**Case Report**

**Uterine Leiomyosarcoma Metastatic to Anterior Abdominal Wall 10 Years after Hysterectomy**

Authors  
Mahendra S Navare¹, Ishita Katyal²*, Tanvi M Shah³, Rajashri Kelkar⁴  
Department of General Surgery, Grant Government Medical College & Sir JJ Group of Hospitals, Mumbai, Maharashtra India, Pin Code 400008  
*Corresponding Author  
Ishita Katyal  
Room no 3, Doctor’s Quarters first floor, St George Hospital, Mumbai 400008, India  
Email: ish_doctor@yahoo.co.in, Tel: 9527676201

**Abstract**

Uterine leiomyosarcoma is an uncommon tumour accounting for 1% of all uterine malignancies. These are aggressive tumors with common sites of metastasis as peritoneal cavity, omentum, lung, pelvic lymph nodes, etc. Here we report a rare case of metastasis of uterine leiomyosarcoma to the anterior abdominal wall. A 36 year old patient with a history of supra-vaginal hysterectomy for uterine leiomyosarcoma 10 years back, presented with a lump in lower abdomen since 4 months. CECT pelvis suggested 7.7 * 6.1 cm neoplastic mass in the anterior abdominal wall involving rectus abdominis and adjacent abdominal muscles. Tru-cut biopsy confirmed leiomyosarcoma. Repeat CECT after chemotherapy showed marginal reduction in the size. She underwent wide local excision of mass with a resulting defect of 20 x 15 cm & abdominal wall reconstruction with a composite mesh & tensor fascia lata flap on 17/7/18. Final histopathology report confirmed the diagnosis. PET CT done on 21/9/18 revealed no residual disease.  
**Keywords:** leiomyosarcoma, metastasis to abdominal wall, soft tissue sarcoma.

**Introduction**

Uterine leiomyosarcoma is an uncommon tumour subtype that accounts for 1% of all uterine malignancies⁴. These are aggressive tumors with prognosis depending on the tumour stage & differentiation. The 5 year survival rates for well differentiated tumours are reported to be 63% for localized, 36% for regional metastatic & 14% for distant metastatic disease⁵. The common sites of metastasis are peritoneal cavity and omentum (59%), followed by the lung (52%), pelvic lymph nodes (41%), paraaortic lymph nodes (38%), and liver parenchyma (34%). Uncommon site of distant metastasis include the brain, heart, kidney; independent of pelvic and paraaortic nodal metastasis or intraperitoneal disease⁶. We report a rare case of metastasis of uterine leiomyosarcoma to the anterior abdominal wall 10 years after the initial surgery which was managed successfully with induction chemotherapy followed by wide local excision & abdominal wall reconstruction with a composite mesh & tensor fascia lata flap. After a thorough literature review, we have found this to be the third reported case in literature.
Case Presentation

A 36 year old female patient came with a lump in lower abdomen progressively increasing in size since 4 months. She gave a history of supra-vaginal hysterectomy done for uterine leiomyosarcoma 10 years back. Patient did not receive any adjuvant treatment following hysterectomy. She had been asymptomatic since then until 4 months back. She was evaluated at a cancer centre for the same & received 3 cycles of Gemcitabine with doxorubicin based chemotherapy with partial response (marginal decrease in size of the mass).

When she came to our centre following chemotherapy her examination finding revealed an 8 x 7 cm hard mass in the lower abdomen about 3cm superior to & not involving the previous surgical scar (Pfanelstein’s incision), 5cm inferior to the umbilicus & reaching the midline. The mass was fixed to the overlying skin & become fixed on head & leg raising tests suggesting it’s origin from the anterior abdominal wall. She had an ECOG score 0.

All investigations were reviewed thoroughly. A contrast enhanced computed tomography scan (CECT) of pelvis was suggestive of a neoplastic mass in the anterior abdominal wall involving the full thickness of the lower part of rectus abdominis & some part of the adjacent external oblique, internal oblique & transversus abdominis, with suspicious invasion into the bladder wall. The mass measured 7.7 *6.1cm in greatest dimensions on the CECT. PET-CT was negative for any other focus of metastasis. A tru-cut biopsy of the mass had confirmed it to be a leiomyosarcoma & the patient had received chemotherapy for the same. Repeat CECT was done which showed marginal reduction in the size of the mass. There was suspicion of loss of fat planes with the bladder but no obvious invasion into the bladder musculature.

Patient was posted for wide local excision of the mass on 17/7/18. On exploration, fat planes with the bladder were found to be well maintained & a wide local excision of the mass involving full thickness of the abdominal wall including the peritoneum & the overlying skin was done with 3cm margins all around. The resulting defect measured 20 x 15cm.

The defect was covered with composite meshes ensuring an adequate 5cm overlap on all sides & sutured to the margins of the rectus sheath at superior aspect & to the external oblique aponeurosis laterally. Inferiorly the mesh was placed freely (without sutures) on the peritoneum overlying the bladder.

The mesh was covered with a tensor fascia lata pedicled flap mobilised without tension from the ipsilateral thigh.

The patient had an uneventful post-operative recovery & the flaps healed well. The final histopathology report confirmed the diagnosis of a metastatic uterine leiomyosarcoma with negative margins. On immunohistochemistry tumour cells were negative for desmin while SMA showed equivocal staining suggesting deposits of metastatic sarcoma

PET CT done on 21/9/18 revealed seroma with peripheral low FDG uptake noted in anterior abdominal wall extending to the right inguinal region-post op changes. No other metabolically active disease noted suggesting residual disease.

The patient was reviewed by oncologist and advised observation and follow up after a month.
The mesh was covered with a tensor fascia lata pedicled flap mobilised without tension from the ipsilateral thigh.

Histopathology slide: Tumour cells are arranged in bundles and fascicles. The individual tumour cells are spindle shaped with moderate amount of eosinophilic cytoplasm, pleomorphic round to elongated nuclei with prominent nucleoli. Mitotic activity 8/10 hpf.

Discussion
Uterine sarcoma is a rare tumour which constitutes about 1-3% of all uterine tumours. The most common histologic variants of uterine sarcoma are: mixed mesodermal sarcoma (MMS), leiomyosarcoma (LMS) and endometrial stromal sarcoma (ESS) with the average incidence of 50%, 30% and 15% respectively\cite{4}. Leiomyosarcoma is an aggressive tumour with an early widespread dissemination. Surgery, mainly total abdominal hysterectomy and bilateral salpingo-oophorectomy (TAH, BSO), constitutes the main therapeutic modality employed in this tumour\cite{4}. The tumour spreads most commonly by haematogenous route to the lung, thyroid, liver, brain and bone\cite{5} while spread to skeletal muscle is very rare.

After a thorough literature review we could find not more than 6 cases of skeletal muscle metastasis of uterine leiomyosarcoma have been reported (thigh\cite{6}, cheek\cite{7}, right temporal region\cite{8} and two case of metastatic uterine leiomyosarcoma to the rectus abdominis muscle. To the best of our knowledge this is the third case of metastatic uterine leiomyosarcoma to the rectus abdominis muscle. This is also the largest metastasis to be completely excised, which required a reconstruction of the abdominal wall using a tensor fascia lata flap.

Gungar et al.\cite{9} reported a case of a 39-year-old multigravid woman who underwent total abdominal hysterectomy, bilateral salpingo-oophorectomy and bilateral pelvic & paraaortic lymph node dissection and appendectomy in December, 2005 for uterine leiomyosarcoma. The patient complaint of a suprapubic mass of about 6cm and pelvic pain in March 2006. Operative findings of a second surgery revealed a myomatous mass measuring 4x5x6 cm located in the rectus abdominalis muscle that could not be totally excised from the rectus abdominalis muscle. Histopathological examination revealed leiomyosarcoma. Abdominal magnetic resonance imaging (MRI) done 1 month later suggested a 3.5x2.5x2 cm mass in the left rectus abdominis muscle, and chest X-ray showed 90x35 mm of opacity. She was given 25 cures in total of 50 gr external abdominal radiotherapy and 6 cures of chemotherapy of Adriamycin 100 mg, Haloxan 3 gr and mesna 3 gr after which she was lost to follow-up. Hence there is no information about the fate of the mass.

Kose et al\cite{10} reported A case 57-year-old multigravid patient who presented with a palpable mass in her abdomen with a diameter of approximately 3.5 cm The patient had a history of hysterectomy seven years ago with a postoperative
histopathological report of leiomyosarcoma. Abdominal computerized tomography revealed a soft tissue mass with a diameter of 3.5 cm at the inferior site of the middle of both rectus abdominis muscles. The mass was completely excised. The case was diagnosed as leiomyosarcoma according to histopathology and immunohistochemistry findings. Yoon BS et al. reported a case of recurrent uterine leiomyosarcoma invading the abdominal wall. This was a case of local recurrence. The patient underwent a cytoreductive surgery, including resection of rectus abdominis muscle followed by reconstruction of defect using a synthetic mesh followed by radiotherapy & chemotherapy.

**Conclusion**

In conclusion, our case is third of the rare reported cases of uterine leiomyosarcoma metastatic to the anterior abdominal wall. This is also the largest metastatic mass of the three reported. We have reported the successful management of this lesion with multimodality treatment involving induction chemotherapy followed by complete surgical excision with negative margins. We have also reported the successful reconstruction of the defect using composite meshes & pedicled tensor fascia lata flap. No grants.

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