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STUMP- A Challenging Differential Diagnosis and Therapeutic Dilemma

Ananya Das[1*], Donbok Lynser[2], Yookarin Khonglah[3], Birangana[1], Megha Goyal[1], and Rimabati[1]

[1]Department of Obstetrics & Gynecology, NEIGRIHMS Dr Yookarin Khonglah, Department of Obstetrics & Gynecology, NEIGRIHMS

[2]Department of Radiology

[3]Department of Pathology

[*]Corresponding author:

Ananya Das,
Department of Obstetrics & Gynecology,
NEIGRIHMS

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1. Abstract

Smooth Muscle Tumor of Uncertain Malignant Potential (STUMP) refers to a diverse group of uterine neoplasms that do not fully meet the histologic criteria for classification as either benign or malignant tumors. Typically, when a uterine leiomyoma cannot be definitively classified as a standard or variant leiomyoma, adenomyoma, or leiomyosarcoma, it is categorized as a uterine smooth muscle tumor of uncertain malignant potential (STUMP). In our case 20 year nulligravida presented to gynae OPD with heavy menstruation with per abdomen mass of 30 weeks size. Ultrasound showed multiple uterine mass and patient was taken up for myomectomy.Histopathological report showed features suggestive of leiomyosarcoma and second opinion was taken which was suggestive of STUMP. In this case report, we summarize the current state of knowledge about uterine STUMP, with a particular focus on fertility sparing surgeries. The very purpose of reporting this case is to emphasize that STUMP mimicking leiomyosarcoma can affect a very young age girl. With premenopausal age, decision for hysterectomy is easy whereas in a young girl going ahead with hysterectomy is a crucial decision.No doubt it is a multidisciplinary approach with complete patient involvement who needs to be on regular close follow up.

2. Introduction

Smooth Muscle Tumor of Uncertain Malignant Potential (STUMP) refers to a diverse group of uterine neoplasms that do not fully meet the histologic criteria for classification as either benign or malignant tumors. Typically, when a uterine leiomyoma cannot be definitively classified as a standard or variant leiomyoma, adenomyoma, or leiomyosarcoma, it is categorized as a uterine smooth muscle tumor of uncertain malignant potential (STUMP) [1]. In this case report, we summarize the current state of knowledge about uterine STUMP, with a particular focus on fertility sparing startegies. The current criteria for the histopathologic classification of smooth muscle tumors are based on the Stanford Criteria, and they are diagnosed by an assessment for abundant mitosis (10 per 10 HPFs), cellular atypia and presence of areas of coagulative tumor cell necrosis. STUMP has a combination of the above features, without fulfilling the diagnosis of leiomyosarcoma.

3. Case Description

A 20-year-old nulliparous woman came to gynae OPD with the chief complaint of heavy and prolonged menstrual bleeding for last 5months lasting for 10-15days. She had reached menarche at 12 years of age and her periods had previously been regular and of normal volume. She had history of 1 unit of blood transfusion and injectable iron 1 month back in view of severe anemia. She did not had any history of dysmennorhea. She had never been sexually active.Examination revealed a slim young female with a body mass index of 21. Her vital signs were normal. Her abdomen was soft and nontender, firm, irregular mass felt arising from her pelvis that extended 4^{cm} above the umbilicus with ill-defined borders and

restricted mobility. There was no evidence of ascites clinically. Pelvic examination was not performed, as the patient was not sexually active.Her baseline investigations revealed a hemoglobin of 12g% (reference range 12-18g%).Transabdominal ultrasound examination was suggestive of multiple uterine SOL's of size 7.1 X 4.7cms and 12.7 X 11cms with cystic changes of the biggest one. Both the ovaries were of normal size and no ascites found.The patient was subsequently consented and booked for a myomectomy. This was performed through a Pfannenstiel incision, revealing an enlarged uterus of 28week size with 3 intramural fibroid with one large degenerative intramural fibroid-15x15cms at the fundal region another 7X7cms intramural fibroid in the posterior myometrium of the lower part of uterus just above the cervix and third one around 3X3cm . Both the ovaries and tubes were normal. There was no free fluid in the pelvis and no visible findings suggestive of malignancy. Fibroid was dissected and removed. The defect was closed in two layers using Polyglactin 910 sutures. There was difficulty in enucleating the largest fibroid, whereas the other two could be easily done. Hemostasis for the largest fibroid was difficult, but achieved. All prophylactic measures to reduce bleeding during the procedure was taken. Postoperative recovery was uneventful and the patient was discharged on day [2,3]. Sections show cellular tumours showing pleomorphic spindle cells with hyperchromatic nucleus and moderate amount of cytoplasm arranged in sheets and fascicle. Frequent atypical mitosis seen, 4-10/10 HPF in cellular areas. Ther are large areas of hemorrhage and cystic changes with? foci of necrosis. Occasional focal area of hyalinization noted. Tumours cells are seen infiltrating into uterine muscle. Pleomorphic giant cells are also noted. Morphology suggests moderate grade leiomyosarcoma [2]. Sections show picture of a spindle cell tumour composed of slender to plump spindly and epithelioid cells with scant to moderate amount of eosiphilic cytoplasm with fascicular growth pattern. Cell show multifocal atypia. Haemorrhage and cystic degeneration seen. Coagulative tumour cell necrosis not noted. Mitosis- 2-4/10HPF. Morphology suggests STUMP (smooth muscle of uncertain malignant potential).

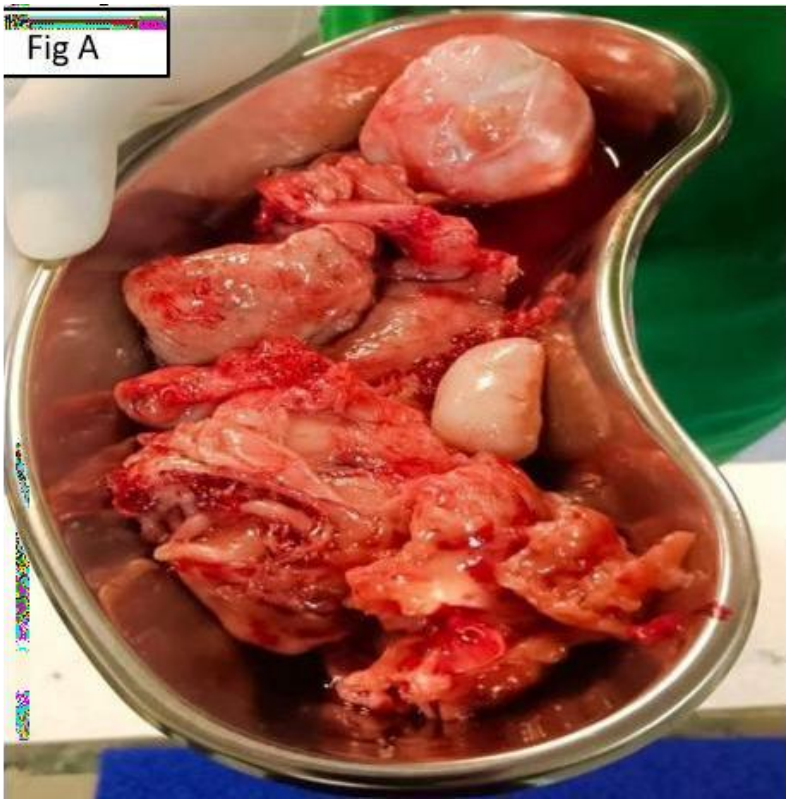
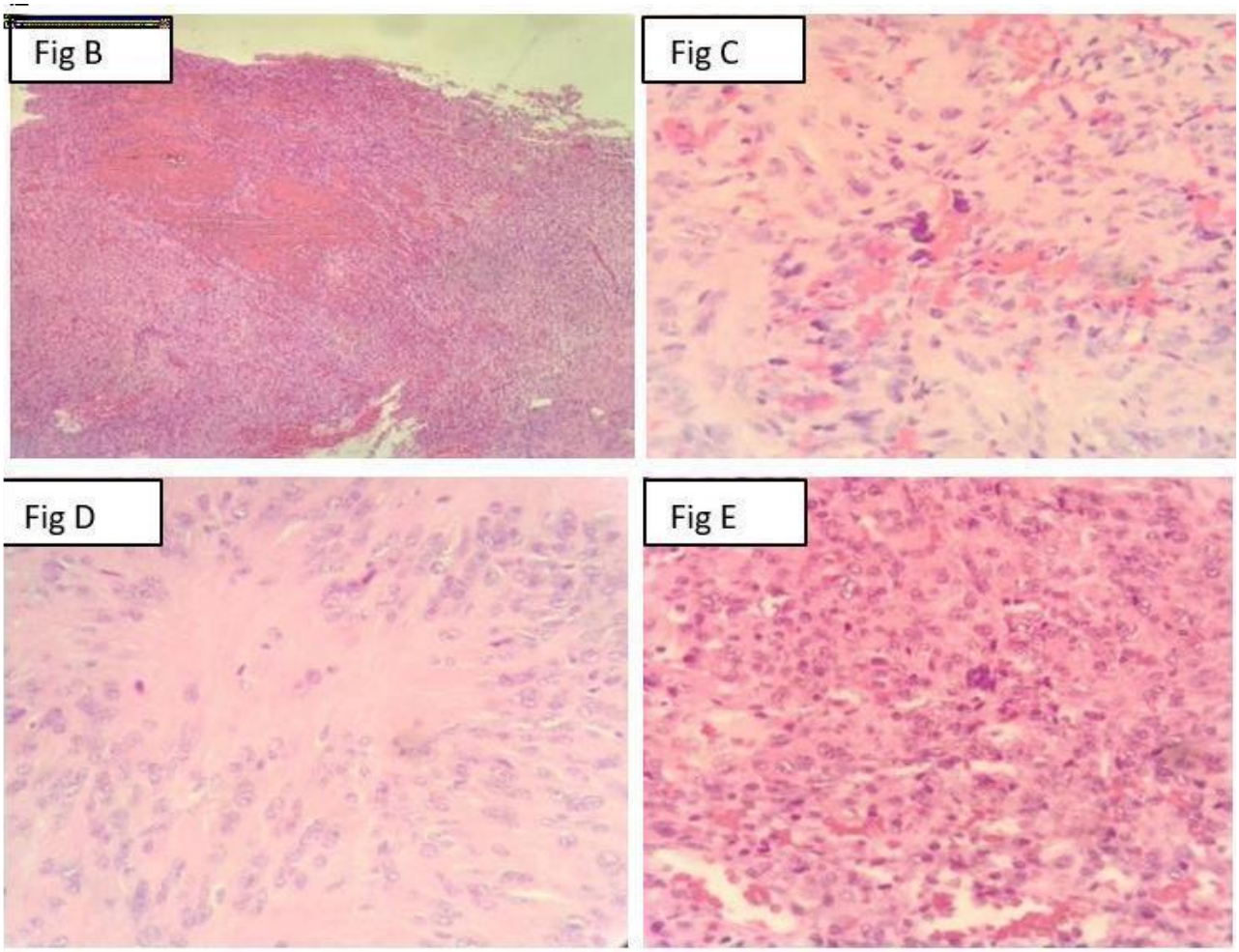
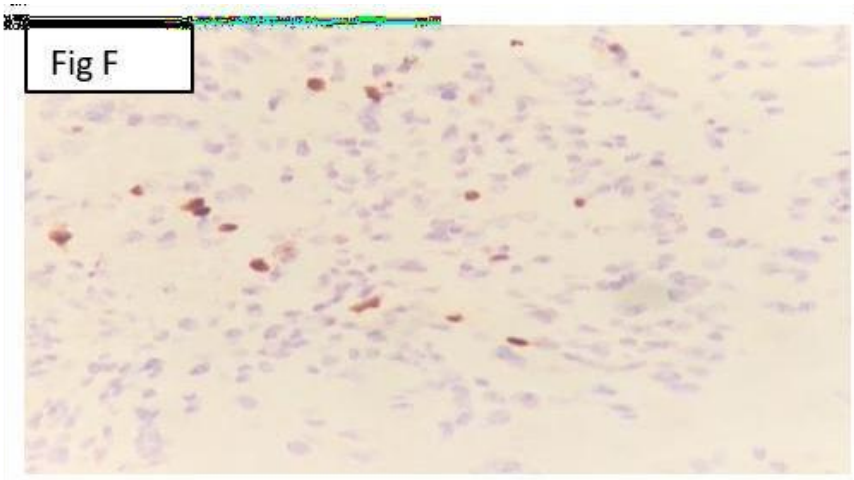


Figure A: Enlarged uterus of 28week size with 3 intramural fibroid- 15x15cm fundal, 7x7cm in posterior myometrium lower uterus, 3x3cm. Both ovaries and tubes were normal, no free fluid and no visible findings suggestive of malignancy.



FigA-4xH&Ecellulartumorwithhemorrhagic areas,FigB-40xH&Eshowingpleomorphic spindle cellswith hyperchromatic nucleus, Fig C- 40x H&E showing tumor cells with interspersed hyalinized stroma, Fig D- 40x H&E spindle to round cells interspersed with pleomorphic giant cells.



FigE-40xIHCshowingKi67lessthan4% ATRX- Retained in tumour cell.

4. Discussion

STUMP often presents with symptoms similar to benign leiomyoma.The age of onset is similar to that of leiomyoma and leiomyosarcoma and from the literature little is known regarding the risk factors that predisposes to STUMP. Pre-operative diagnosis is next to impossible and STUMP is diagnosed post operatively in histopathological examination.The current criteria for the histopathologic classification of smooth muscle tumors are based on the Stanford Criteria, and they are diagnosed by an assessment for abundant mitosis (10 per 10 HPFs), cellular atypia and presence of areas of coagulative tumor cell necrosis. STUMP has a combination of the above features, without fulfilling the

diagnosis of leiomyosarcoma. The recurrence rate for STUMP is 7.3% and 26% with overall rate of 11% [3].With 2 biopsy reports we adopted multidisciplinary approachoncosurgery opinion was taken where they had suggested total abdominal hysterectomy. The patient was not convinced to go for hysterectomy, rather she agreed to be on very close survillence. Opinion were sort from couple of practioners whose specialized in gynae oncosurgery. With every specialist opinion and patient and patients father's consent we decided to keep her on close survellience and not to go ahead with hysterectomy

5. Conclusion

The very purpose of reporting this case is to emphasize that STUMP mimicking leiomyosarcoma can affect a very young age girl. With premenopausal age, decision for hysterectomy is easy whereas in a young girl going ahead with hysterectomy is a crucial decision.No doubt it is a multidisciplinary approach with complete patient involvement who needs to be on regular close follow up [2].

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