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Case Report

Uterine Smooth Muscle Tumor of Uncertain Malignant Potential – An Unusual Case Report

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Abstract

The term smooth uterine muscle of uncertain malignant potential (STUMP) indicates a group of uterine smooth muscle tumors (SMTs) that cannot be diagnosed unequivocally as benign or malignant. Diagnosis, surgical management, and follow-up of this neoplasm remain controversial, especially in pre-menopausal women with fertility desire, due to the non aggressive behaviour and prolonged survival rate when compared to leiomyosarcomas. Studies of STUMP are limited in population and rarity results in few analysis of its fertility outcomes and oncologic prognosis. STUMP has a lower tumor growth rate and recurrence is often delayed by years after initial event compared to high grade leiomyosarcomas which have an aggressive clinical course and behavior thus making it very important to differentiate stump from leiomyosarcomas .Recurrencerate ranges from 8.7% to 11%.

Keywords: Uterus, STUMP, smooth muscle tumour.

INTRODUCTION

Uterine smooth muscle tumors (SMTs) have historically been distinct in benign leiomyomas and malignant leiomyosarcomas on the basis of cytological atypia, mitotic rate and presence or absence of tumor cell necrosis [1]. The Stanford criteria for the histologic diagnosis of malignant SMT (leiomyosarcoma) reported by Bell *et al*., include at least two of the following criteria: diffuse moderate-to severe atypia, a mitotic count of at least 10 mitotic figures (MF)/10 high power fields (HPFs) and tumor cell necrosis [2]. Cellularity, which is a subjective diagnosis, tumor borders and their relations with the surrounding myometrium represent additional but less weighted morphologic criteria in the diagnosis of "smooth uterine muscle of uncertain malignant potential" (STUMP) [2]. The term STUMP was firstly used in the literature by Kempson in 1973 [3] and the current World Health Organization classification indicates that a uterine SMT not diagnosed unequivocally as benign or malignant should be defined as STUMP [4]. The lack of uniform diagnostic criteria and the diagnostic uncertainties of STUMP have resulted, over the years, in an overdiagnosis of this neoplasia [5]. In actuality, as reported by Ip *et al*., the diagnosis of STUMP is appropriate when a tumor shows any unusual combination of the 3 above mentioned features but does not satisfy the Stanford criteria for leiomyosarcoma [6].

CASE REPORT

A 50 years old female with a history of heavy menstrual bleeding since four months was admitted in Gynecology department. Further Total abdominal hysterectomy and bilateral salpingoophorectomy was performed and specimen was received at the histopathology department. Grossly we recieved a uterus with a friable grey white to grey brown mass measuring 8x7x6 cm was noted which was extending from body of uterus and encroaching fundus and distorting the entire endometrial cavity. The mass is extending laterally and involving 3/4th of myometrium (Figure 1). Further cut section of body of uterus shows a 1.5cm intramural fibroid. Cut section of the mass is friable greyish yellow with areas of necrosis. Both ovaries measuring 3x2x1cm, cut section showed corpora albicantiae and corpus hemorrhagicum. Both fallopian tubes received measured 4cms each, cut sections appear normal. After adequate fixation bits were given from cervix, endometrium myometrium tubes and ovary. On microscopy multiple sections taken

from myometrium revealed unencapsulated tumor composed of extensive areas of necrosis and oval to spindle shaped tumor cells arranged in fascicles and interlacing bundles. These spindle cells are composed of eosinophilic cytoplasm and elongated spindle shaped nuclei with blunt ends (Figure 2, 3 & 4).

There is no evidence of nuclear atypia and mitotic activity hence diagnosis of smooth muscle tumor of uncertain malignant potential was made. Immunohistochemical staining with Smooth muscle actin showed strong positivity (Figure 5), and it was confirmed as STUMP.

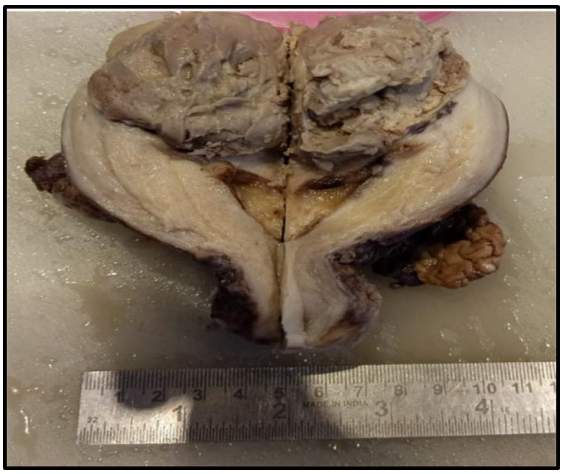

Figure 1: Gross Image of Uterus with a friable grey white to grey brown mass measuring 8x7x6 cm

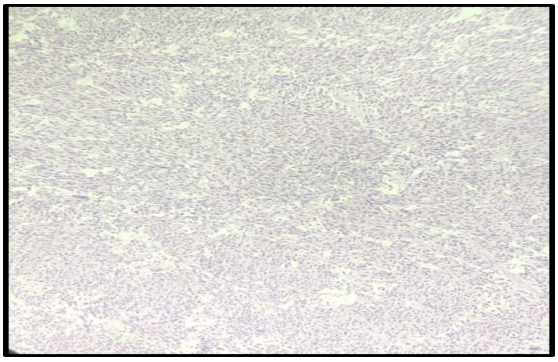

Figure 2: Tumor tissue arranged in interlacing bundles and fascicles with elongated wavy nuclei [H&E,x10]

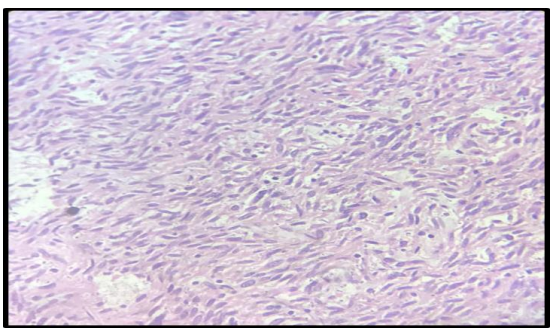

Figure 3: Spindle cells with eosinophilic cytoplasm, elongated nuclei with blunt ends. There is no evidence of atypia and mitotic activity [H&E,x40]

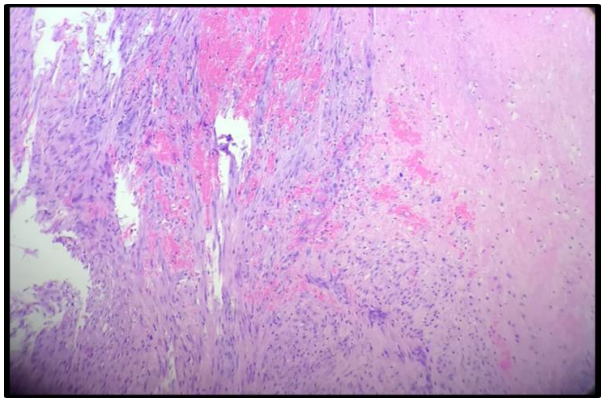

Figure 4: Tumor tissue with areas of hemorrhage and necrosis [H&E,x10]

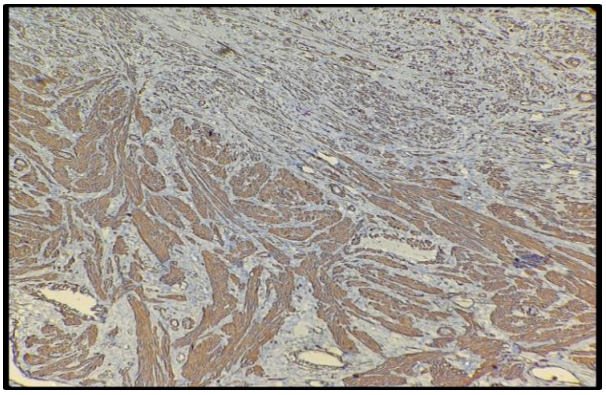

Figure 5: Positive for immunohistochemical marker Smooth muscle actin

DISCUSSION

Smooth muscle tumor of uncertain malignant potential was first initially used in the literature by Kempson in 1973. Most common site for STUMP is myometrium, rare sites include broad ligament, ovaries cervix and vagina. Occurs in women of reproductive age or postmenopausal women. The clinical presentation of STUMP resembles that of uterine leiomyomas with features such as pelvic mass growing rapidly, pain and pressure symptoms at pelvic region. Smooth muscle tumors of the uterus are subdivided into three categories: leiomyomas, leiomyosarcomas and STUMPs. and the second is dLcult to evaluate, it is within the framework of the STUMP.

The current WHO classification indicates that uterine smooth muscle tumor not diagnosed unequivocally as benign or malignant should be defined as STUMP. The lack of uniform diagnostic criteria and diagnostic uncertainities has resulted in the overdiagnosis of this neoplasm. The Stanford criteria for the histologic diagnosis of malignant smooth muscle tumor (leiomyosarcoma) include following, diffuse moderate- to severe atypia, a mitotic count of atleast 10 mitotic figures (MF)/10high power fields (HPF) and tumor cell necrosis.

Coagulative tumor cell necrosis is the most important and strong factor for the diagnosis of STUMP. It is associated with malignant behavior which is characterized by abrupt transition between viable cells and necrotic areas. Cellularity, tumor borders and their relations with surrounding myometrium represent additional but less weighted morphologic criteria in the diagnosis of smooth muscle tumor of uncertain malignant potential. Immunohistological markers positive are Desmin, H caldesmon, Smooth muscle actin ER, PR and WT1.

Treatment approaches and follow-up of these tumors have been still controversial, particularly in the reproductive age patients with fertility desire, due to the non-aggressive behavior and prolonged overall survival (OS) rate comparing to LMS. In the literature, there are only a few case series and some of these studies are lack of particular clinicopathological features and/or follow-up data [5].

In the present study, we aimed to evaluate the clinicopathological features, obstetric, and oncological outcomes of patients diagnosed with STUMPs in the light of literature data.

Stump are morphologically heterogenous and diagnostically challenging. Preoperative diagnosis and differentiation from other tumors with imaging modalities is difficult thus histopathologic features are crucial and mandatory for definitive diagnosis and management.

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