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Case Study IJTT

A Rare Case of Symplastic Leiomyoma of Uterus: A Case Report

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Abstract

Uterine smooth muscle tumors (USMT) are of mesenchymal origin and develop from the smooth muscle cells of the uterus. Leiomyomas and their subtypes are the most commonly occurring USMT's. Symplastic Leiomyoma is an unusual histologic subtype of Benign Leiomyoma, hence also known as atypical or Bizarre leiomyoma. It is often difficult to differentiate it from Leiomyosarcoma because of its bizarre looking nuclei on histology. However it's malignant transformation is rare. Among benign uterine smooth muscle tumors (USMT), symplastic leiomyoma is a unique histologic subtype that is categorized as an unusual or weird leiomyoma. These tumors start in the uterine smooth muscle cells and develop from mesenchymal tissues. Symplastic Leiomyoma is unique among USMTs, leiomyomas, and their subgroups because of its unusual and fascinating histological characteristics. Symplastic leiomyoma and its malignant cousin, leiomyosarcoma, are frequently difficult to distinguish from one another due to the unusual appearance of the tumor's nucleus upon histological inspection. Symplastic Leiomyoma is characterized by strange-looking nuclei, which may cause diagnostic ambiguity because these morphological characteristics may resemble those of malignancies. Because of the nuclei's unusual characteristics, it may be difficult to differentiate them from more severe lesions, which could result in a mistaken diagnosis and cause patients needless anxiety. It is important to stress that, despite the histological similarities, malignant changes in Symplastic Leiomyoma are rare and the tumor usually progresses benignly. Despite the low overall frequency of malignant development in symplastic leiomyoma, proper therapeutic care depends on a precise diagnosis and categorization. In order to ensure that patients with this benign subtype receive the necessary treatment while avoiding needless interventions typically reserved for malignant conditions, pathologists and clinicians can make more informed decisions regarding patient care with the aid of enhanced understanding of the unique histological features and immunohistochemical markers associated with Symplastic Leiomyoma. When it comes to uterine smooth muscle tumors, this thorough understanding is crucial for improving patient outcomes and improving diagnostic strategies.

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INTRODUCTION

Uterine Leiomyomas are the most common Benign Neoplasms of uterus, mostly affecting women of age groups 30–50 years [1]. Symplastic Leiomyoma also known as Leiomyoma of Bizarre Nuclei is an unusual variant of Leiomyoma [2]. Microscopically they show cytological atypia in form of bizarre nuclei, there is absence of high mitotic activity and necrosis [3]. Although they are benign entity, their large bizarre nuclei with eosinophilic cytoplasm makes it difficult to differentiate it from Leiomyosarcoma [4].

Understanding the unique features of symplastic leiomyoma becomes essential in clinical practice to inform effective therapy approaches. Although the majority of the time these tumors have a benign history, the possibility of misinterpretation highlights the need for a nuanced assessment in order to prevent patients with this particular variety of uterine leiomyomas from experiencing needless anxiety or needless invasive therapies. Increased awareness and comprehension of the subtle clinical and histological aspects of symplastic leiomyoma lead to better patient care and more accurate diagnoses.

CASE PRESENTATION

A 60-year-old woman presented to the gynecology outpatient department (O.P.D.) with a chief complaint of growing abdominal distention during the previous six months, according to the patient's medical history, which was discovered after additional inquiry. Notably, the patient denied experiencing any of the accompanying symptoms of nausea, vomiting, lack of appetite, or yellowish skin discoloration. Notably, the patient's present problems started 15 years before she went through menopause.

The patient's last delivery was eighteen years prior to her presentation, according to her obstetric history. Given the possible effects on pelvic and abdominal structures, this multiparous history is pertinent to the entire assessment.

The type and degree of the abdominal distention were assessed using a clinical examination that included imaging tests and abdominal palpation. To further identify the underlying reason, laboratory testing such liver function tests, complete blood counts, and computed tomography or ultrasound scans were probably used.

In light of the lack of symptoms commonly linked to gastrointestinal or liver pathology, gynecological etiologies may be the focus of clinical attention. One could investigate possibilities such ovarian tumors, uterine diseases, or other anomalies of the pelvis. In addition, this postmenopausal patient with a significant obstetric history may benefit greatly from a comprehensive gynecological examination, which includes pelvic ultrasound, to determine the cause of her abdominal distention.

This example emphasizes how crucial it is to treat abdominal distention in postmenopausal women using a complete and multidisciplinary approach. This includes a thorough evaluation of both gynecological and non-gynecological variables to provide suitable therapy techniques.

CLINICAL EXAMINATION

General Examination The patient was of normal built. Pulse rate, heart rate and blood pressure were within normal limits. There was no pallor or icterus. *Per Abdominal* examination revealed a uterus with a mass of around 28 week size, hard in consistency, slightly mobile with smooth margins. It was non tender. *Per Vaginal* examination a mass of 10*10 cm with variegated consistency. *Per Speculum* examination revealed a cystocele 2+ and cervix could not be visualised.

USG WHOLE ABDOMEN AND PELVIS

Large well-defined mixed density lesion of size 14.1*13.0*13.0 cm seen in midline within pelvis with mass effect on adjacent structures causing secondary bilateral hydroutreteronephrosis

NCCT- WHOLE ABDOMEN

Large lower abdomen and pelvic mass, possible exophytic uterine mass or large subserosal fibroid with degenerative changes.

SURGICAL PROCEDURE

The patient underwent debulking surgery with Trans Abdominal Hysterectomy with Bilateral Salpingo-oopherectomy with Omentectomy under General Anesthesia. The specimen was sent to Histopathology lab of Department of Pathology and further processed and diagnosed.

GROSS

Received a specimen of Uterus measuring 17×13×8. Multiple globular encapsulated masses was seen which are intramural in location. On serial sectioning of masses seen with, creamish brown areas mixed with areas of hemorrhage, necrosis along with yellowish white friable areas (degenerative changes) and areas showing myxoid changes were identified. E+M measured 1 cm. Relevant sections were taken and were given for further processing (Figure 1).

Another fibrofatty tissue piece labelled as Omentum was received measuring 13×5×2.5 cm. No lymphnode was identified in the tissue. The H and E stained slides were examined under light microscopy.

MICROSCOPY:

Sections from cervix revealed features of Chronic Cervicitis with Nabothian cyst. *Sections from Endomyometrium* revealed senile cystic atrophy with Monckeberg's arteriosclerosis. *Sections from Subserosal Fibroid* showed intersecting fascicles of spindle cells exhibiting bizarre shaped, hyperchromatic. Multilobulated nuclei and fibrillary eosinophilic cytoplasm. Large areas of hemorrhage and infarction were seen, However, no mitotic activity was identified. (*Figures 2, 3). Sections from Omental tissue* revealed only sheets of mature adipocytes and no abnormal cells were seen.

IHC: Ki-67 Immunostaining was done and it showed <5% proliferation index.

Final impression of Senile Cystic Atrophy of Endometrium with Monckeberg's arteriosclerosis with Chronic Cervicitis with Nabothian Cyst with *Symplastic Leiomyoma* showing a Ki-67 proliferative index of <5% was given.

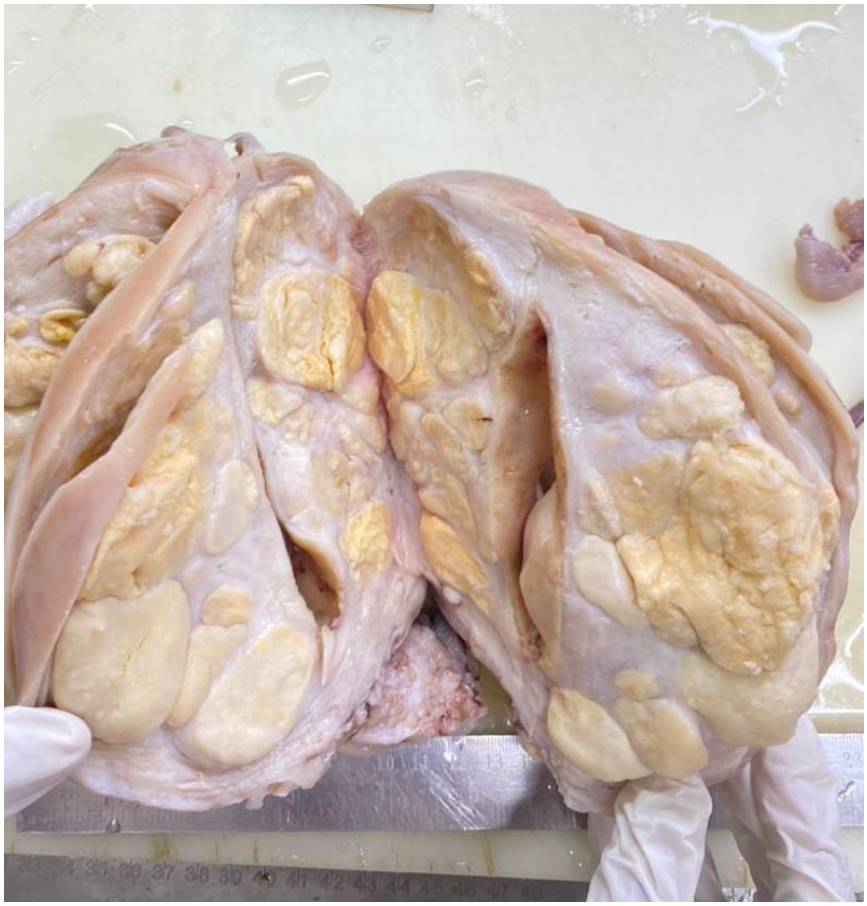

Figure 1. Cut section of uterus show multiple well circumscribed lesions yellowish in colour.

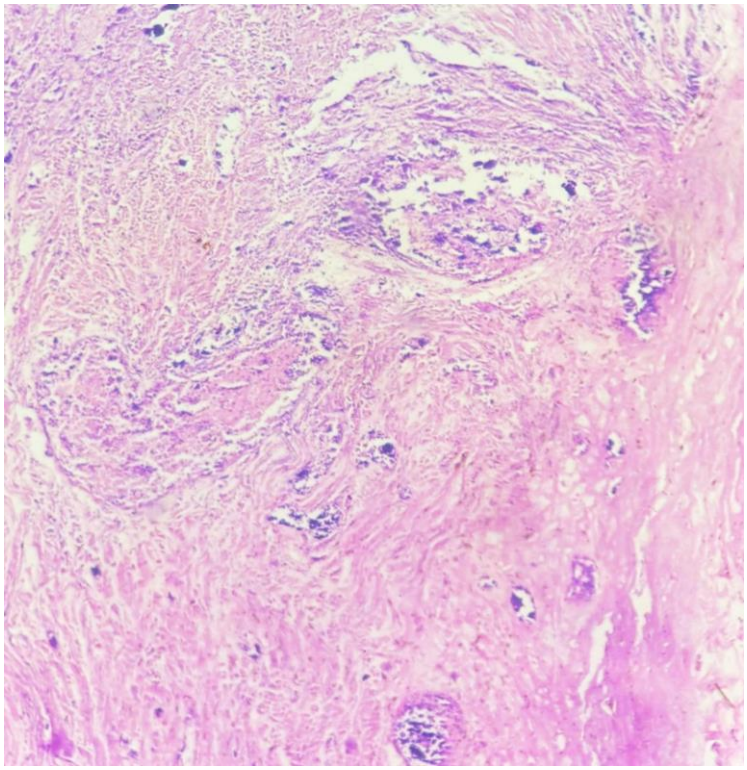

Figure 2. 10X H & E strained section shows intersecting fascicles of smooth muscle cells with focal areas of nuclear atypia.

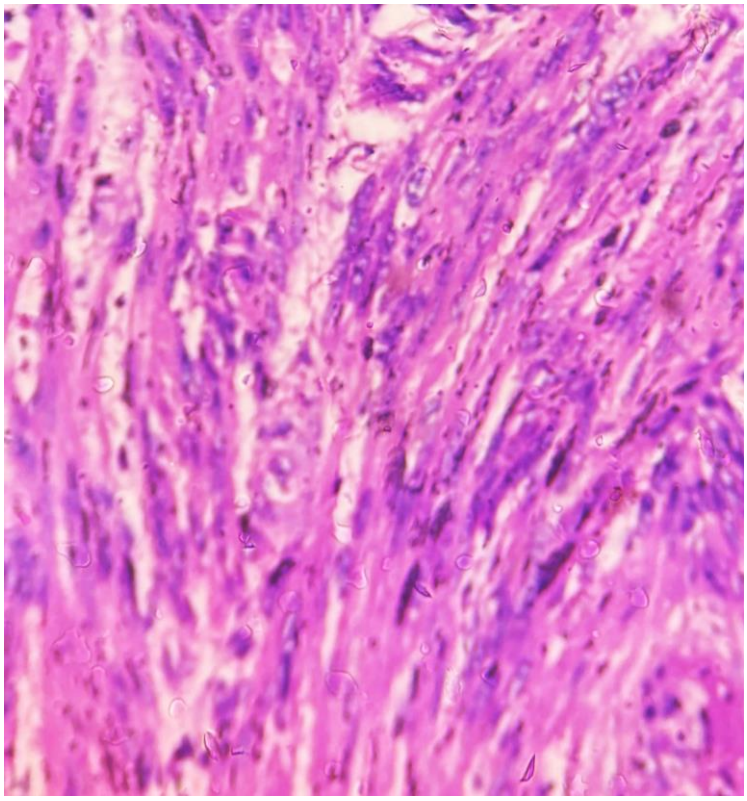

Figure 3. 40X ; H and E stained section showing presence of atypia in form of bizzarre looking nuclei.

DISCUSSION

Burns' original coining of the name "Symplastic Leiomyoma" represented a critical turning point in the categorization and comprehension of uterine smooth muscle neoplasms [5]. Symplastic leiomyoma, or leiomyoma with aberrant nuclei, occupies a unique place in the spectrum of benign neoplasms that affect the smooth muscles of the uterus [6]. The intricacy and variety of Symplastic Leiomyosarcomas is further highlighted by the few cases of these lesions that have been described in odd places, such as the vagina and scrotum, despite the fact that they are primarily detected in the uterus [7, 8].

Symplastic leiomyomas are generally observed on gross examination as lesions with a uniform whorling look upon cut section, a feature that is similar to that of conventional leiomyomas [9]. Nonetheless, the characteristic characteristics of symplastic leiomyomas are visible at the microscopic level. Large multinucleated nuclei with eosinophilic cytoplasm are a defining feature of these tumors that contributes to their diagnostic problems. They also demonstrate moderate to severe cytological atypia [10, 11].

Most importantly, Symplastic Leiomyomas can be distinguished from their malignant counterparts, especially Leiomyosarcomas, by the lack of considerable mitotic activity (<10/10 high-power fields) and tumor type necrosis [12]. The use of immunohistochemical analyses, particularly Ki-67 staining, has become a useful addition to the diagnostic process. Symplastic leiomyomas usually show negative staining for Ki-67, which helps to distinguish them from malignant uterine tumors [13].

The prevalence of malignant transformation in symplastic leiomyomas is extremely rare, with recorded examples showing a transformation rate of less than 0.2% [14], despite their histological complexity. The low likelihood of malignant progression highlights the largely benign characteristics of symplastic leiomyomas, offering comfort in terms of their clinical care and prognosis.

In conclusion, Symplastic Leiomyomas are a particular kind of uterine smooth muscle neoplasms that have a mostly benign clinical course and distinct histological characteristics. To improve our comprehension and treatment of these mysterious lesions, research endeavors to clarify the molecular basis and improve diagnostic techniques must continue.

CONCLUSION

Symplastic leiomyomas are benign uterine smooth muscle neoplasms that can be difficult to diagnose because of their macroscopic and clinical similarities to conventional leiomyomas. Despite having similar appearances at a glance, Symplastic Leiomyomas have unique microscopic characteristics characterized by nuclear atypia, which has strange-looking nuclei. This distinctive appearance can make it challenging to distinguish this tumor type from potentially malignant ones, especially leiomyosarcomas, which highlights the importance of a careful microscopic inspection.

Making the distinction between malignant and symplastic leiomyomas requires microscopic examination. Key markers that aid in the characterisation of these lesions are evaluated, including mitotic figures and the presence of tumor type necrosis. Symplastic leiomyomas, in contrast to malignant tumors, usually show no tumor type necrosis and less than 10 mitotic figures per 10 high-power fields.

The use of markers like Ki-67 in immunohistochemistry is particularly important for fine-tuning the diagnosis and directing future treatment plans. The proliferation marker Ki-67 is frequently used to evaluate the growth percentage of tumor cells. Ki-67 staining frequently shows a negative result or a low proliferative index in the case of symplastic leiomyomas, supporting the benign nature of these growths. By providing accurate information, pathologists and clinicians can more easily differentiate between benign uterine tumors and symplastic leiomyomas, leading to more suitable treatment options.

Determining the best course of treatment for symplastic leiomyomas requires a precise diagnosis. Final treatment options can be customized in accordance with their benign character and minimal risk of malignant transformation, giving patients peace of mind and assisting medical personnel in delivering the best care possible. A more comprehensive understanding of symplastic leiomyomas is made possible by ongoing research and technological breakthroughs, which also help to improve the precision of diagnosis and the efficacy of therapeutic measures for these uncommon uterine smooth muscle neoplasms.

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