
A Retrospective Study of 20 Cases of Uterine Sarcoma in A Single Institute Over 10 Year Period

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ABSTRACT

Objective: Uterine sarcomas are rare tumors arising from mesenchyme of uterus and they are diagnosed late because of confusing clinical and radiological presentation as uterine fibroids. In post hysterectomy patients uterine sarcomas can present as pelvic or abdominal tumors causing confusion with tumors of bladder, bowel or other abdominal/pelvic malignancies. Histopathological examination and immuno histochemistry aids in diagnosis of uterine sarcoma and proper management of patients. Hence 20 cases are studied in detail for better understanding of this rare entity.

Methods: A retrospective study of 20 cases of uterine sarcoma was done. Details of patient are collected from departments of surgical oncology, medical oncology, pathology, radiology and outpatient records.

Results: Uterine sarcomas are rare tumors and are usually diagnosed late. Most common types of uterine sarcoma are endometrial stromal sarcoma, leiomyosarcoma, undifferentiated uterine sarcoma and adenosarcoma. Abnormal uterine bleeding is the most common complaint and there are no specific complaints or radiological findings. Endometrial stromal sarcomas are known for their indolent course, in our study 6 patients had hysterectomy in the past and years later presented as pelvic or abdominal masses causing diagnostic dilemma. Histopathology and immunohistochemistry aids in diagnosis and timely management of uterine sarcomas.

Conclusion: In 20 cases of uterine sarcoma, patients presented with complaints of abnormal uterine bleeding, pain abdomen, mass per abdomen, hematuria and constipation, radiological findings revealed either fibroid uterus or degenerated fibroid or ovarian cyst or bladder tumor or bowel tumor or retroperitoneal tumor in none of the cases uterine sarcoma was in list of differential diagnosis. Diagnosis was made only after histopathological examination and immuno histochemistry. Cases of Uterine sarcomas diagnosed at early stage through proper suspicion for this rare tumor and confirmation with histopathology and immunohistochemistry have better survival and quality of life compared to cases which are mis managed. Hence study was done.

KEYWORDS: Uterine sarcoma, leiomyosarcoma, endometrial stromal sarcoma, uterine fibroids, immunohistochemistry.

INTRODUCTION

Uterine sarcomas are rare genital malignancies accounting for 1% of all genital malignancies and 3 to 7% of all uterine malignancies. They arise from smooth muscles and connective tissue elements of the uterus. (1) Most common types of Uterine Sarcoma are, Leiomyosarcoma, Low grade endometrial stromal sarcoma, High grade endometrial stromal sarcoma, Undifferentiated uterine sarcoma, Adenosarcoma with sarcomatous overgrowth. (2)(12)

Clinically, radiologically and intraoperatively uterine sarcomas mimic, hence managed as benign leiomyomas. Uterine sarcoma cases mistakenly managed as benign leiomyomas presented later with advanced stage and poor prognosis.

As they are more aggressive and have poor prognosis compared with leiomyomas all post operative cases of uterine tumours have to be followed till histopathology confirms diagnosis. Histopathological examination of excised specimen is the only way to exclude uterine sarcoma (4) Uterine sarcomas have unique histopathology and need post operative adjuvant therapy and follow up at regular intervals unlike benign leiomyomas. (4)

Prognosis depends on histopathological subtype and stage of disease (3)(12)

For better understanding of uterine sarcomas and not to forget this rare tumors present study has been undertaken.

MATERIALS AND METHODS

This study has been conducted in the Nizams Institute of Medical Sciences, Punjagutta, Hyderabad, Telangana, India. This is a retrospective study, of 20 cases of uterine sarcoma which has been done over a period of 10 years from January 2012 to December

A Retrospective Study of 20 Cases of Uterine Sarcoma in A Single Institute Over 10 Year Period

2021, after ethical clearance from the ethical committee of the institute (Review letter No.EC /NIMS/3054/2022, 63rd ESGS No.1388/2022) Details of the patient collected from the medical oncology, surgical oncology, pathology and radiation oncology departments and from last point of contact in out patient departments.

RESULTS

uterine sarcomas encompass a broad spectrum of neoplasms from pure mesenchymal tumors and endometrial stromal tumors to mixed epithelial /stromal tumors .several classification system exist in our study we followed classification system of WHO 2009 identifying specific type of uterine sarcoma is important as pathogenesis, disease progression, recurrence, adjuvant treatment varies.

of 20 cases studied in our study, histopathological and immunohistochemical results revealed 8 cases are of low grade endometrial stroma sarcoma, 5 cases are of leiomyosarcoma, 4 cases are of high grade endometrial sarcoma and 3 cases are of undifferentiated uterine sarcoma.(Table 2)

TABLE 1. (histopathology of 20 cases in the study)

S.NO	Histological type of uterine sarcoma	number of cases
1	Low grade endometrial stroma sarcoma	8
2	Leiomyosarcoma	5
3	High grade endometrial sarcoma	4
4	Undifferentiated uterine sarcoma	3

Regarding symptoms there are no specific signs or symptoms with which uterine sarcoma pateints present .However vaginal bleeding is the most common complaint.(2)(4)(12) In our study 7 pateints presented with abnormal vaginal bleeding , 6 pateints attended o.p.d with complaints of distension and chronic pain abdomen ,2 pateints presented with main complaint of hematuria, 2 pateints presented with abdominal wall palpable nodule increasing in size 1 pateint presented with acute intestinal obstruction ,one patient with long bone fracture secondary to bone metastasis and one patient presented with acute pain abdomen. Hence there are no specific signs or symptoms and depends on individual case scenarios, however vaginal bleeding is the most common symptom.(4)

In our study 7 pateints had a history of hysterectomy in the past due to various reasons and years later presented with growth in abdomen .As these cases are post hysterectomy uterine tumors were not in differential diagnosis ,surgical excision and histopathology examination of tumor revealed endometrial stromal sarcoma in 6 pateints and leiomyosarcoma in one patient[Table 3]. Endometrial stromal sarcomas a type of uterine sarcomas are known for their indolent course presenting years later after hysterectomy(5)

TABLE 2. (Number of cases with hysterectomy in the past and histopathology type of the uterine sarcoma diagnosed

Number of cases with history of hysterectomy in the past(7)	Histopathology of the pelvic mass/abdominal mass diagnosed as uterine sarcoma
4(57%)	low grade endometrial stromal sarcoma
2(28%)	High grade endometrial stroma sarcoma
1(14%)	Leiomyosarcoma

A Retrospective Study of 20 Cases of Uterine Sarcoma in A Single Institute Over 10 Year Period

Radiology reporting of these 20 cases was studied and impression was given either as huge ovarian cyst or bulky uterus with multiple fibroids or cystic degeneration in a fibroid uterus where uterus is intact and in post hysterectomy cases presenting later with recurrence impression given was tumour arising from or infiltrating bowel/bladder wall, mass in the pelvis arising from vault or retroperitoneal mass highlighting again uterine sarcomas have no specific radiology features.(4)

Staging system followed for uterine sarcoma is different from that of endometrial carcinomas ,stage of the disease depends on extra genital metastasis and size of metastatic lesion in our study of 20 cases 3 were in stage 1, 4 were in stage 2, 8 were in stage 3, 5 were in stage 4

Primary cytoreductive surgery is the main modality of treatment for uterine sarcomas and adjuvant therapy depends on type of uterine sarcoma (5)

In our study cytoreductive surgery was the main modality of treatment in 16 patients, 3 patients were offered primary chemotherapy as disseminated disease was there and 1 patient with skeletal metastasis radiation therapy was advised

Immunohistochemical staining plays a major role in the diagnosis of different types of uterine sarcoma and also in finding tissue of origin when uterine sarcoma present as bladder or bowel tumors or pelvic mass or abdominal wall tumor or skeletal metastasis

Prognosis of uterine sarcoma depends on histological subtype and disease stage.(3)(12)Immunohistochemistry aids in characterizing subtype of uterine sarcomas.When it is used diagnostically in uterine sarcomas a broad panel of markers provides better information than reliance on a single antibody.(8)

IHC markers used in our study are CD10, Vimentin,ER,Ki 67,SMA, Cyclin D1,P53, pan CK, inhibin INI 1, Desmin, H-caldesmon ,CD 117,WT1,Bcl2, CD34,CD99,STAT 6,DOG1,S100

Low grade endometrial sarcomas and IHC results :positive for CD10 and Vimentin.Focal positive for BCL2, ER ki67 1% - 3% ,negative for estrogen receptor,CD34,CD99,STAT6,CD117,DOG,SMA ,S100 ,desmin,pan cytokeratin ,PLAD EMA, HMB45,Inhibin,calretinin,H-caldesmon and SMA, ER ,PR,CD10, was positive in few and negative in few ,Few nuclei (15%)showed positive for cyclin D1 (5)

High grade endometrial stromal sarcoma :Positive for cyclin D1, CD 10,Vimentin 3+ KI 67 – 52%in mesenchymal component and low in glandular component,Negative for SMA, S100,Pan ck ,ER negative in mesenchymal component positive in glandular component

Leiomyosarcoma showed positive for SMA,Desmin,H-caldesmon Ki 67 -30%,40%

Undifferentiated uterine sarcoma showed positive for Cyclin D1, CD10, KI67- 64%, Pan 53,pan CK ,vimentin negative for SMA,ER, Inhibin ,IN1 retained.

Liposomal doxorubicin ,ifosfamide Adriamycin are chemotherapy drugs used in our institute

In cases where the estrogen receptor and progesterone receptor are positive are followed with salpingo oophorectomy if not done earlier, and these patients are covered with hormonal therapy either with anastrozole letrozole or medroxyprogesterone adjuvant therapy

Radiation therapy around 40Gy is used as Adjuvant in required cases

Survival of these patients cannot be commented as many patients are lost to follow up which is the limitation of the study.

DISCUSSION

uterine sarcomas encompass a broad spectrum of neoplasms from pure mesenchymal tumors and endometrial stromal tumors to mixed epithelial /stromal tumors.common are Leiomyosarcoma,Low grade endometrial stromal sarcoma ,High grade endometrial stromal sarcoma, Undifferentiated uterine sarcoma,Adenosarcoma with sarcomatous overgrowth.

A detailed study of 20 cases of the uterine sarcoma has been made and it was observed that Uterine sarcomas behave differently. clinical presentation and radiological features are not specific for uterine sarcomas ,hence they are difficult to diagnose preoperatively(4)

Unlike ovarian cancer, there are no valid tumor markers or blood tests to arouse suspicion.

Tumor stage is the single most important prognostic factor. In the past, uterine sarcomas were staged using a staging system proposed in 1988 for endometrial carcinoma. This has not proven satisfactory and, in 2009, a new FIGO staging system was developed for uterine sarcomas (Table 1) The new staging system has two divisions, one for leiomyosarcoma and endometrial stromal sarcoma (ESS), and one for adenosarcoma. Carcinosarcoma is now staged using the endometrial carcinoma staging system.(1)(12) TABLE 3

Table 3. FIGO staging for uterine sarcomas

Stage	Definition
Leiomyosarcomas and endometrial stromal sarcomas	
I	Tumor limited to uterus
IA	Less than 5 cm
IB	More than 5 cm

A Retrospective Study of 20 Cases of Uterine Sarcoma in A Single Institute Over 10 Year Period

- II Tumor extends beyond the uterus, within the pelvis
- IIA Adnexal involvement
- IIB Involvement of other pelvic tissues
- III Tumor invades abdominal tissues (not just protruding into the abdomen)
- IIIA One site
- IIIB More than one site
- IIIC Metastasis to pelvic and/or para-aortic lymph nodes
- IV
- IVA Tumor invades bladder and/or rectum
- IVB Distant metastasis

Adenosarcomas

- I Tumor limited to uterus IA Tumor limited to endometrium/endocervix with no myometrial invasion
- IB Less than or equal to half myometrial invasion
- IC More than half myometrial invasion
- II Tumor extends to the pelvis
- IIA Adnexal involvement
- IIB Tumor extends to extrauterine pelvic tissue
- III Tumor invades abdominal tissues (not just protruding into the abdomen)
- IIIA One site
- IIIB More than one site
- IIIC Metastasis to pelvic and/or para-aortic lymph nodes
- IV
- IVA Tumor invades bladder and/or rectum
- IVB Distant metastasis

Carcinosarcomas

Carcinosarcomas should be staged as carcinomas of the endometrium

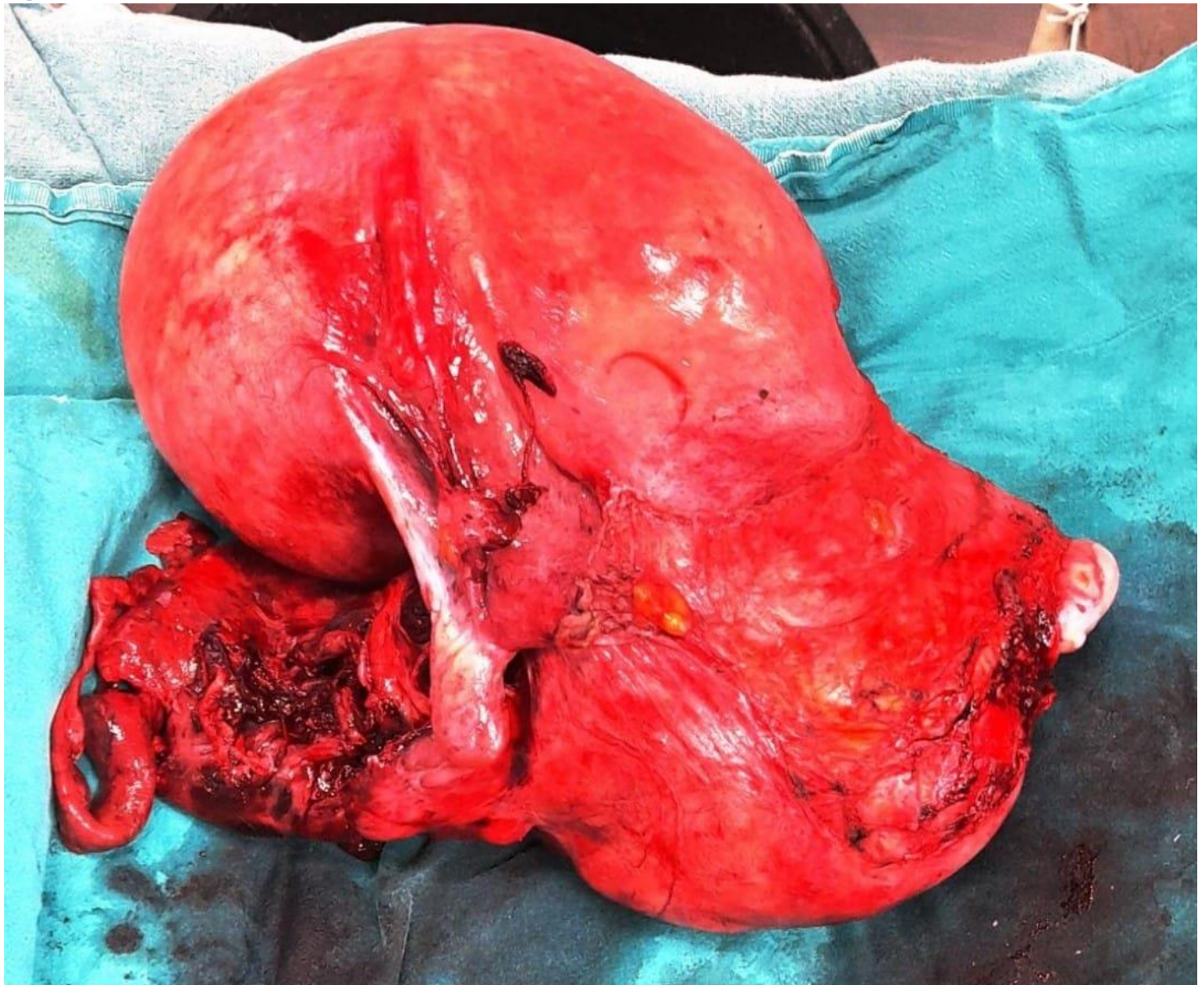
Discussion of interesting cases in our study

A patient who had a history of laproscopic myomectomy and morcellation as a part of infertility evaluation diagnosed to have leiomyosarcoma patient offered hysterectomy and she denied ,one year later she presented with disseminated metastasis and port site metastasis.(6)(7)

Uterine sarcoma in a post hysterectomy patient presented as hematuria, radiology investigations revealed bladder tumor, cystoscopy guided biopsy was done and histopathology suggestive of low grade endometrial sarcoma. Patient managed with cytoreductive surgery and hormone therapy with megestrol.(9)(12)

One patient presented with acute pain abdomen, differential diagnosis of twisted ovarian cyst or degenerated fibroid was made based on clinical examination and radiological findings ,intraoperative findings suggestive of bulky uterus with degenerated fibroid in broad ligament with haemorrhage ,histopathology and immunohistochemistry revealed leiomyosarcoma ,PET CT after 1 month suggestive of active external iliac lymph nodes and patient offered 3DCRT to pelvis 45 GY (1.8GY ,25#) Figure 1

Figure 1



Case of Leiomyosarcoma presenting as degenerated fibroid.

One patient presented with vomitings, distension of abdomen and not passing stools clinical examination and radiological findings suggestive of acute intestinal obstruction secondary to growth around sigmoid colon, emergency laparotomy resection anastomosis of involved bowel done ,histopathological and immunohistochemistry details suggestive of low grade endometrial sarcoma ,this patient also had a history of hysterectomy in the past.(10)

Another patient presented with huge abdominal swelling extending upto epigastric region, patient had history of hysterectomy in past. clinical and radiological findings suggestive of ovarian cyst ,cytoreductive surgery was done ,HPE and IHC suggestive of low grade endometrial carcinoma and patient was kept on Aromatase 25 mg once a day .

One patient who defaulted after diagnosing with leiomyosarcoma presented with skeletal metastasis and stage 4 disease (11)

Many studies have been done for analysing uterine sarcoma cases ,still it poses a diagnostic dilemma,as there are no specific clinical and radiological findings. cytoreductive surgery and further treatment based on histopathological and immunohistochemistry details is the gold standard

CONCLUSION

This is a retrospective study of 20 cases of uterine sarcoma in a single institute managed over 10 year period jan 2012to December 2021

Uterine sarcomas are rare tumours with incidence 1 %among genital malignancies hence much less is known about this malignancy.It is a broad term and includes many types and subtypes of mesenchymal tumors.

A Retrospective Study of 20 Cases of Uterine Sarcoma in A Single Institute Over 10 Year Period

Presenting complaints are non specific and includes abnormal vaginal bleeding, pain and distension of abdomen ,hematuria, weight loss, clinical examination and radiological findings mimic that of a fibroid uterus or ovarian cysts or carcinoma endometrium but principles of management are different .However in few cases MRI can suggest possibility of uterine sarcoma ,further studies are required for this to be implemented in clinical practise.

Endometrial stromal sarcomas are known for their indolent recurrence and a maximum time lag of 15 years post hysterectomy observed in our study. Cases managed inappropriately presented later with upstaged disease there by subjecting pateints to more radical surgeries and decreased survival .Surgery is the main modality of treatment for uterine sarcoma , a panel of immunohistochemical markers than a single marker makes diagnosis accurate. Adjuvant radiation therapy or chemotherapy or hormone therapy is case dependent

Diagnosing uterine sarcoma at a early stage through proper histopathology and immunohistochemical markers and not to confuse with benign fibroid or other endometrial carcinomas is the main conclusion of our study.

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