**ABSTRACT**

Smooth muscle tumors, though rare, are reported to be the most common benign and malignant mesenchymal tumors in adult women. Leiomyosarcomas may originate from any part of the vagina and are mostly submucosal. Patients usually present with vaginal discharge or bleeding or rarely dyspareunia and micturition. Vaginal leiomyosarcoma is a very aggressive tumor with fast local invasion and metastasis to distant organs. Radical resection by surgery remains the best treatment, and we continue to recommend surgical resection as the primary treatment. The role of adjuvant radiotherapy and chemotherapy is not clearly defined and can be considered optional in high-grade sarcomas to prevent recurrence, invasion, or spreading of the tumor. However, usually, it does not improve the survival of the patient.

**Keywords:** Adjuvant radiotherapy, Chemotherapy, Immunohistochemistry, Vaginal leiomyosarcoma.

**INTRODUCTION**

Vaginal leiomyosarcomas account for less than 10% of soft tissue sarcomas arising from either the smooth muscle cells in the vaginal wall or tissues near the vagina, mostly submucosal.\(^1\) The upper part of the posterior vaginal wall is the most typical site of malignant tumors of the vagina.\(^2\) Vaginal tumors are rare, accounting for less than 1% of cancers of the reproductive organs. Squamous cell carcinomas (75–90%) comprise the most common vaginal malignancies, followed by adenocarcinoma (5–10%), melanoma, and leiomyosarcoma.\(^3\) Vagina is quite a common site of secondaries which amounts to be about 84% of vaginal carcinomas.\(^4\) Secondary tumors are most commonly from the cervix (32%) followed by endometrium (18%), colon and rectum (9%), ovary, and vagina (6%).\(^5\)

**CASE REPORT**

A 46-year-old female, P4L4, was admitted with complaints of something coming out per vagina for 6 months which reduced on its own with on-and-off spotting per vagina. On clinical examination, a 7 × 7 cm foul-smelling, friable, necrotic mass was felt per vagina and had a clinical suspicion of either infected or malignant cervical polyp or genitourinary prolapse. Examination under anesthesia was planned after a routine preoperative workup and anemia correction with a hemoglobin level of 4 gm/dL. However, there was acute prolapse of the mass while straining during defecation, with active bleeding from the mass. The patient was immediately posted for examination under anesthesia after the arrangement of three packed red blood cells. A 12 × 15 cm cauliflower-like necrotic mass was popping out of the introitus, friable to touch (Fig. 1). The base of the mass was arising from the left lateral vaginal wall, and the healthy cervix was visible separate from the mass (Fig. 2). Wide resection of the tumor with an adequate margin of the vagina was done (Fig. 3), and the mass and vaginal margin were sent for a histopathological evaluation. An endometrial biopsy was taken to rule out other causes for bleeding per vagina. The histopathological report of vaginal mass was suggestive of leiomyosarcoma, with IHC- tumor cells positive for SMA, Desmin, Vimentin and H-caldesmon, Ckit, Pan CK, and CD10 were negative, with Ki67 index of 60%. Vaginal margin and endometrial biopsy were free of tumor cells. PET scan of the abdomen showed an FDG-avid heterogeneously enhancing soft tissue density lesion of 1.6 × 2.1 × 2.3 in the left lateral vagina, probably inflammatory changes (Fig. 4) and no spread elsewhere suggestive of no spread of tumor cells. Moreover, even local uptake after surgery was not conclusive; hence, the diagnosis of stage I disease was made. After...
1 year of follow-up, the local adjuvant radiotherapy patient has not shown any recurrence and is doing fine.

**Discussion**

Smooth muscle tumors, though rare, are reported to be the most common benign and malignant mesenchymal tumors in adult women. Leiomyosarcomas may originate from any part of the vagina and are mostly submucosal. The most important prognostic factor determining survival is the stage of the disease and the histopathological grade of the tumor. Younger acquiring the tumor have better survival compared to those suffering in old age.

The exact etiology is not known, with few case reports suggestive of occurring post-pelvic radiotherapy, which, however, was not the case. Several reports document the carcinogenic potential of implanted foreign bodies (i.e., Dacron grafts, shrapnel bullets, and retained surgical sponges) and the different sarcomas that may result secondary to the tissue inflammatory and repair process.

Patients experience symptoms of vaginal discharge or bleeding. Some may also feel some mass, fullness, or ulcers in the vagina. They may also present as rectal bleeding. Rarely, they may complain of dyspareunia, postcoital bleeding, or difficulty in micturition. Vaginal leiomyosarcoma is a very aggressive tumor with fast local invasion and metastasis to distant organs.

Vaginal sarcomas are rare, and whatever information is available is through isolated case reports, so no concrete plan of treatment is available. The usual recommended primary treatment for these tumors is wide excision with a clear margin; however, if the patient can tolerate pelvic exenteration, would have better long-term survival. At young ages with low-stage and low-grade tumors, surgical resection has a better prognosis than chemotherapy or radiation therapy.

Radical resection by surgery remains the best treatment and is reserved as an initial approach to its treatment.

Palliative treatment with adjuvant radiotherapy and chemotherapy is also proposed and can be considered optional in high-grade sarcomas to prevent recurrence, invasion, or spreading of the tumor. However, usually, it does not improve the survival of the patient.

**Conclusion**

Primary vaginal sarcoma constitutes less than 3% of all malignant vaginal lesions, with leiomyosarcoma being the most common in adult women. Its etiology and diagnostic criteria are all inconclusive. The gold standard for its diagnosis is histology and IHC. Definitive treatment available as recommended from limited sources suggests surgical resection or chemoradiation with no conclusive survival rate.

**References**