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Incidence of Uterine Sarcoma in Women Operated for Presumed Benign Pelvic Tumours

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Abstract
Uterine sarcomas are rare malignant tumors arising from the smooth muscles of the wall of uterus It is a type of soft tissue sarcoma .sarcomas in general are malignant tumors that arise from the connective tissue that supports and surrounds various organs in body. Uterine leiomyosarcomas present usually as AUB or pain abdomen or pelvic mass. other symptoms may vary according to size and location of tumor like pressure symptoms, bladder bowel symptoms .there are no definite diagnostic tests for pre-operative diagnosis of uterine sarcomas and majority are diagnosed on histopathological examination postoperatively. thus clinicians should be aware of the possibility of uterine sarcoma in any woman presenting with pelvic mass especially leiomyoma.

Introduction

Uterine sarcomas are rare malignant tumors arising from the smooth muscles of the wall of uterus It is a type of soft tissue sarcoma .sarcomas in general are malignant tumors that arise from the connective tissue that supports and surrounds various organs in body. Uterine leiomyosarcomas present usually as AUB or pain abdomen or pelvic mass. other symptoms may vary according to size and location of tumor like pressure symptoms, bladder bowel symptoms .there are no definite diagnostic tests for pre-operative diagnosis of uterine sarcomas and majority are diagnosed on histopathological examination postoperatively. thus clinicians should be aware of the possibility of uterine sarcoma in any woman presenting with pelvic mass especially leiomyoma.

Objective

Aim of study was to determine incidence of uterine sarcoma in patients operated on for benign pelvic tumour presenting with pain abdomen and /or AUB.

Material and methods

Study was conducted at Chandulal Chandrakar Memorial medical college, Durg, a tertiary referral medical college hospital of Chhattisgarh ,Between October 2014 –December 2016 –it is a retrospective study through review of medical records .all patients who had undergone either myomectomy or hysterectomy for presumed benign tumour were selected. 515-patients had undergone hysterectomy/myomectomy for abnormal uterine bleeding or pelvic mass or abdominal pain associated with presence of

uterine mass .pre-op diagnostic evaluation and intraoperative records studied and histopathological exam evaluated for all patients . Postoperative histopathological reports were reviewed and correlated.

Incidence of uterine sarcoma in these group of patients was studied

Observations

Out of 515 patients operated with diagnosis of a presumed benign uterine tumour 6 patients were found to have uterine sarcoma after histopathological examination .out of these 6 patients 4 patients had leiomyosarcoma and one had endometrial stromal sarcoma and one had mixed misodermal tumour

None of these patients had any indication of malignancy in pre-operative evaluation. intraoperative suspicion was here in 2 patients .

Out of 4 patients who were diagnosed as leiomyosarcoma one presented with a huge cervical mass diagnosed as leiomyoma with major complaint of pain abdomen ,one had multiple fibroids with AUB, one was diagnosed preoperatively as Tubo-ovarian mass and one with a prolapsed uterus with a cervical fibroid. 5 had undergone abdominal hysterectomy and one had undergone myomectomy ultrasound evaluation and D and C was done preoperatively in all patients before hysterectomy

Out of 515 patients 25 patients had undergone myomectomy for either pelvic mass with pain or pressure symptoms and AUB or infertility and 490 patients had undergone hysterectomy by either vaginal, abdominal or laparoscopic route.

Age group of our patients ranged from 23-70 years .youngest patient being 23 yr old unmarried girl with a large cervical fibroid who had undergone myomctomy .initially .but when the diagnosis was made she had a radical hysterectomy done

Table 1- Distribution of patients according to age

Age range	total patients		patient diagnosed with sarcoma	
	Myomectomy	hysterectomy	Myomectomy	hysterectomy
<30 yrs	7	0	1	0
>30-40 yrs	16	35		2
>40-50 yrs	2	270		3
>50-60 yrs	0	175		0
>60 yrs	0	10		0
Total	**25**	**490**	1	5

Size of the uterus ranged from bulky to 28 week size .1/5th of the patients in our study had uterine size > 16 weeks

Table 2

Distribution of patients according to size of uterus

Size range	total patients		patient diagnosed with sarcoma	
	Myomectomy	hysterectomy	Myomectomy	hysterectomy
<12 weeks	0	180	0	
12-16 weeks	4	210		2
16-20 weeks	18	90	1	2
>20 weeks	3	10		1

Uterine weight ranged from 100 gm to 5 kg .1/5th of the patients had a uterine weight > 1 kg .

Distribution according to uterine weight

Weight range	total no.	Patients with sarcoma
<500 gm	160	0
500-1000gm	341	4
1000-2000 gm	12	2
2000gm -5000gm	2	

Details of 6 patients in our study

1.	AS	23 yrs	P0	cervical fibroid	endometrial stromal sarcoma
2.	BR	41 yrs	P3	AUB with multiple fibroids	liomyosarcoma
3.	SJ	50 yrs	P4	?TO mass?BL fibroid	Leiomyosarcoma
4.	RF	40 yrs	P3	pelvic mass ? uterine	mixed mullerian tumor
5.	SM	38yrs	P5	large cervical fibroid	leiomyosarcoma
6.	Ns	45 yrs	P4	cervical fibroid	Liposarcoma

Discussion

Uterine leiomyosarcoma account for 1-2 % of all malignant tumors of uterus (ref 1)

Uterine sarcomas are malignant tumors that spread locally as well as through hematogenous route to various distant locations like lung, liver ,brain etc

Etiology of uterine sarcomas is unknown .it was believed that they may be arising from malignant transformation of uterine myomas, but some researchers believe that malignant transformation from fibroids is not proven and sarcoma of uterus arise de novo.

Fibroids or myomas are common benign tumors of uterus affecting women of all ages usually in her reproductive years.

Uterine leiomyosarcoma are extremely rare form of cancer. estimated to occur in 6 out of 1 lakh women in USA .average age of presentation 51 yrs (ref 1)

According to a study published in gynaec oncology in 2004 by Brooke SE and colleagues, uterine sarcomas are rare;3-7/100000 US population and has a poor prognosis (ref 2)

According to a study by leibsohn S and colleagues published in American journal of obstet gynecol 1990 (ref 3) incidence of leiomyosarcoma in uterine leiomyomas is estimated to be between 0.13 -0.29% .

In another study by Parker WH et al incidence of uterine sarcoma among patients operated on for uterine leiomyoma is extremely low (.23%) ref 4

In study conducted by Leibsohn S .published in American jornal of obstet gynecol in 1990 they studied 1432 women in women's hospital between 1983-1988(5yr period)they found that After the hysterectomy in the 1429 patients with presumed benign disease, histologic diagnosis of leiomyosarcoma was made in seven (0.49%)

In our study we studied 515 patients who underwent hysterectomy for benign disease and 6 of them had uterine sarcoma diagnosed postoperatively.

AS in our study there was no evidence of malignancy in endometrial sampling of any of these patients in Leibsohn's study also and diagnosis was suspected intraoperatively in only 3 patients .in our study intra –op suspicion was there in 2 patients.

Age of the patients in our study ranged from 23-70 yrs.

The youngest patient diagnosed as endometrial stromal sarcoma was 23 yr old girl with a large cervico-vaginal mass .she was referred to us for myomectomy was taken up for lap myomectomy but on giving incision of myoma very soft friable masss was found.a a large mass filling the whole vaginal cavity coming right upto introitus was found (as patient was unmarried vaginal exam was done in OT under anaesthesia with consent) laparoscopy was abandoned in favour of open myomectomy .th mass was coming from fundus and was protruding through cervix into vagina, filling the vagina completely and reaching upto the introitus ..

In leibsohn's study pre-operative uterine size ranged from 8-20 weeks and uterine weight from 120-1100 gms

In our study uterine sizes ranged from 8 weeks-28 weeks size And weight from 100 gm to 6 kg.

In leibsohn's study among women in 40-60 yr age group ! % patients (8/817) with benign leiomyoma producing symtoms that necessitated hysterec-tomy had sarcoma diagnosed post operatively

In another study by parker WH and colleagues 1332 women were studied between 1988-1992 who had undergone hysterectomy or myomectomy for uterine leiomyomas. They studied incidence of leiomyosarcoma ,endometrial stromal sarcoma and mixed mullerian tumour. they studie symptoms of 1332 patients ,operative findings and histopathological findings of these women.

Their study included 371 women (28%) operated for rapidly growing leiomyomas .all patients operated during this interval and found to have a uterine sarcoma were reviewd .they found 1/1332 patient operated for presumed leiomyoma found to have leiomyosarcoma .in this study 1/371 women operated for rapidly growing uterus was found to have sarcoma.none of the patients who met a published definition of rapid growth had uterine sarcoma 2 has ESS but no MMT.

During the same interval 9 patients were found to have uterine sarcoma and for these women pre-op diagnosis was sarcoma in 4, endometrial cancer in 3 ,ovarian cancer in 1 and prolapsed uterus in 1.they concluded that total incidence of uterine sarcoma among patients operated for uterine leiomyoma was extremely low (.23%)

Incidence of sarcoma among patients having surgery for rapid growth of uterus was .27% and those who met published criteria for rapid growth

was 0% and it does not substantiate increased risk of sarcoma in this group of women.

In our study out of 515 patients 455 patients had surgery for leomyoma .presumed to be benign .all women had pre-op evaluation with D&C ,usg ,none had shown malignancy .intra-op suspicion was there in 2 patients .hence incidence of sarcoma in patients operated for fibroids in our study was 6/455 (1.3 %) reason of this high incidence is unclear it may be because most of our patients had large tumours --20% patients in our study had large mass >16 weeks .and most of our patients were 40 +age group

Our results are similar to Durand Reville M and colleagues. in their study of 660 cases of hysterectomythey found 414 cases of leiomyoma and 6 cases of leiomyosarcoma with an incidence of (1.4%)they concluded that Physicians should be aware of possible misdiagnosis of a leiomyosarcoma when proposing medical treatment of uterine fibroma

A population-based study for all uterine sarcomas from 2006 to 2013 from a health care system included 34,728 hysterectomies and reported a rate of occult uterine sarcoma of 1 in 278 (ref 5). In this study, risk was strongly related to age, with adjusted relative risk of 2.5 for women ages 50 to 59 and 12.8 for women ≥60 years compared with women 50 years and younger. However, because of the larger number of hysterectomies performed in younger women, 48 percent of occult sarcomas were diagnosed in the youngest age strata.

A study of 4791 women in Norway undergoing surgery for presumed benign leiomyomas included 26 women who were diagnosed with leiomyosarcoma, but only six (0.1 percent) of these had no preoperative findings suspicious for malignancy; among the other women, six were diagnosed with leiomyosarcoma on endometrial biopsy prior to surgery and 14 had findings suspicious for malignancy and thus underwent open hysterectomy (ref 6). The mean age of women with leiomyosarcoma (including a total of 26 women, some of whom had preoperative findings suspicious for malignancy) was 61 years and the majority were postmenopausal (70.4 percent).

In our study all patients diagnosed with sarcoma were <50 yrs thus indicating that postmenopausal status is not a prerequisite for diagnosis of sarcoma even patients as young as 23 and 35 yrs in our data have been diagnosed with uterine sarcoma.

Another large study evaluated the finding of unexpected gynecologic malignancy in a population-based database that included 6360 women undergoing hysterectomy for benign indications, a broader population than those undergoing morcellation (ref 7). The incidence of uterine sarcoma in this study was 0.2 percent .in this study, there was no difference in mean age of women with an unexpected diagnosis of sarcoma compared with those with benign pathology (46.9 versus 47.0 years), although this was based on a total of 14 patients

A large single center study included 10,119 women who underwent hysterectomy for benign indications. Nine patients were found to have uterine sarcoma (1 in 1124) [ref 8). The indication for hysterectomy in all women with occult sarcoma was abnormal uterine bleeding or pelvic mass.similar to our patient population

Conclusion

in modern era with lot of conservative treatment options available such as GnRh, endometrial ablation, myomectomyinstead of hysterectomy and uterine artery embolisation, diagnosis and definitive treatment of sarcoma in such pateints might be delayed .hence clinicians should counsel the women appropriately while offering conservative treatment options about the chances of sarcoma in a uterine mass with AUB and or pain and have to remain vigilant about the diagnosis of sarcoma in women operated for benign uterine mass.

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