus	194	17
Cervix	5	193
Ovary	71	32
Vagina	2*	16
Vulva	0	7
Fallopian tube	0	2*
<b>Total</b>	<b>272</b>	<b>267</b>

\*Yate's correction

$$\chi^2 = 361.624$$

df = 5

P < 0.05 significant

**Table 2 : Histological distribution of Benign and Malignant tumors of uterine corpus**

Histological types	Benign Tumor		Malignant Tumor	
	Total Cases	%	Total Cases	%
1.Common leiomyomas	190	97.9%	-	-
2.Cellular leiomyomas	2	1.03%	-	-
3.Leiomyoblastoma (epithelioid-like leiomyoma)	2	1.03%	-	-
4.Mitotically active	-	-	-	-
5.Endometrial cancer	-	-	14	82.3%
Endometrioid adenocarcinoma	-	-	12	85.7%
Clear cell carcinoma	-	-	2	14.2%
6.Sarcoma	-	-	2	11.7%
Endometrial stromal sarcoma	-	-	1	50.0%
Leiomyosarcoma	-	-	1	50.0%
7.Trophoblastic cancer	-	-	1	5.8%
Choriocarcinoma	-	-	1	5.8%
<b>Total</b>	<b>194</b>		<b>17</b>	

**Table 3: Age wise distribution of benign and malignant tumors of uterine corpus**

Age	Benign	Malignant
Up to 20 yrs	0	0
21-30	24	1*
31-40	91	1*
41-50	69	4*
51-60	10	8

61-70	0	2*
71-80	0	1*
<b>Total</b>	<b>194</b>	<b>17</b>

\*Yate's correction

$$\chi^2 = 73.652$$

df = 5

P < 0.05 significant

Figure 1(a):-Low grade Endometrial Stromal tumor showing- Stromal cell proliferation around blood vessels.(b):-Low grade Endometrial Stromal tumor Uterus. Figure2(a):-Leiomyoma of the uterus showing whorled pattern . (b):-Leiomyoma of uterus showing hyaline change.Figure 3:- Clear cell carcinoma of the endometrium showing cell having clear cytoplasm and distinct cell wall. Figure 4:- Endometrioid adenocarcinoma uterus showing back to back gland arrangement and stromal disappearance. Figure 5:-Leiomyosarcoma of Uterus showing fascicles of spindle shaped cell with mitotic figure.

**Discussion:** In our study, total 539 cases of female genital tract tumors were studied. Out of which 50.4% cases were benign tumors and 49.5% cases were malignant tumors. Uterine corpus was most common site for tumours in female genital tract. Out of 539 cases, 211 cases of uterine corpus tumours were seen. In the study of Shi et al<sup>4</sup>, and Heinemann et al<sup>5</sup>, most common site of benign tumors of female genital tract was uterus after that ovary. Almost similar result was seen in our study, maximum numbers of benign tumors were seen in uterine corpus after that ovary, cervix and vagina. Paymaster et al, (1964)<sup>6</sup> observed the distribution of carcinoma of female Genital tract in India at Tata Memorial Hospital Bombay. Cervix was found to be affected in 88% of patient with carcinoma of female genital tract and the body of uterus in 6% of patient; the ovarian, vagina and vulva were the seats of cancer in the remaining 6% of the group. Various author observed that cervical cancer was the commonest, of gynaecological cancer, ovarian cancer, endometrial cancer, choriocarcinoma and vulval carcinoma followed in that order<sup>7,8,9</sup>. Similarly in our study most common site of female genital malignant tumors were cervix, next frequent site

Fig 1:

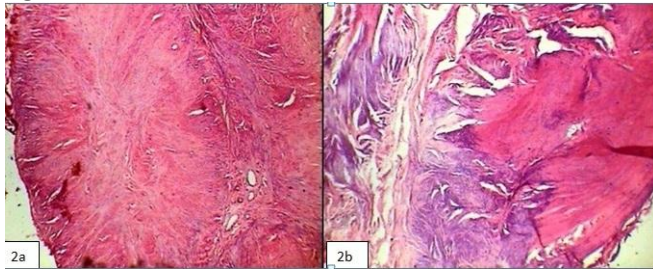


Fig 2

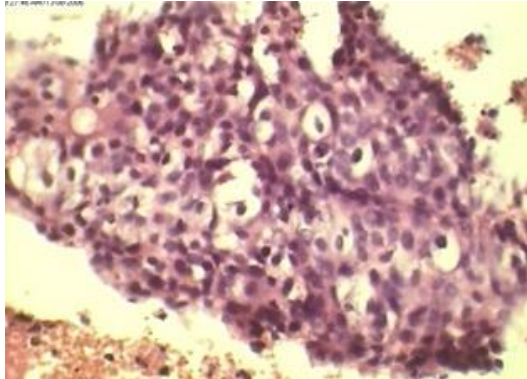


Fig 3

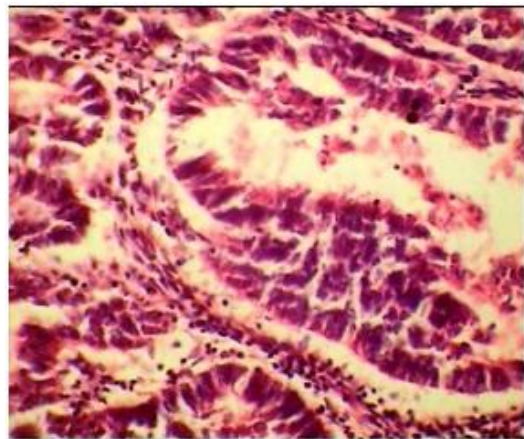
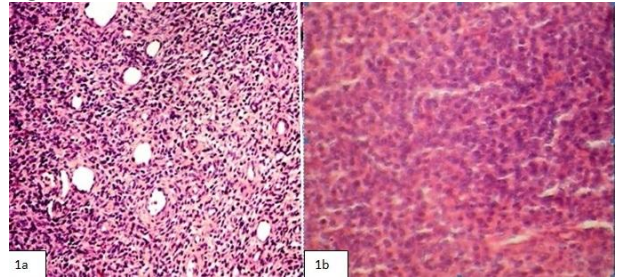


Fig 4



Fig 5



was ovary followed by uterine corpus, vagina, vulva and fallopian tubes. Whereas study by Nwosu et al<sup>10</sup>, and Schraub et al<sup>11</sup>, show uterine cancer second common site after cervical cancer. Leiomyoma was most common benign tumour of uterus corpus<sup>12, 13, 14</sup>. As far as concerned with our study most common benign tumour of uterine corpus were leiomyoma (194 cases). Study of Rammeh-Rommani et al<sup>14</sup> as well as in our study most patient of leiomyoma was in the age group of 31- 40 years of age. Rammeh- Rommani et al<sup>14</sup> found 2709(98.1%) case of common leiomyoma and 18 cases of cellular leiomyoma. Similar in our study out of 194 cases of leiomyoma, 190(97.9%) cases were common leiomyoma, 2(1.03%) cases were cellular leiomyoma and 2(1.03%) cases were epitheloid like leiomyoma. whereas Shi et al<sup>4</sup> reported 30(71.4%) cases of usual leiomyoma and 5(11.9%) cases of cellular leiomyoma. Tan et al<sup>15</sup>, studied uterine cancer pattern in Singapore. They observed that out of 165 cases endometrioid adenocarcinoma was the commonest type of uterine cancer (75.2%), followed by uterine sarcoma (11.5%), (3.0%) had clear cell carcinoma. In our study total 14 (82.3%) cases of uterine cancer were seen in our study, out of which endometrioid adenocarcinoma comprised of 12(85.7%), uterine sarcoms constituted 11.7% and clear cell carcinoma 2 (14.2%). The median age of presentation of uterine cancer was 54.1 years<sup>15</sup>. Similarly Chhabra et al<sup>8</sup> reported most cases in age range of 35-49 years. In our study maximum number of cases of malignant tumors was seen in the age range of 51-60 years. Commonest malignant tumor of uterus corpus in this series were of endometrioid adenocarcinoma. This finding is similar to finding by other studies<sup>16, 17, 18, 19</sup>. Various studies observed that women

diagnosed with endometrial cancer are postmenopausal and the mean age at diagnosis is about 60 years<sup>7, 10, 17, 20</sup>. Similar in our study endometrial carcinoma occurs in age range of 51-60 years. Whereas in other studies observed higher age incidence in 7 decade<sup>2, 21</sup>. Study conducted by Punnonen et al<sup>22</sup>, and Liao et al<sup>23</sup>, reported higher percentage of leiomyosarcoma and lower percentage of endometrial stromal sarcoma comprised of 79% ,14% and 63.2% ,21.7% . In comparison to this our studies sarcoma constituted 11.7% of all malignant tumor of uterine corpus, out of which equal frequency of low-grade endometrial stromal sarcoma 1(50%) and leiomyosarcoma 1(50%) was found. In our study Leiomyosarcoma occur in age range of 51-60 years, similar age range seen by other study<sup>14</sup>. Chang et al<sup>24</sup>, and Defusco et al<sup>25</sup>, reported that low grade endometrial stromal tumour occur in the age range of 42-58 years. Almost similar age group was seen in our study. Whereas Choriocarcinoma found in the age range of 31-40 years in our study similar observation by Nwosu et al<sup>10</sup>, but You et al<sup>26</sup>, and Rose et al<sup>27</sup>, observed in age group less than 25 years.

**Conclusion:** Endometrial evaluation is a must in patients with menorrhagia at all levels of health care. The vast majority of uterine corpus tumours are highly curable since they present early symptoms and may often be diagnosed precociously. Treatment for benign uterine corpus tumour depends on the symptoms, tumour size and location and age of the patient. Knowledge of the surgico pathological findings is crucial in early diagnosis and treatment to improve the survival and to decrease the mortality. The data has been used for estimation of load of the uterine corpus tumour in female, establishment of management facilities, as well as for development of the objectives & strategy.

#### References:

1. Tavassoli FA, Devilee P. World Health Organization of tumours. Pathology and genetics of tumours of the breast and Female genital organs. IARC Press: Lyon. 2002.
2. Mahboubi E, Eyer N, Wynder EL. Epidemiology of cancer of the endometrium. Clin Obstet Gynecol 1982; 25: 5-18.
3. National cancer registry. Annual report 1989. ICMR 1991; 20-33.
4. Shi YF, Xie X, Zhao CL. Histological diagnosis and clinical features in borderline smooth muscle tumors of the uterus. Zhonghua Fu Chan Ke Za Zhi 1994; 29(4):201-4,251.
5. Heinemann K, Thiel C, Mohner S, Lewis MA, Raff T, Kuhl- Habich D, et al. German Cohort Study on Women's Health Benign gynecological tumors: estimated incidence. Results of the German Cohort Study on Women's Health. Eur J Obstet Gynecol Reprod Biol 2003; 107(7):78-80.
6. Paymaster J.C. Cancer and its distribution in India. Cancer 1964; 17:1026 – 34.
7. Nkyekyer K. Pattern of gynaecological cancer in Ghana. East Afr Med J 2000; 77 (10): 534-8.
8. Chhabra S, Sonak M, Prem V, Sharma S. Gynaecological malignancies in India. J Obstet Gynaecol 2002; 22(4): 426-9.
9. Kyari O, Nqqada H, Mairiqa A. Malignant tumors of female Genital tract in North Eastern Nigeria. East Afr Med J 2004; 81(3): 142-5.
10. Nwosu S O, Anya S.E. Malignancies of the Female genital tract: a ten years review 1990-1999. Niger Postgrad J 2004; 11 (2): 107 – 9.
11. Schraub S, Alauzet E, Schaffer P, Robillard J, Menegoz F. Descriptive Epidemiology of gynecologic and breast cancers. Rev Fr Gynecol Obstet 1992; 87(12): 577-85.
12. Aboyeji A P, Ijaiya MA. Uterine fibroids: a ten-year clinical review in Ilorin, Nigeria. Niger J Med 2002; 11 (11): 16-9.
13. Akinyemi B.O, Adewoye B.R, Fakoya T.A. Uterine fibroid. A review. Niger J Med 2004; 13 (4):318 – 29.
14. Rammeh-Rommani S, Mokni M, Stita W, Trabelsi A, Hamissa S, Sriha B, et al. Uterine smooth muscle tumors: retrospective epidemiological and pathological study of 2760 cases. J Gynecol Obstet Biol Reprod (Paris) 2005; 34(6):568-71.

15. Tan YY, Ho TH. Uterine cancer--KK Hospital experience. Singapore Med J 1996; 37(6):600-3.
16. Parazzini F, La Vecchia C, Bocciolone L, Franceschi S. The epidemiology of endometrial cancer. Gynecol Oncol 1991; 41(1):1-16.
17. Abeler V.M, Kjorstad K.E. Endometrial adenocarcinoma in Norway. A study of a total population. Cancer 1991; 67(12): 3093-103.
18. Platz V.E, Benda J.A: Female genital tract cancer: Cancer 1995; 75: 270 – 294.
19. Greven KM, Com BW. Endometrial cancer. Curr Probl Cancer 1997; 21(2): 65-127.
20. Cavanagh D, Marsden D.E, Ruffolo E.H. Carcinoma of endometrial. Obstet Gynecol Anul 1984; 13:211-60.
21. Amant F, Moerman P, Neven P, Timmerman D, Van Limbergen E, Vergote I. Endometrial cancer. Lancet 2005; 366(9484):491-505.
22. Punnonen R, Lauslahti K, Pystynen P, Kauppila O. Uterine sarcoma. Ann Chir Gynaecol Suppl 1985; 197:11-4.
23. Liao Q, Wang J, Han J. Clinical and pathological analysis on 106 cases with uterine sarcoma. Zhonghua Fu Chan Ke Za Zhi 2001; 36(2):104-7.
24. Chang KL, Crabtree GS, Lim –Tan SK, Kempson RL, Hendrickson MR. Primary uterine endometrial stromal neoplasm. A clinicopathological study of 117 cases. Am J Surg Pathol 1990; 14(5):415-38.
25. De Fusco PA, Gaffey TA, Malkasian GD Jr, Long HJ, Cha SS. Endometrial stromal sarcoma: review of Mayo Clinic experience, 1945-1980. Gynecol Oncol 1989; 35(1):8-14.
26. You W, Dainty LA, Rose GS, Krivak T, Metlale MT, Oslen CH, et al. Gynecologic malignancies in women aged less than 25 years. Obstet Gynecol 2005; 105(6): 1405-9.
27. Rose G.S, You W, Oslen C. H. Gynecologic malignancies in women aged less than 25 years. Obstet Gynecol 2005; 105 (6): 1405- 9.

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