International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Chatterjee A et al. Int J Reprod Contracept Obstet Gynecol. 2025 Mar;14(3):957-960
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20250541

Case Report

Large uterine leiomyoma with smooth muscle tumour of uncertain malignant potential: a case report

Abhinibesh Chatterjee[1], Polly Chatterjee[1]*, Avishek Bhadra[2], Rumela Biswas[3]

[1]Department of Gynaecology and Obstetrics, Eskag Sanjeevani Baghbazar, Kolkata, West Bengal, India
[2]Department of Gynaecology and Obstetrics, R. G. Kar Medical College and Hospital, Kolkata, West Bengal, India
[3]Department of Gynaecology and Obstetrics, Medical College, Kolkata, West Bengal, India

Received: 06 January 2025
Accepted: 04 February 2025

***Correspondence:**
Dr. Polly Chatterjee,
E-mail: pcbb258@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Smooth muscle tumours of uncertain malignant potential (STUMP) are a category of uterine neoplasms that do not meet the criteria for benign or malignant tumours, potentially representing an intermediate stage between leiomyomas and leiomyosarcomas. A 26-year-old nulliparous woman presented with heavy menstrual bleeding and an abdominal mass, with preoperative imaging suggesting a benign uterine myoma. Following a laparoscopic myomectomy, histological analysis revealed STUMP, characterized by a low mitotic index and marked nuclear pleomorphism without necrosis. The patient was advised to conceive soon and plan for definitive surgery after completing her family. She later delivered via elective caesarean section at 35 weeks and is currently recovering well. STUMP often mimics benign leiomyomas and is usually diagnosed post-surgery, complicating preoperative assessment. Recurrence rates vary, particularly in younger patients, emphasizing the need for individualized management strategies that balance fertility preservation with monitoring for recurrence. Regular follow-ups are essential for optimal care.

Keywords: STUMP, Smooth muscle tumour of uncertain malignant potential, Uterine neoplasm, Fibroid, Myomectomy

INTRODUCTION

Smooth muscle tumours of uncertain malignant potential (STUMP) include a diverse range of uterine neoplasms that don't fit the current histological definitions for either benign or malignant tumours. STUMP might represent an intermediate form between leiomyomas and leiomyosarcomas or could be an undetected low-grade leiomyosarcoma.[1] Among women who undergo hysterectomy or myomectomy for a suspected leiomyoma, only 0.01% are diagnosed with STUMP.[2] Because this condition is so rare and diagnostic criteria are inconsistent, determining its true prevalence is challenging.[3] Additionally, with limited data on the malignant potential of STUMP, managing the condition is controversial, especially for patients who wish to preserve their fertility.

Patients with STUMP experience a diverse range of symptoms like abnormal uterine bleeding, pelvic pain, and lower abdominal pressure, which are similar to those of benign uterine myomas. However, symptoms may vary depending on the size of the uterine mass.[4]

Since STUMP and benign uterine myomas show similarity as per preoperative radiologic imaging and laboratory tests, differentiating between them without pathological confirmation prior to surgery is challenging and nearly impossible.

Conventional surgical treatment for STUMP usually involves myomectomy or hysterectomy. In some cases, myomectomy might be an option for women who wish to preserve their fertility.[5]

In this case report, we describe an unusual case of STUMP presenting as a large uterine mass, initially suspected to be a benign uterine myoma pre-operatively.

CASE REPORT

A 26-year-old Indian nulliparous woman presented to us with complaints of heavy menstrual bleeding. She had a history of heavy menstrual periods lasting 8–10 days with passage of clots for the previous 9-10 months. She had reached menarche at 11 years of age and her periods had previously been regular and of normal volume.

She had no previous significant medical or surgical history.

Physical examination revealed a solid mass of approximately 10 cm or more extending from the lower abdomen to the umbilicus; uterus was near 20-weeks size. The mass was generally firm and mobile. Her vital signs were normal. There were no associated symptoms of weight loss or loss of appetite. Pelvic examination was not performed as she was not sexually active.

Transabdominal ultrasound confirmed the presence of a 9×10 cm solid heterogeneous mass suspected to be a uterine myoma. Bilateral ovaries were normal and there were no other features of malignancy such as lymphadenopathy or ascites. The appearance and examination findings were suggestive of a benign uterine leiomyoma.

Her baseline blood tests were normal except for anemia (hemoglobin 8.9 g/dl, reference range 12–16 g/dl). Her body mass index was 25.5 kg/m^2 (Asian criteria for normal BMI cutoff=18.5-22.9 kg/m^2).

The various treatment options were discussed with the patient and she consented for a laparoscopic myomectomy. A closed laparoscopy was performed. 4 ports were created: one supra-umbilical 10 mm port for the camera and two 5mm ports one on each side, at the junction of medial two-thirds and lateral one-third of spinoumbilical line - one each for the operating surgeon and the assistant surgeon. A third 5 mm port was created between these two in the infra umbilical region.

We encountered a large 12×12 cm fibroid on the posterior wall (Figure 1). Myomectomy was done after temporary clipping of the bilateral uterine arteries at their origin. The repair was done with PDS 2-0 suture (Figure 2). The fibroid was removed after in-bag morcellation. Bilateral tubes and ovaries were apparently healthy. There was no free fluid in the pelvis and no other findings suggestive of malignancy.

The patient was discharged on the second post-operative day, and was advised tablet norethisterone 15 mg at bedtime for thirty days.

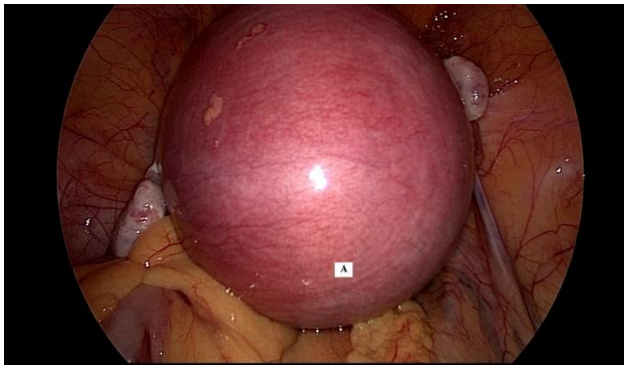

Figure 1: Global view showing large posterior uterine fibroid (A).

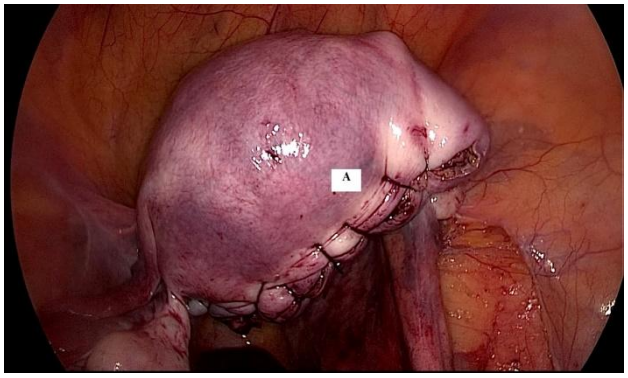

Figure 2: Showing suture line post myomectomy (A).

Histology revealed STUMP (Figure 3). Sections of the tumor were composed of fascicles of oval to spindle shaped cells with elongated nuclei and eosinophilic cytoplasm. Low mitotic index with only one to two mitotic figures (MF) per 10 high-power fields (HPF) was observed. However, diffuse areas showed moderate to marked nuclear pleomorphism. There was no tumor necrosis.

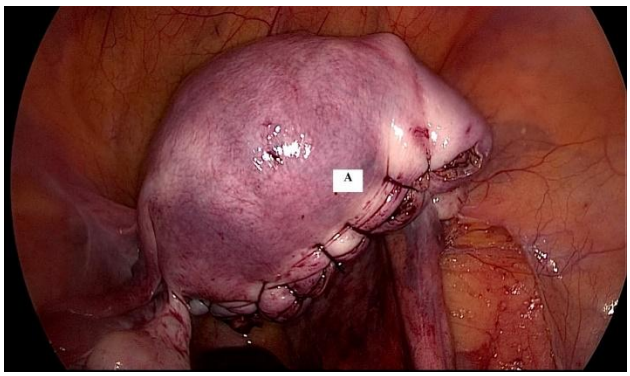

Figure 3: Histology slide showing features of STUMP (A).

After discussion with the patient, she was counselled to conceive as early as possible and to have can definitive surgery after her family is complete. She was followed up regularly every six months.

She was delivered via elective caesarean section at 35 completed weeks of gestation, after completion of corticosteroid dose, in a facility with neonatal intensive care unit. Her C-section was uneventful. During her C-section, uterus was exteriorized and previous healed scar of myomectomy was seen (Figure 4). She delivered a healthy baby (birth weight 2750 grams). At present she is in her puerperal period and doing well.

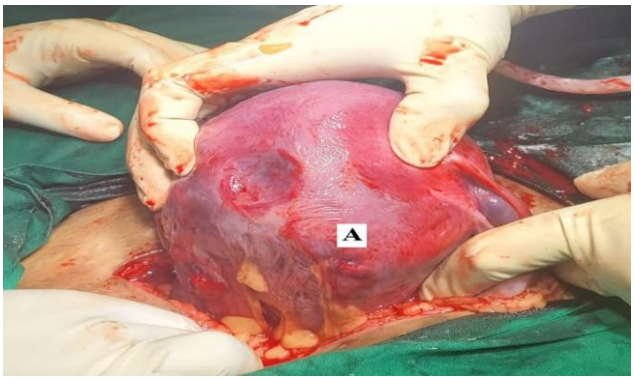

Figure 4: Showing healed myomectomy scar at the time of C-section (A).

DISCUSSION

STUMP often manifests with symptoms similar to those of a benign leiomyoma. In cases like this one, the symptoms can include abnormal uterine bleeding, pelvic mass, anemia or complaints due to secondary compression.[4] The age at which STUMP typically presents is comparable to that of leiomyomas or leiomyosarcomas, but specific risk factors for STUMP remain poorly understood.[6] Literature suggests that the average age for a STUMP diagnosis is approximately 43 years.[6] However, due to its rarity, detailed demographic data are scarce.[6] This makes preoperative diagnosis nearly impossible, so STUMP is frequently discovered unexpectedly post hysterectomy or myomectomy. Differentiating benign leiomyomas from malignant sarcomas before surgery is challenging. Research indicates that approximately 54% of uterine leiomyosarcomas are not identified until after surgery.[9] While MRI can sometimes help to distinguish between benign and malignant uterine tumors by showing increased signal intensity, there is limited evidence to differentiate STUMP from leiomyomas.[7] However, it is important to note that nearly all rapidly growing fibroids are histologically benign, and MRI cannot reliably rule out malignant conditions.[8]

The histopathologic classification of smooth muscle tumors is as per the Stanford criteria and includes at least two of the following: diffuse moderate-to severe atypia, a mitotic count of at least 10 mitotic figures (MF)/10 high power fields (HPFs) and tumor cell necrosis.[3,4,10] STUMP exhibits a mixture of all the features mentioned above without meeting the exact criteria for a leiomyosarcoma diagnosis.[4] In this case, our patient had histologic features consistent with a diagnosis of STUMP as she had a low mitotic index and no coagulative necrosis, but diffuse areas showed moderate to marked nuclear pleomorphism.

Generally, these tumours tend to grow slowly and metastasize later than leiomyosarcomas.[4] However, STUMP has been observed to recur, metastasize, and even transform into leiomyosarcoma.[13] Younger patients seem to have a higher possibility of disease recurrence compared to older patients which is relevant to our study.[1] One study found that the average time to recurrence was 51 months, with various cases showing a range from 15 months to 9 years.[14] The recurrence rate for STUMP varies between 7.3% and 26% depending on the subtypes, with an overall recurrence rate of 11%.[4,6,11,15] Determining accurate recurrence rates is challenging due to varying diagnostic criteria, small sample sizes, and irregular follow-up periods in studies. It has also been proposed that increased recurrence rates might be linked to immunoreactivity for p16 and P53.[11,12] However, definitive evidence is lacking in this regard and it needs to be studied further through observational studies and case reports.

Because of the limited available literature, no universal consensus has been agreed on for management, leaving clinicians to treat and follow-up based on mostly observational data and individual patient profile. It is suggested that hysterectomy is the preferred treatment. After a hysterectomy, follow-up every six months for the first 5 years, followed by annual check-ups for an additional 5 years is usually done.[1] A review of symptoms should be done at each appointment along with an annual MRI to confirm recurrence and/or metastasis. For patients wanting fertility preservation, increased frequency of monitoring is necessary and it must be balanced against the risk of recurrence.[4] Such patients are advised to undergo assessment for recurrence before attempting conception.[14] This is particularly important for this patient who was advised for conception as early as possible following myomectomy and is under stringent follow-up.

CONCLUSION

This case report highlights the complexities associated with diagnosing and managing STUMP, particularly in young women desiring to preserve their fertility. Our patient conceived spontaneously within one-year post myomectomy, which is crucial in this case because she is a 26-year-old woman who has not had children. Opting for a hysterectomy could have produced major psychological effects without any additional benefit to her prognosis. In spite of the adverse effects mentioned, her decision to proceed with a myomectomy was weighed against her risk of recurrence, and close monitoring was advised, along with the possibility of a hysterectomy to be considered after childbirth. After thorough counseling and with support from the multidisciplinary team, the patient has chosen to pursue definitive surgery post-delivery sometime in the near future. Continued research is necessary to establish clearer management guidelines for STUMP to improve patient outcomes.

ACKNOWLEDGEMENTS

Authors would like to thank the Anaesthesia team.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Dall'Asta A, Gizzo S, Musarò A, Quaranta M, Noventa M, Migliavacca C, et al. Uterine smooth muscle tumors of uncertain malignant potential (STUMP): pathology, follow-up and recurrence. Int J Clin Exp Pathol. 2014;7(11):8136-42.
2. Picerno TM, Wasson MN, Gonzalez Rios AR, Zuber MJ, Taylor NP, Hoffman MK, et al. Morcellation and the Incidence of Occult Uterine Malignancy: A Dual-Institution Review. Int J Gynecol Cancer. 2016;26(1):149-55.
3. Stewart EA, Quade BJ, Laughlin-Tommaso SK. Variants of uterine leimyomas (fibroids). 2017. UpToDate. Available at: http://www.uptodate.com. Accessed on 12 October 2024.
4. Ip PP, Tse KY, Tam KF. Uterine smooth muscle tumors other than the ordinary leiomyomas and leiomyosarcomas: a review of selected variants with emphasis on recent advances and unusual morphology that may cause concern for malignancy. Adv Anat Pathol. 2010;17(2):91-112.
5. Vilos GA, Marks J, Ettler HC, Vilos AG, Prefontaine M, Abu-Rafea B. Uterine smooth muscle tumors of uncertain malignant potential: diagnostic challenges and therapeutic dilemmas. Report of 2 cases and review of the literature. J Minim Invasive Gynecol. 2012;19(3):288-95.
6. Guntupalli SR, Ramirez PT, Anderson ML, Milam MR, Bodurka DC, Malpica A. Uterine smooth muscle tumor of uncertain malignant potential: a retrospective analysis. Gynecol Oncol. 2009;113(3):324-6.
7. Schwartz LB, Zawin M, Carcangiu ML, Lange R, McCarthy S. Does pelvic magnetic resonance imaging differentiate among the histologic subtypes of uterine leiomyomata? Fertil Steril. 1998;70(3):580-7.
8. Benson C, Miah AB. Uterine sarcoma - current perspectives. Int J Womens Health. 2017;9:597-606.
9. Skorstad M, Kent A, Lieng M. Preoperative evaluation in women with uterine leiomyosarcoma. A nationwide cohort study. Acta Obstet Gynecol Scand. 2016;95(11):1228-34.
10. Bell SW, Kempson RL, Hendrickson MR. Problematic uterine smooth muscle neoplasms. A clinicopathologic study of 213 cases. Am J Surg Pathol. 1994;18(6):535-58.
11. Ip PP, Cheung AN, Clement PB. Uterine smooth muscle tumors of uncertain malignant potential (STUMP): a clinicopathologic analysis of 16 cases. Am J Surg Pathol. 2009;33(7):992-1005.
12. Atkins KA, Arronte N, Darus CJ, Rice LW. The Use of p16 in enhancing the histologic classification of uterine smooth muscle tumors. Am J Surg Pathol. 2008;32(1):98-102.
13. Macciò A, Chiappe G, Kotsonis P, Lavra F, Serra M, Demontis R, et al. Abdominal leiomyosarcomatosis after surgery with external morcellation for occult smooth muscle tumors of uncertain malignant potential: A case report. Int J Surg Case Rep. 2017;38:107-10.
14. Campbell JE, Knudtson JF, Valente PT, Robinson RD, Kost ER. Successful pregnancy following myomectomy for uterine smooth muscle tumor of uncertain malignant potential: A case report and review of the literature. Gynecol Oncol Rep. 2015;15:1-3.
15. Amant F, Moerman P, Vergote I. Report of an unusual problematic uterine smooth muscle neoplasm, emphasizing the prognostic importance of coagulative tumor cell necrosis. Int J Gynecol Cancer. 2005;15(6):1210-2.

Cite this article as: Chatterjee A, Chatterjee P, Bhadra A, Biswas R. Large uterine leiomyoma with smooth muscle tumour of uncertain malignant potential: a case report. Int J Reprod Contracept Obstet Gynecol 2025;14:957-60.