

RCOG World Congress 2025

Navigating Uncertainty: Fertility-Sparing Management of Uterine STUMP

Introduction:

- **Smooth Muscle Tumor of Uncertain Malignant Potential (STUMP)** is a **rare uterine tumor diagnosis found in only 0.01% of cases**. [1]
- When a uterine leiomyoma can not be classified as a standard/variant leiomyoma, adenomyoma, or leiomyosarcoma, it is commonly labeled as a uterine smooth muscle tumor of uncertain malignant potential (STUMP).
- The **standard treatment currently recommended is total abdominal hysterectomy**, [2] but ideal management must be based on diagnosis. Given the patient's age and fertility issues, our Tumor Board advised for expectant management in this case, with the use of IHC, imaging and clinical markers.
- Limited data exist on its behavior and prognosis, so ongoing research is focused on better understanding it.

Case Particulars:

- A 35-year-old nulliparous woman **underwent abdominal myomectomy elsewhere to address abnormal uterine bleeding (AUB)** by large intramural myoma (11.70 X 9.1cm). Histology was reported as Smooth Muscle Tumor of Uncertain Malignant Potential (STUMP) with **low mitotic activity and no coagulative tumor necrosis but with diffuse cytological atypia**. Immunohistochemistry revealed **positive staining with desmin and H-Caldesmin**.
- Hysterectomy was recommended elsewhere, but the patient sought a second opinion at AIIMS Kalyani. Upon evaluation, the patient was asymptomatic. Reevaluation of tissue blocks was done to rule out leiomyosarcoma. Surgical margins of myomectomy specimen were assessed to rule out recurrence or persistence. CE-MRI suggested a **large lesion involving the entire myometrium extending from the endometrial junction up to the outer myometrium**, described as a Mesenchymal Neoplasm. Further analysis showed **weak expression of p53, p16, and ki67**.
- Considering the disease's rare expression, low malignant potential, and recurrence rate, a **multidisciplinary board decision to three-monthly follow-up for first two years and six-monthly follow-ups** until the completion of her family through imaging and clinical examinations was made.
- Meanwhile, She was given information with regards **to complete her family and counselled for fertility preservation options considering her marital status, age, AMH (1.5 ng/ml) and total AFC <10**
- Due to financial constraints, the patient underwent a single cycle of oocyte freezing at a private fertility centre, resulting in the preservation of 5 (m2) mature oocytes.
- Repeat CE-MRI after three months showed no significant change from her previous MRI scan.

Author: Dr Simantini Bose, Birla Fertility & Baby Science IVF, Bengaluru

Co-Authors: Dr. Subrat Panda (HOD Dept of Obstetrics & Gynecology),

Dr Pooja Meena, All India Institute of Medical Sciences (AIIMS, Kalyani)

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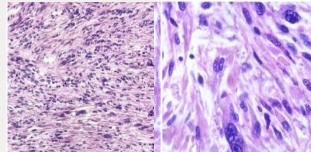


Figure 1: The histology reported as STUMP with two mitotic figures per 10 high-power fields (HPFs) and no coagulative tumor necrosis with diffuse cytological atypia

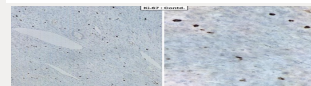


Figure 2: Ki67 ~ 12% ; Ki67 is a cell proliferation marker that corresponds to a nuclear non-histoprotein expressed by cells in the proliferative phase

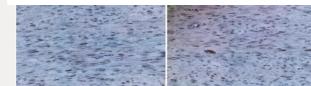


Figure 3: p53 (Immunoreactivity in 1-25 % cells): 1+ (weak to moderate expression)

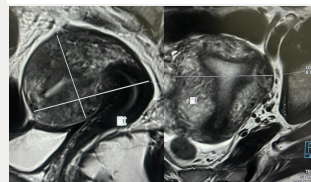


Figure 4: CE-MRI showing a large lesion involving the entire myometrium extending from the endometrial junction up to the outer myometrium, described as a Mesenchymal Neoplasm or post-operative reactive changes. The principal MRI features are: >50% of volume shows a strong signal on T2W1 as well as non-enhancing cystic areas.

Discussion:

- Smooth Muscle Tumor of Uncertain Malignant Potential (STUMP) is hard to distinguish between benign leiomyoma and malignant leiomyosarcoma. According to AIOM 2019 : P4, p53 & Ki67 expression are helpful in distinguishing smooth muscle sarcoma & STUMP.
- Diagnosis can be challenging due to its similarity to other tumors. According to the Morphological Uterus Sonographic Assessment (MUSA) criteria, **STUMP shows higher color Doppler enhancement than that in benign masses due to higher intralesional and perilesional vascularization**. [3]
- Histopathological description focused on some specific features. The presence of tumor cell necrosis, cytological atypia, mitotic index, cellularity, tumor margins, and vascular invasion at the periphery of the tumor are the five essential criteria for STUMP
- Immunohistochemistry helps diagnose and determine the prognosis of the disease. **P16 and P53 overexpression determines high-risk patients**. [4]
- **Recurrence after hysterectomy and myomectomy is similarly found to be 8.7 to 11 %**. [5] Long-term follow-ups are important since such tumors often behave as low-risk malignancies. Follow –up interval of 6 months for first 5 years followed by annual surveillance for additional period of 5 years.[6] Lungs are frequently involved metastatic site so annual chest radiography.
- The decision to treat premenopausal women with fertility desire should include **risk-benefit discussion**, taking into account histological features of tumor, psychological impact of hysterectomy in young women pregnancy outcomes in case of myomectomy & ambiguous malignancy of STUMP.[7]
- Good clinical outcomes for both mother and baby are possible after a **fertility sparing myomectomy** and successful pregnancy in a patient diagnosed pre-conceptually with a STUMP.[8]
- Uterine saving procedures are a viable and safe option for patients with reproductive plans provided **pathology is confirmed at expert centres**. [9]
- Low incidence, late onset of recurrence (median period of 54 months) and relapse rate of 6.6% fertility sparing surgery is rational.[10]

Conclusion:

- Due to its rare nature, STUMP diagnosis and management are challenging.
- Ongoing research aims to determine malignant transformation potential and preserve fertility. 5-year survival rate of 90-100% patients even those with recurrence.
- Fertility-sparing myomectomy has led to favorable outcomes in patients.

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