ISSN (O): 2320-5407
ISSN (P): 3107-4928

Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/22740
DOI URL: http://dx.doi.org/10.21474/IJAR01/22740

RESEARCH ARTICLE

SOLITARY FIBROUS TUMOR OF THE VAGINA MIMICKING LEIOMYOMA: A RARE CASE REPORT

Dr. Anjum Khan, Dr. Arpana Verma , Dr. Suman Agrawal

Manuscript Info

Manuscript History
Received: 8 December 2025
Final Accepted: 10 January 2026
Published: February 2026

Key words:-
Solitary fibrous tumor; vagina; mesenchymal tumor; STAT6; spindle cell tumor.

Abstract

Background: Solitary fibrous tumor(SFT)is an uncommon mesenchym al neoplasm, most frequently arising from the pleura. Involvement of the female genital tract is rare, and vaginal localization is exceptionally uncommon, posing significant diagnostic challenges.
Case summary: A 20-year-old girl presented with dysuria, haematuria, lower back pain, fever, and vaginal bleeding. Examination revealed a 6×8 cm firm, fixed, non-tender mass in the right lateral vaginal wall. Imaging suggested a vascular heterogeneous mass consistent with vaginal leiomyoma.She underwent complete surgical excision.Histopat hology showed a well-circumscribed spindle-cell tumor with hyalinized collagen,lymphocytic infiltration,and characteristic staghorn vasculatur e, without mitosis or necrosis, confirming a solitary fibrous tumor. The postoperative course was uneventful.
Conclusion: Vaginal SFT should be considered in the differential diagn osis of spindle cell vaginal tumors. Accurate diagnosis relies on charact eristic histomorphology and confirmatory immunohistochemistry, parti cularly STAT6. Complete surgical excision and long-term follow-up are essential.

Introduction :-

Solitary fibrous tumor (SFT)is a rare fibroblastic mesenchymal neoplasm that was originally described in the pleura and subsequently identified at a wide range of extra pleural locations including the meninges, orbit, retroperitoneum, pelvis, and rarely, the vagina. SFT's are extremely rare with an overall incidence of approximately 1-2 cases per million individuals. In the female genital tract, SFT's are infrequently encountered, and in large series of genital SFT's, only a single vaginal case was identified among 25 reported tumors. To date, very few cases of primary vaginal SFT have been documented in the English literature, highlighting its exceptional rarity. Most SFT's are benign; however, approximately 10-20% demonstrate malignant potential. Clinically and radiologically, vaginal SFT may closely mimic leiomyoma, making preoperative diagnosis challenging. Clinical manifestations depend on the anatomical site and may include dyspareunia, dysuria, bleeding per vagina in women of reproductive age. Diagnosis is primarily based on clinical evaluation and supported by imaging modalities such as three-dimensional ultrasound or Magnetic resonance imaging. Definitive diagnosis is established by histopathological examination and immunohistochemistry. Surgical excision with complete removal of the tumor and negative margins is the cornerstone of management for vaginal SFT. At present, there is no established role for adjuvant radiotherapy or chemotherapy in histologically benign vaginal SFT's. Although rare, SFT should be considered in the differential

Corresponding Author: -Dr. Suman Agrawal
Address: Postgraduate Student, Department of Obstetrics and Gynaecology, Pt.J N M Medical College, Raipur, Chhattisgarh, India.

diagnosis of vaginal masses, frequently misdiagnosed as leiomyoma, fibroma, or angiomyofibroblastoma preoperatively due to similar presentation. Awareness of this rare tumor is important to ensure accurate diagnosis, appropriate surgical management, and adequate follow-up.

Case Report:-

A 20-year-old adolescent girl, presented with complaints of dysuria for two month and haematuria for one week associated with lower back pain, fever and bleeding per vagina for one week, she attained menarche at the age of 12 years and had regular menstrual cycles with an average flow. There was no history of known comorbidities or chronic illness. She had history of urinary tract infection eight-month prior, for which she received treatment. Local examination revealed a 6x8 cm firm, well-defined, smooth, non-tender, fixed mass involving the right lateral wall of the vagina, approximately 6 cm proximal to the introitus, no palpable lymphadenopathy, per rectal examination revealed normal findings. Based on the clinical examination findings a provisional diagnosis of vaginal leiomyoma was made.

Ultrasonography was suggestive of a heterogenous mass with internal vascularity, raising the possibility of a cervical fibroid or vaginal leiomyoma. MRI findings revealed a large heterogenous mass measuring approximately 6x6.6x8.4 cm, involving the right lateral wall of the vagina and extending into the vaginal vault. Anteriorly the mass was compressing the posterior aspect of the urinary bladder and displacing the urethra to the left. Fat planes were maintained, supporting the diagnosis of vaginal leiomyoma. The patient underwent complete surgical excision of the mass. Intraoperative period was uneventful. Definitive diagnosis of SFT was confirmed by histopathological examination which revealed a well-circumscribed tumor composed of oval-to spindle cells and spindle-to-oval shaped nuclei. The cells were arranged haphazardly in short fascicles with areas of hyalinised collagenous stroma and focal streaming of cells. The tumor exhibited a prominent staghorn vasculature pattern. Areas of lymphocytic infiltration were noted. Mitosis and necrosis were absent. Postoperative period was uneventful.

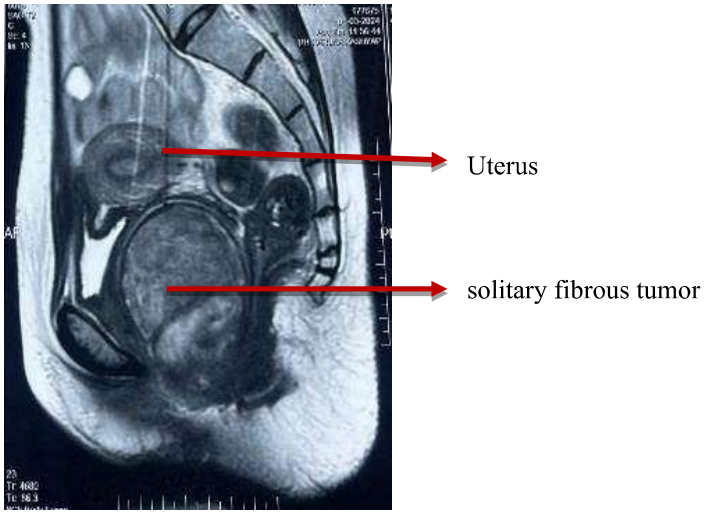

Figure1: MRI (T2 weighted image): Heterogenous iso to hyperintense bilobed lesion involving right lateral vaginal wall – possibly suggestive of large vaginal leiomyoma.

Figure 2: Intraoperative picture.

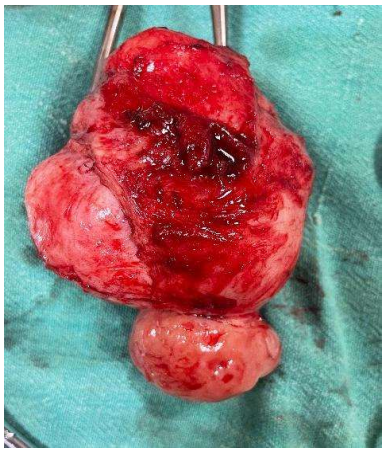

Figure 3: Gross specimen, capsulated, bosselated mass with areas of haemorrhage.

Discussion:-

SFT of the vagina is an exceptionally rare mesenchymal neoplasm, with only sporadic cases reported in the literature. Owing to its rarity and nonspecific clinical presentation, vaginal SFT is frequently misdiagnosed preoperatively as leiomyoma or other benign stromal tumors. Most patients present with a slow-growing, painless vaginal mass, and imaging findings are often inconclusive, underscoring the importance of histopathological and immunohistochemical evaluation. Microscopically, SFT is characterized by a so-called “pattern less pattern” of bland spindle cells embedded in a variably collagenous stroma with prominent staghorn-shaped vessels. Immunohistochemistry plays a pivotal diagnostic role; strong positivity for CD34, BCL-2, and especially nuclear STAT6 expression confirms the diagnosis and distinguishes SFT from other vaginal spindle-cell lesions. In contrast, vaginal leiomyomas show smooth muscle differentiation with desmin and smooth muscle actin positivity and lack STAT6 expression. Although the majority of vaginal SFT’s follow a benign clinical course, malignant behaviour has been reported in extra pleural sites, including the female genital tract. Features such as increased cellularity, mitotic activity, necrosis, and infiltrative margins may predict aggressive behaviour. Therefore, complete surgical excision with clear margins remains the treatment of choice, and long-term follow-up is advisable due to the potential for late recurrence.

Feature	Solitary Fibrous Tumor	Vaginal Leiomyoma
Origin	Mesenchymal fibroblastic	Smooth muscle
Gross Appearance	Well circumscribed, firm	Well circumscribed, whorled
Histology	Pattern less spindle cells, staghorn appearance	Interlacing smooth muscle bundles
CD34/ STAT 6	positive	negative
SMA/DESMIN	negative	Strongly positive
Recurrence	Possible with incomplete excision	rare

Table 1: Difference between Solitary Fibrous Tumor and Vaginal leiomyoma

Each additional report of vaginal SFT contributes meaningfully to the limited evidence base, helping refine diagnostic pathways, risk assessment, and follow-up strategies. Heightened awareness among gynaecologists and pathologists will improve recognition of this rare tumor and ultimately optimize patient outcomes.

Conclusion:-

From a gynaecological perspective, this case reinforces three key clinical messages. First, rare mesenchymal tumors like SFT should remain in the differential diagnosis of atypical or large vaginal masses, particularly when imaging features are not entirely characteristic of leiomyoma. Differential diagnosis of vaginal masses includes vaginal leiomyoma, cervical fibroid, gastrointestinal stromal tumor (GIST), schwannoma, Bartholin cyst, aggressive angiomyxomas both clinically and radiologically. Second, definitive diagnosis hinges on thorough histopathologic and immunohistochemical evaluation, with STAT6 serving as a decisive marker. Third, long-term surveillance is essential irrespective of apparently benign histology, but malignant transformation possible in 10- 20%cases. Complete surgical excision with negative margin is the classic treatment modality. Vaginal SFTs though rare, should be followed up periodically every 6-12 months for first 2-3 years and then annually.

Declarations:-

Ethical approval and consent to participate- Not applicable.

Informed consent –Informed consent was obtained from the patient.

Conflict of Interest-The authors declare that they have no competing interests.

Funding- None.

Acknowledgement-Not applicable.

References:-

1.WHO Classification of Tumors Editorial Board. WHO classification of tumors of female genital tumors. 5th ed. Lyon: International Agency for Research on Cancer; 2020.
2. Rekhi B, Bapat P, Shetty O. A rare case of vaginal solitary fibrous tumor confirmed by STAT6 and NAB2–STAT6 fusion. Int J Gynecol Pathol. 2019;38(5):453-58.
3. Demicco EG, Wagner MJ, Maki RG, Gupta V, Iofin I, Lazar AJ, et al. Risk assessment in solitary fibrous tumors: validation and refinement of a risk stratification model. Mod Pathol. 2017;30(10):1433-42.
4. Robinson DR, Wu YM, Kalyana-Sundaram S, Cao X, Lonigro RJ, Sung YS, et al. Identification of recurrent NAB2–STAT6 gene fusions in solitary fibrous tumor. Nat Genet. 2013;45(2):180-85.
5. Fritchie KJ, Jin L, Rubin BP, Burger CD, Jenkins SM, Yi ES. STAT6 immunohistochemistry is helpful in the diagnosis of solitary fibrous tumors. Am J Surg Pathol. 2013;37(7):1067-76.
6. Akiyama Y, Nabeshima K, Koita H, Yamanaka M, Koono M. Solitary fibrous tumor of the vagina. Pathol Int. 2000;50(4):327-31.
7. Nascimento AG. Solitary fibrous tumor: an ubiquitous neoplasm of mesenchymal differentiation. Adv Anat Pathol. 1996;3(6):388-95.