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Smooth Muscle Tumor Of Uncertain Malignant Potential (STUMP): Insights Into Morphology In The Era Of Immunohistochemistry

***[1]Dr.Rekha Bhandari, [2]Dr. Sarita Devdhar, [3]Dr.Arun Chaudhary, [4]Dr.Ayush Saxena**
[1]Associate Professor, [2]Professor, [3]Professor and HOD, [4]Senior Resident,
Department of Pathology, Noida International Institute of Medical Sciences, Greater Noida, India

***Corresponding Author:**
Dr. Rekha Bhandari
Associate Professor, Department of Pathology, NIIMS

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Abstract

Smooth muscle tumor of uncertain malignant potential (STUMP) of the uterus is a group of smooth muscle tumors, which pose a difficult diagnosis to classify as benign or malignant by clinicians, radiologist as well as pathologist due to the fact that they lie in the grey zone between leiomyoma and leiomyosarcoma (1) The ambiguity in diagnostic criteria creates paucity of the available data further leading to challenge in diagnosis and management of the condition. Moreover the aberrant clinical behaviour of STUMP, with some having malignant potential raises the necessity to keep such patient in close follow up and report all such cases.

Keywords: Leiomyoma, Leiomyosarcoma, STUMP, IHC

Introduction

Smooth muscle tumor of uncertain malignant potential (STUMP) of the uterus is a group of smooth muscle tumors, which pose a difficult diagnosis to classify as benign or malignant by clinicians, radiologist as well as pathologist due to the fact that they lie in the grey zone between leiomyoma and leiomyosarcoma (1) The ambiguity in diagnostic criteria creates paucity of the available data further leading to challenge in diagnosis and management of the condition. Moreover the aberrant clinical behaviour of STUMP, with some having malignant potential raises the necessity to keep such patient in close follow up and report all such cases.

Case Report :

We report a case of 40 years old P3L3 female, resident of Greater Noida, presenting to Gynae OPD with complaints of menorrhagia since past 8-10 months associated with heaviness in lower abdomen. However there was no history of any foul smelling discharge, itching, nausea or vomitting. She denied any OCP abuse. Past and personal history was insignificant with all Full term normal vaginal delivery.

On General examination she was found to be pale. Systemic examination comprising of per abdominal inspection and palpation revealed 14 week size uterus following which she was adviced for a complete hemogram along with sonography of lower abdomen and pelvis.

On investigation her haemoglobin was found to be low (7.6 gm/dl). USG showed bulky enlarged uterus with intramural uterine leiomyoma measuring 6.0x5.5x5.0 cm with degeneration. A detailed clinical history and examination along with diagnostic investigations led to a provisional diagnosis of Abnormal Uterine Bleeding due to Leiomyoma (AUB-L) with moderate anemia and the patient was advised for Surgery.

Patient underwent Total abdominal Hysterectomy with Bilateral Salphingoopherectomy and the specimen was sent for histopathological examination.

We received Uterus with cervix with Bilateral fallopian tubes and ovaries. Uterus with cervix was grossly enlarged together measuring 11.0x9.0x5.0 cm. External surface of Uterus was bossellated and partially open. Cervical length measured 2.5 cm. Cervical lips appear normal with presence of nabothian cysts. On probing cervical canal appears to be patent. Endometrial cavity is pushed away by a large circumscribed intramural tumor measuring 5.5x5.0x5.0 cm. Cut surface has a whorled appearance with a focus of haemorrhage[Figure 1]. Myometrium varies from 2.0-5.0 cm. Endometrium measures 0.2cm.

Microscopic examination shows presence of a circumscribed smooth muscle tumor in myometrium showing interlacing bundles of oval to plump cells, many of which show pleomorphism, bizarre nuclear forms with coarse nuclear chromatin and variable amount of eosinophilic cytoplasm. 4-5 mitotic figures/10 hpf seen [Figure 2]. Intervening stroma shows areas of hyalinization, focal haemorrhage and mild chronic lymphocytic infiltrate. With above histopathological findings a final diagnosis of STUMP was rendered and patient was adviced to be kept on clinical follow-ups.

Discussion :

The usual presentation and symptoms of STUMP is like that of benign leiomyoma and hence pose a difficulty to differentiate clinically. The mean age of STUMP diagnosis is around 43 years, similar to our case which may be attributed to paucity of demographic data available and rarity of the condition (2). Amongst all females who undergo hysterectomy, around only 0.01% of cases are diagnosed as STUMP's (3).

The histopathological diagnosis of STUMP as per currently followed Stanfords criteria requires minimum one of the three diagnostic indicators including mitotic count of >=10 per 10 hpf, moderate to severe cellular atypia, and presence of coagulative tumor cell necrosis (4). In the present case, although no areas of necrosis were noted and mitosis was also found to be moderate however there was significant cellular atypia with many bizzare nuclear forms.

The heterogeniety of histological features calls for a need for additional modalities for confirmation of lesion. A panel of Smooth muscle actin (SMA), h-Caldesmon and Desmin can confirm smooth muscle origin of tumor. However the role of Immunohistochemical (IHC) markers is not exceedingly contributory in case of STUMPs. A study conducted by Akbarzadeh et al. demonstrated the usefullness of IHC markers in differentiating STUMPs from leiomyomas and concluded that no single IHC marker is efficient enough to diagnose STUMPs (5).

Hence the need to emphasize the fact that the oldage histopathology still outweighs the modern IHC specially in context of STUMP's and continues to hold its importance in diagnosis. Moreover, there still are centres where IHC facilities are in a naïve stage of growth like ours or not available at all.

Conclusion :

The fact that STUMP has no definitive preoperative diagnostic modality makes it all the more demanding to be reported. Histopathology stays to be the goldstandard for diagnosis. Prognosis depends upon the extent of disease and mitotic index.

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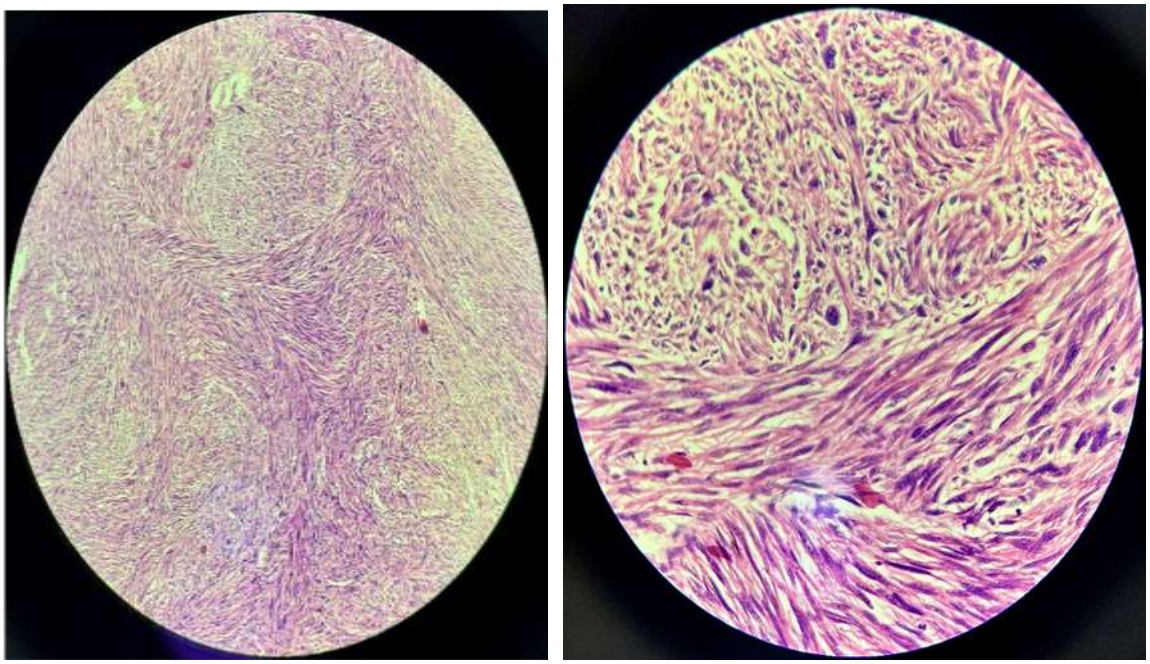
Figure 1.Total hysterectomy with uterus showing a large circumscribed intramural tumor measuring 5.5x5.0x5.0 cm. Cut surface has a whorled appearance with a focus of haemorrhage.

Figure 2a (Low power view, 10x, H&E) and 2b (High power view,40x, H&E) showing interlacing bundles of oval to plump cells exhibiting pleomorphism, bizarre nuclear forms with coarse nuclear chromatin and mitotic figures.



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