

DOI: <https://dx.doi.org/10.18203/2320-1770.ijrcog20205802>

Case Report

STUMP tumour in a post-menopausal lady

L. Thulasi Devi¹, Kavita Sinha^{2*}

¹Department of Obstetrics and Gynaecology, ²Department of Pathology, Military Hospital, Amritsar, Punjab, India

Received: 12 October 2020

Revised: 06 December 2020

Accepted: 07 December 2020

*Correspondence:

Dr. Kavita Sinha,

E-mail: kavitasinha8623@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

An interesting case of uterine smooth muscle tumours of uncertain malignant potential is a rare tumour and is between classification of benign and malignant. It is diagnosed based on histomorphology with ill-defined criteria which as yet has no consensus and is technically challenging.

Keywords: STUMP, Post-menopausal, Tumours of uncertain pathology.

INTRODUCTION

Smooth muscle tumors of uncertain malignant potential, (STUMP) represent a histologically heterogeneous group of uterine smooth muscle tumours that cannot be diagnosed as either benign or malignant. Smooth muscle tumours of uncertain malignant potential are usually clinically benign, but should be considered tumours of low malignant potential because they can occasionally recur or metastasize to distant sites.¹ STUMPs have an unpredictable clinical course. On the basis of review of literature, relapses appear to occur generally after a long disease-free interval of up to several years. Therefore, in the patients with STUMPs, long-term, close follow up is required. The focus of future research should be on finding the markers leading to malignant transformation, allowing for better management protocol and treatment.

CASE REPORT

A 45-year-old P3A2, post-menopausal lady presented with chronic pelvic pain. She gave history of previous two normal deliveries and last child birth was 19 years back. She was sterilized and gave history of 2 abortions (MTP). There was no menstrual complaint or any other associations. She was a known hypertensive on medication; her GPE was unremarkable. Systemic examination was within normal limits. Internal

examination revealed uterus Anteverted, appx 12 weeks size with a separate, non-tender, discrete right adnexal mass of appx 6×6 cm with limited mobility. Tumor markers were within normal limits. TVS was suggestive of unicornuate uterus with non-communicating rudimentary horn, TAS was also suggestive of congenital uterine malformation and ruled out ovarian or broad ligament pathology. MRI was also suggestive of same findings and surgicopathological correlation was the only option as malignancy was ruled out. She was planned for diagnostic laparoscopy and proceed. Diagnostic laparoscopy revealed discrete right adnexal mass in broad ligament (Figure 1, 2).



Figure 1: Port entry appearance of uterus and right adnexa.

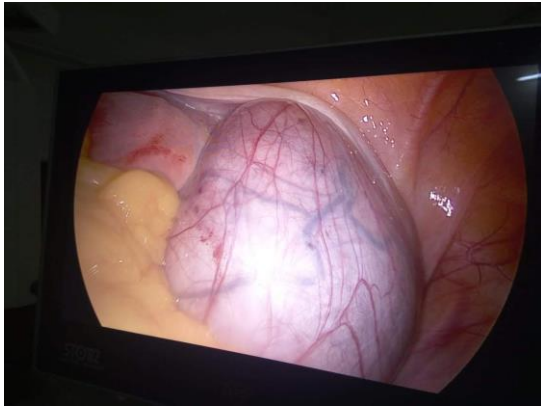


Figure 2: Close up appearance of right adnexal mass in laparoscopy.



Figure 3: Gross appearance of uterus and tumour.



Figure 4: Gross appearance of tumour.

She was taken up for TAH with BSO as per protocol. Frozen section was not available. Post operatively cut section grossly revealed firm to spongy tumour arising

denovo in broad ligament without any grossly visible endometrium, menstrual blood, whorled appearance, ovarian tissue or any mature structure suggestive of teratoma (Figure 3, 4).



Figure 5: HPE Smooth muscle bundles arranged in whorled pattern.



Figure 6: HPE No necrosis, increased mitosis, haemorrhage, atypia or malignancy.

Histopathology was suggestive of “STUMP” tumour based on bell criteria (Figure 5-7) as outlined below and was placed on follow up as per existing protocol. Histopathology of uterus, cervix, Fallopian tubes and both ovaries was normal and endometrium was atrophic. She has been disease free for past one year.



Figure 7: HPE Neurilemmoma like nuclear palisading pattern.

DISCUSSION

Smooth muscle tumours are histologically categorized into leiomyomas and leiomyosarcomas, based on the combination of histological parameters such as mitotic activity, cytological atypia and coagulative tumour cell necrosis.² STUMPs represent a histologically heterogeneous group of uterine smooth muscle tumours that do not clearly fall into the category of either leiomyomas or leiomyosarcomas.³ The clinical behaviour of STUMPs is poorly understood. In previous reports in the literature, most uterine STUMPs had a benign clinical course and were successfully treated with myomectomy or hysterectomy. Based on these parameters, the definition proposed by Bell et al is as follows.⁴ Leiomyosarcomas are defined as tumours with at least two of the following three features: diffuse cytological atypia, tumour cell necrosis, and ≥ 10 mitosis events per 10 HPFs. Leiomyomas are defined as tumours with no or mild cytological atypia, no tumour cell necrosis, and < 5 mitosis events per 10 HPFs. STUMPs are defined as tumours with following features: (1) focal moderate to severe cytological atypia, no tumour cell necrosis, and < 5 mitosis events per 10 HPFs, or (2) no or mild cytological atypia, tumour cell necrosis, < 10 mitosis events per 10 HPFs. STUMPs are relatively rare tumours. The data available on clinical characteristics, biological behaviour, and follow up is insufficient, and therefore it is difficult to predict the clinical course of STUMPs.

Bell criteria for problematic smooth muscle uterine tumours.⁵

WHO defines these neoplasms as uterine smooth muscle tumour that cannot be histologically diagnosed as unequivocally benign or malignant; also known as STUMP. Criteria do not apply to extra uterine tumours and must rigidly apply following criteria for atypia, mitotic figures and coagulative tumour cell necrosis as underlined below.

Atypia^{5,6}

Classify as none/mild or moderate/severe, based on nuclear pleomorphism, nuclear size, nuclear membrane irregularities, chromatin density and nucleoli size/prominence. 1) No/mild atypia: uniform nuclei that may be enlarged, but with smooth nuclear contours, evenly distributed chromatin; minimal variation in nuclear size and shape, small nucleoli 2) Moderate/severe should be detectable at low power. Moderate atypia: large, plump and irregular nuclei with coarse chromatin; if 1-2 enlarged abnormal mitotic figures, call moderate.

Mitotic figures criteria⁵⁻⁷

1) Hairly extensions of chromatin must be present, extending from a central clot-like dense mass of chromosomes; hairy extensions from an empty centre favour a non-mitosis. Count 4 sets of 10 fields in area of

highest mitotic activity, and use the highest count 2) No nuclear membrane 3) Must rule out lymphocytes, mast cells, stripped nuclei, degenerated cells and precipitated haematoxylin 4) Count only definite mitotic figures.

Necrosis^{5,6}

1) Presence or absence is powerful predictor of outcome for patients with uterine smooth muscle tumours. Must distinguish coagulative tumour cell necrosis and hyalinizing necrosis. Coagulative tumour cell necrosis: abrupt transition between necrotic cells and preserved cells; ghost outlines of nuclei of necrotic cells are often seen in necrotic area, but inflammatory cells are uncommon; common in clinically malignant smooth muscle tumours - don't ignore 2) Hyalinizing necrosis: zone of hyalinized collagen between dead cells and preserved cells, reminiscent of infarcted region organized by granulation tissue; eosinophilic collagen matrix common; if dead nuclei present, nuclei are uniform and chromatin is often faint, compared to nuclear hyperchromasia and pleomorphism in tumour cell necrosis; common in leiomyomas 3) Necrosis secondary to ulceration in submucous leiomyomas features acute inflammatory cells and a peripheral reparative process, whereas ghost outlines of nuclei are usually inconspicuous or absent.

Stump⁵

Minimally atypical smooth muscle neoplasms with a low mitotic index but with uncertainty about the histologic type (standard vs. myxoid or standard vs. epithelioid); combination of standard smooth muscle differentiation, marked diffuse severe atypia, low mitotic index and uncertainty about whether coagulative tumour cell necrosis is present; moderate to severe atypia plus uncertain mitotic index because possible mitotic figures may be degenerating nuclei mimicking mitotic figures.

Algorithm⁵

1) No/mild atypia, no tumour cell necrosis → leiomyoma. 2) Moderate/severe atypia, no tumour cell necrosis → atypical leiomyoma if < 10 mitotic figures/HPF or leiomyosarcoma if $10+$ MF/10 HPF 3) Moderate / severe atypia and tumour cell necrosis → leiomyosarcoma (mitotic figures don't matter).

CONCLUSION

Suggested to consider as tumour of low malignant potential because may recur rarely as leiomyosarcoma. Treatment is conservative due to low likelihood of malignant potential; however close follow up is required with further research and guidelines in identification and diagnosis of these tumours preoperatively if possible, for better planning and follow up Guidelines on frozen section should be available. A comprehensive oncosurgical guideline regarding type of surgical

procedure should be instituted by oncogynaecological committees.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Won. Retroperitoneal smooth muscle tumor of uncertain malignant potential after hysterectomy: a case report. *J Medic Case Rep.* 2011;5:214.
2. Berretta R, Rolla M, Merisio C, Giordano G, Nardelli GB. Uterine smoothmuscle tumor of uncertain malignant potential: a three-case report. *Int J Gynecol Cancer.* 2008;18:1121-6.
3. Ip PP, Cheung AN, Clement PB. Uterine smooth muscle tumors of uncertain malignant potential (STUMP): a clinicopathological analysis of 16 cases. *Am J Surg Pathol.* 2009;33:992-1005.
4. 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;113:324-6.
5. Pernick N. Smooth muscle tumors of uncertain malignant potential. Pathology Outlines.com website. Available at: <https://www.pathologyoutlines.com/topic/uterusSTUMP.html>. Accessed on 03 August 2020.
6. Kempson RL, Hendrickson MR. Smooth muscle, endometrial stromal, and mixed Müllerian tumors of the uterus. *Mod Pathol.* 2000;13(3):328-42.
7. Ng JS, Han A, Chew SH, Low J. A clinicopathologic study of uterine smooth muscle tumours of uncertain malignant potential (STUMP). *Ann Acad Med Singap.* 2010;39(8):625-8.

Cite this article as: Devi LT, Sinha K. STUMP tumour in a post-menopausal lady. *Int J Reprod Contracept Obstet Gynecol* 2021;10:373-6.