Cureus
Part of SPRINGER NATURE

Open Access Case Report

Spontaneous Pregnancy Following Fertility-Sparing Excision of a Giant Uterine Smooth Muscle Tumor of Uncertain Malignant Potential: Longitudinal Follow-Up and Repeat Cesarean Section Findings

Review began 11/01/2026
Review ended 11/08/2026
Published 11/12/2026

© Copyright 2026
Abdelwahid et al. This is an open access article distributed under the terms of the Creative Commons Attribution License CC-BY 4.0., which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

DOI: 10.7759/cureus.119538

Awadalla Abdelwahid [1], Bashir Abdeen [2], Hajar Suliman [1], Aalaa Almuazel [3], Ibrahim Daoud [1, 4], Malaz Taglwy [5], Rana Fath Elrhman [6], Gawahir Murad Abdelrahman Alzein [7], Alla Abdelgader [8], Nesreen Elrashid [9], Aseel Alswairky [3], Dalia Omar [10], Mayada Amir Nawaf [11], Fatima Habib Allah Salama [12], Hwida Omer Elsharief [13], Thabit Mohamed [14]

1. Obstetrics and Gynecology, Al-Neelain University, Khartoum, SDN 2. Obstetrics and Gynecology, Omer Al Mukhtar General Hospital, Omer Mokhtar, LBY 3. Obstetrics and Gynecology, Specialized Medical Company Hospital (SMC1), Riyadh, SAU 4. Obstetrics and Gynecology, Batterjee Medical College, Aseer Campus, Khamis Mushait, SAU 5. Obstetrics and Gynecology, Wellness Experts Medical Center, Riyadh, SAU 6. Obstetrics and Gynecology, Dallah Namar Hospital, Riyadh, SAU 7. Obstetrics and Gynecology, Maternity and Children Hospital Alkharj, Alkharj, SAU 8. Obstetrics and Gynecology, Tadawi Hospital, Khamis Mushait, SAU 9. Obstetrics and Gynecology, College of Medicine and Health Science, Merowe University of Technology, Merowe, SDN 10. Obstetrics and Gynecology, Alsaedy Hospital, Al Jumom, SAU 11. Obstetrics and Gynecology, Qassim University Medical City, Qassim, SAU 12. Obstetrics and Gynecology, Adele Medical Clinics Complex, Riyadh, SAU 13. Obstetrics and Gynecology, Dr. Sulaiman Al Habib Hospital, Riyadh, SAU 14. Cardiology, Prince Sultan Cardiac Center, King Khalid Hospital, Najran, SAU

Corresponding author: Awadalla Abdelwahid, awad336@yahoo.com

Abstract

Uterine smooth muscle tumors of uncertain malignant potential (STUMPs) are rare mesenchymal neoplasms with unpredictable biologic behavior and unknown recurrence risk. Fertility-sparing management is challenging in reproductive-aged women who want to have future pregnancies. Little is known about subsequent reproductive outcomes or intraoperative uterine findings.

A 24-year-old Sudanese primigravida was delivered by elective cesarean section at Um al-Razam General Hospital, Libya, after antenatal diagnosis of a large heterogeneous pelvic mass (thought to be from the adnexa). Intraoperatively, a giant vascular pedunculated tumour arising from the posterior wall of the uterus was found. After delivery, the mass was excised, leaving the uterus intact, and histopathology confirmed STUMP; the size of the tumor removed was 20 × 10 × 7 cm. Recovery was uneventful. The patient conceived spontaneously within one year without assisted reproductive treatment. At 26 years of age, she was regularly followed up antenatally during her next pregnancy with no clinically or ultrasonographically reported evidence of recurrent disease. After counseling regarding delivery options, an elective repeat cesarean section was performed at 39 weeks at Omer Al Mukhtar General Hospital, Libya, with an adhesion-free operative field at repeat cesarean section, freely mobile uterus and macroscopically identifiable recurrence not seen. Healthy infant born without complications. Maternal recovery uneventful and two weeks postoperative examination satisfactory.

This case illustrates that spontaneous conception and term pregnancy are possible after fertility-sparing excision of giant uterine STUMP. Repeat cesarean findings provide important information on postoperative uterine anatomy and absence of recurrence; however, good obstetric outcomes and macroscopic reassurance do not exclude delayed tumor recurrence. Individualized surgery, multidisciplinary counseling, careful obstetric surveillance, and long-term oncological follow-up remain necessary.

Categories: Obstetrics/Gynecology, Pathology, Oncology
Keywords: cesarean delivery, fertility-sparing surgery, spontaneous pregnancy, stump, tumor recurrence, uterine smooth muscle tumor of uncertain malignant potential

Introduction

Uterine smooth muscle tumors of uncertain malignant potential (STUMP) are a rare and diagnostically difficult group of uterine mesenchymal neoplasms that cannot be unequivocally classified as benign leiomyomas or malignant leiomyosarcomas histopathologically. They are classified mainly on the basis of histopathological features (cytological atypia, mitotic activity, and coagulative tumor cell necrosis). Most STUMPs have an indolent clinical behavior, but their unpredictable biological potential (local recurrence/malignant transformation) makes treatment and long-term surveillance very uncertain [1,2]. This is especially important in women of reproductive age who want to preserve fertility. Hysterectomy has

How to cite this article
Abdelwahid A, Abdeen B, Suliman H, et al. (November 12, 2026) Spontaneous Pregnancy Following Fertility-Sparing Excision of a Giant Uterine Smooth Muscle Tumor of Uncertain Malignant Potential: Longitudinal Follow-Up and Repeat Cesarean Section Findings. Cureus 18(11): e119538. DOI 10.7759/cureus.119538

been considered the sole surgical option for women with STUMP after childbearing; fertility-sparing surgery (myomectomy or local tumor excision) has become a reasonable alternative in carefully selected patients after appropriate histopathological evaluation and multidisciplinary counseling [2,3]. A systematic review published in 2024 reported an overall recurrence rate of approximately 12% among patients with uterine STUMP [3], highlighting their unpredictable biological behavior and the importance of long-term postoperative surveillance. However, no standardized management strategy exists, particularly when reproductive goals must be reconciled with recurrence risk. Recent studies have shown encouraging results for reproductive outcomes after conservative surgical treatment. A 2025 systematic review of 327 patients showed that overall recurrence was not statistically different between myomectomy and hysterectomy (13.2% versus 9.5%; local STUMP recurrence was more common after myomectomy) [4]. In this study, among 103 women who desired pregnancy, 40 (38.8%) achieved at least one pregnancy, suggesting that fertility preservation may be feasible in selected patients. However, these findings do not establish that fertility-sparing management is associated with equivalent oncological outcomes [4]. Another multicenter retrospective study published in 2025 showed successful pregnancies following fertility-sparing management, but uterine recurrence and a small chance of malignant progression need individual counseling and follow-up [5]. Pregnancy following excision of a giant uterine STUMP has additional clinical challenges too. Extensive uterine surgery can affect myometrial integrity, influence timing and mode of delivery, and complicate interpretation of subsequent pelvic imaging. Moreover, it may be difficult to distinguish between postoperative changes in anatomy and recurrence during pregnancy. Recent publications have emphasized the need for multidisciplinary care, individualized reproductive planning and structured surveillance of women treated for STUMP with fertility preservation [6,7]. Longitudinal documentation of pregnancy outcomes, postoperative uterine changes, and direct surgical reassessment at subsequent cesarean delivery provides valuable clinical insights. Such observations may enhance our understanding of uterine healing, reproductive potential, and clinically apparent tumor recurrence following conservative excision of large uterine smooth muscle tumors.

We describe a case of spontaneous pregnancy after fertility-sparing excision of a giant uterine smooth muscle tumor with uncertain malignant potential (STUMP), longitudinal follow-up, and repeat cesarean findings. Our report aims to demonstrate the reproductive outcome after conservative surgery, uterine findings at subsequent time points, and implications for obstetric planning, postoperative surveillance, and fertility-preserving treatment in women with STUMP.

Case Presentation

The initial clinical presentation, surgical management, and histopathological diagnosis of this patient were previously reported [8]. Briefly, a 24-year-old Sudanese primigravida presented at term following an otherwise uncomplicated pregnancy. Third-trimester ultrasonography revealed a large heterogeneous left pelvic mass, initially suspected to be of adnexal origin (Figure *1*). The present report extends the previously published case by documenting subsequent spontaneous conception, longitudinal antenatal surveillance, successful term pregnancy, and intraoperative uterine findings at repeat cesarean delivery.



FIGURE 1: Third-trimester transabdominal ultrasound at 33 weeks of gestation showing a breech-presenting fetus and a heterogeneous left posterior pelvic mass measuring approximately 10 × 12 cm.

The yellow arrowhead indicates the pelvic mass, which was initially suspected to arise from the adnexa; uterine origin was established at surgery.

She had no pain, bleeding, or pressure symptoms. During elective cesarean delivery at Um al-Razam General Hospital, Libya, a large vascular pedunculated mass arising from the posterior wall of the uterus was unexpectedly found (Figure *2*). After delivery, adherent omentum was dissected, and the vascular pedicle was clamped, ligated, and divided. Macroscopic tumor excision preserved the uterus; recovery was uneventful. The initial presentation, intraoperative tumor excision, and original pathological diagnosis were previously reported [8].

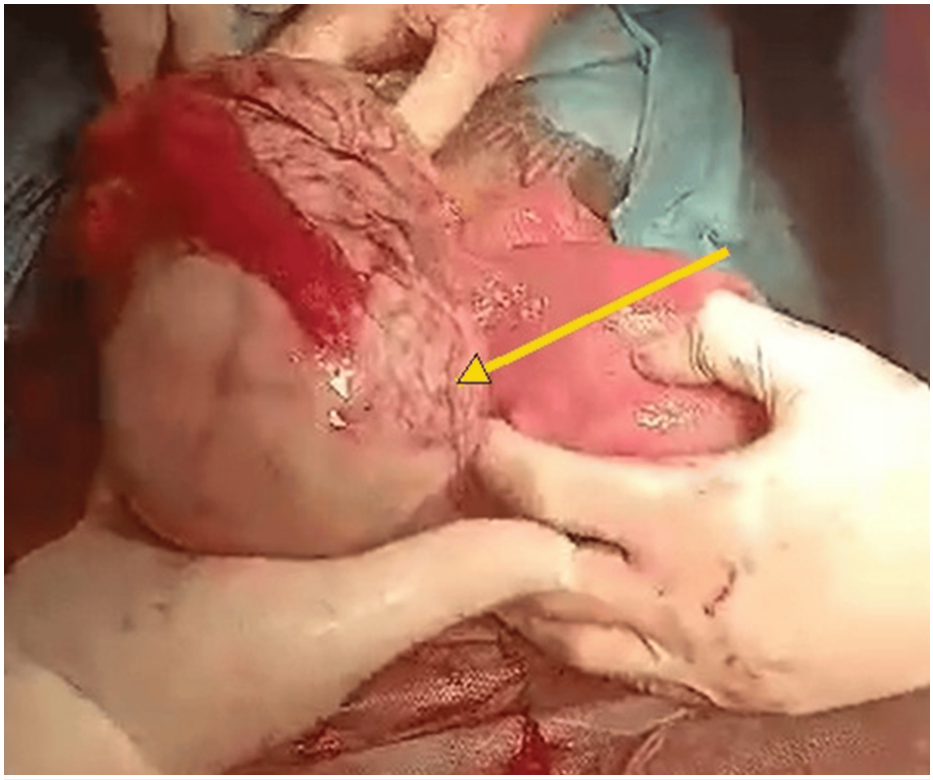


FIGURE 2: Initial intraoperative appearance of a giant posterior uterine mass during the first cesarean delivery.

Operative photograph showing the large vascular pedunculated tumor exposed during cesarean delivery. The yellow arrow indicates the visible mass. Its origin from the posterior uterine wall and its pedunculated attachment were documented in the original operative account [8].

Histopathological findings

The excised mass was 20 × 10 × 7 cm in size; well circumscribed, whitish, and focally cystic on sectioning (Figure *3*).

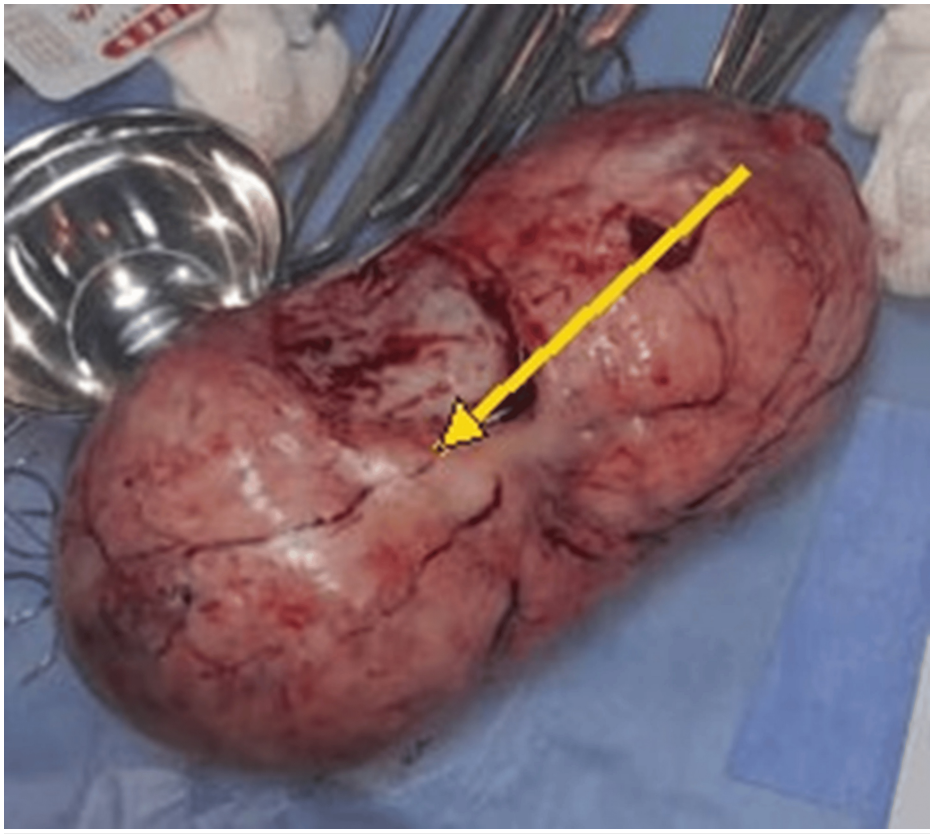


FIGURE 3: Gross appearance of the excised uterine smooth muscle tumor of uncertain malignant potential (STUMP).

Photograph showing the lobulated excised uterine mass, reported to measure 20 × 10 × 7 cm. The yellow arrow highlights the gross specimen. The diagnosis of STUMP was based on histopathological examination rather than macroscopic appearance alone.

The diagnosis of uterine STUMP was confirmed histopathologically, and an expert pathological review was performed. Histopathological examination revealed a spindle-cell smooth muscle neoplasm arranged predominantly in intersecting, sweeping, and whorled fascicles. The tumor cells exhibited moderate eosinophilic cytoplasm and elongated, blunt-ended nuclei, with focal nuclear enlargement, cytological atypia, and occasional pleomorphic or hyperchromatic nuclei. The original pathological assessment reported one mitotic figure per 10 high-power fields. Expert histopathological review confirmed the diagnosis of uterine STUMP. The surrounding fibrofatty tissue was unremarkable. Continued clinical and imaging surveillance was recommended because of the tumor's uncertain biological behavior (Figure *4*).

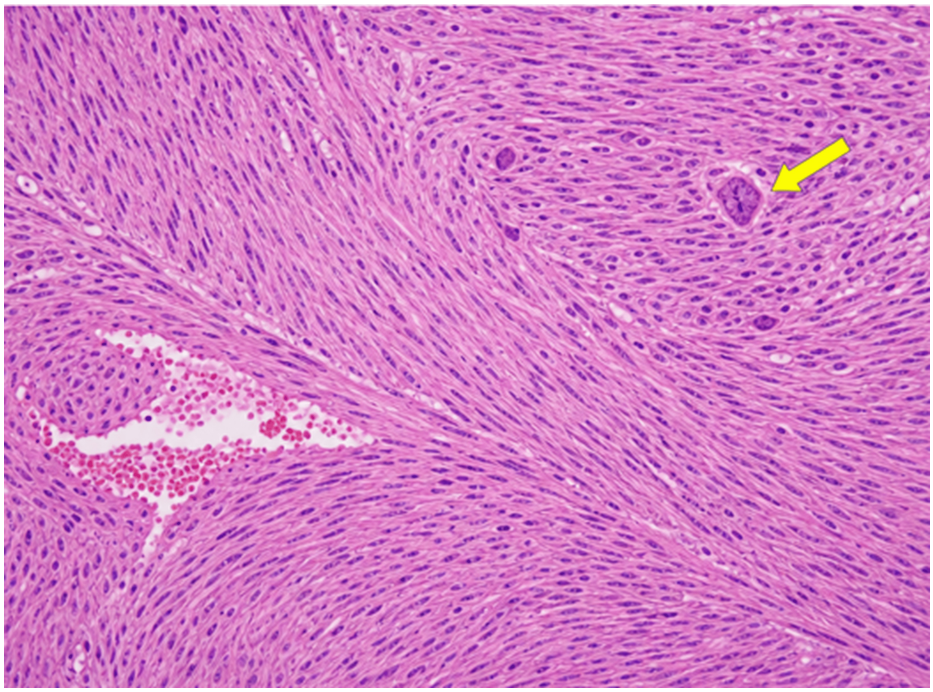


FIGURE 4: Histopathological features of uterine smooth muscle tumor of uncertain malignant potential (STUMP).

Representative hematoxylin and eosin (H&E)-stained section of a uterine smooth-muscle tumor showing intersecting fascicles of spindle-shaped smooth-muscle cells with eosinophilic cytoplasm and variable nuclear atypia. The yellow arrow highlights a conspicuous atypical smooth-muscle cell/possible mitotic figure. The diagnosis of STUMP requires correlation with the degree of cytologic atypia, mitotic activity, and presence or absence of coagulative tumor-cell necrosis.

At age 26, she presented with a spontaneous pregnancy within one year after the first delivery without fertility treatment. She was clinically well throughout antenatal follow-up. Maternal vital signs, body mass index, and routine antenatal laboratory investigations are summarized in Table *1*, together with measurement units and reference intervals.

Parameter	Result	Reference value/range
Maternal vital signs and anthropometry		
Blood pressure (BP)	112/70 mmHg	Approximately 95–136/55–86 mmHg
Heart rate (HR)	86 beats/min	Approximately 63–115 beats/min across pregnancy
Respiratory rate (RR)	16 breaths/min	9–22 breaths/min
Body temperature	36.7 °C	Approximately 35.3–37.5 °C
Oxygen saturation (SpO_2)	98%	Approximately 93–99%
Body mass index (BMI)	24.0 kg/m²	18.5–24.9 kg/m² (pre-pregnancy adult classification)
Complete blood count		
Hemoglobin (Hb)	11.8 g/dL	10.2–13.0 g/dL
Hematocrit (Hct)	35%	29–42%
White blood cell count (WBC)	9.2 × 10^9/L	6.3–13.6 × 10^9/L
Platelet count (PLT)	245 × 10^9/L	166–386 × 10^9/L
Mean corpuscular volume (MCV)	88 fL	81–98 fL
Renal function and electrolytes		
Serum creatinine	51 µmol/L	39–65 µmol/L
Blood urea	3.0 mmol/L	1.9–4.4 mmol/L
Sodium (Na^+)	138 mmol/L	135–144 mmol/L
Potassium (K^+)	4.5 mmol/L	4.0–5.4 mmol/L
Routine antenatal screening		
Urine protein	Negative	Negative
Urine culture	No significant growth	No significant growth
Hepatitis B surface antigen (HBsAg)	Nonreactive	Nonreactive
Human immunodeficiency virus (HIV) screening	Nonreactive	Nonreactive
Syphilis screening	Nonreactive	Nonreactive

TABLE 1: Maternal vital signs, body mass index, and routine laboratory investigations during pregnancy.

BP, blood pressure; HR, heart rate; RR, respiratory rate; SpO_2, peripheral oxygen saturation; BMI, body mass index; Hb, hemoglobin; Hct, hematocrit; WBC, white blood cell count; PLT, platelet count; MCV, mean corpuscular volume; Na^+, sodium; K^+, potassium; HBsAg, hepatitis B surface antigen; HIV, human immunodeficiency virus; mmHg, millimeters of mercury; kg/m², kilograms per square meter; g/dL, grams per deciliter; fL, femtoliters; µmol/L, micromoles per liter; mmol/L, millimoles per liter.

Reference intervals are illustrative and predominantly second-trimester values; use laboratory-specific, gestation-appropriate intervals where available. BMI reference refers to pre-pregnancy adult classification.

First-, second-, and third-trimester scans were reported as reassuring; fetal development satisfactory and no uterine or pelvic mass suspicious for recurrence on available ultrasound (Figures 5-7).

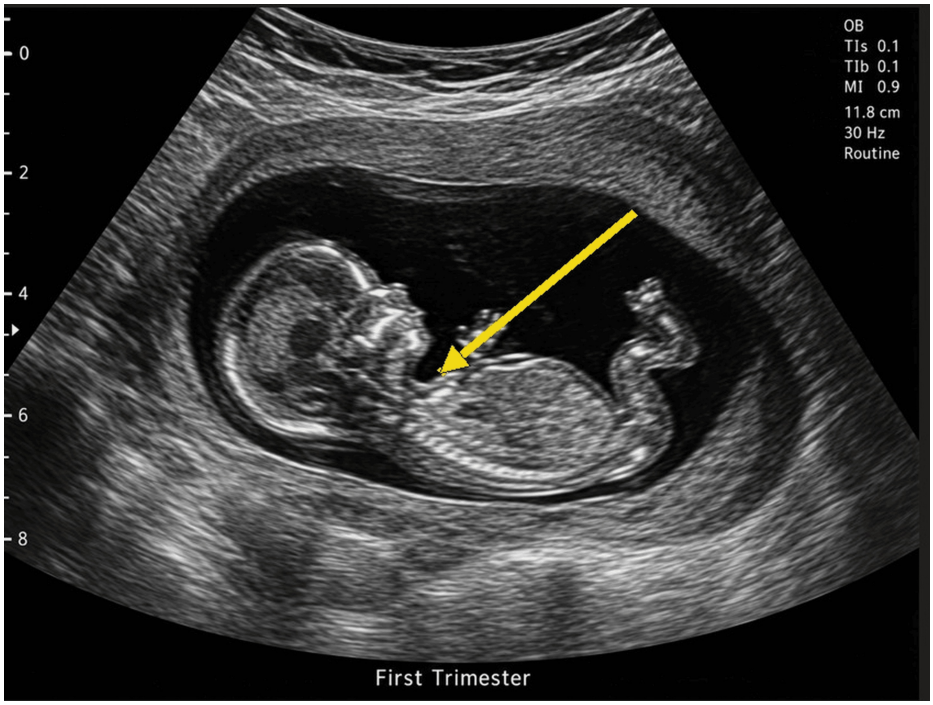


FIGURE 5: First-trimester ultrasound illustrating early fetal development during the subsequent pregnancy.

Ultrasound image labelled as first trimester, depicting a fetus within the gestational sac. The yellow arrow identifies a visible fetal structure.

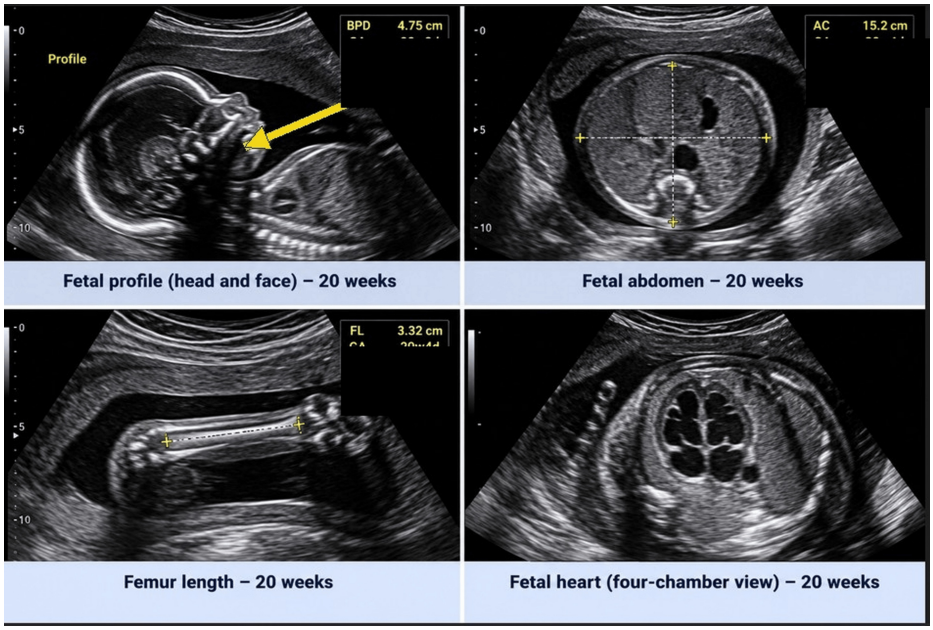


FIGURE 6: Second-trimester ultrasound composite illustrating fetal anatomy and biometric assessment.

Four-panel sonographic composite showing the fetal profile (upper left), abdominal circumference (upper right), femur length (lower left), and four-chamber cardiac view (lower right). The yellow arrow indicates the fetal profile.

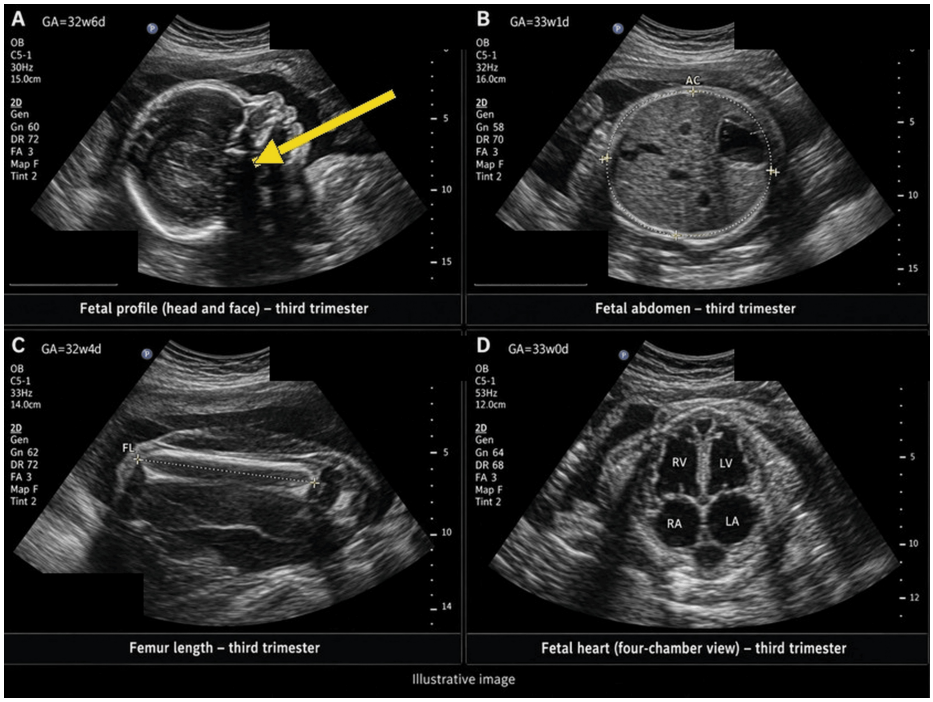


FIGURE 7: Third-trimester ultrasound composite illustrating fetal growth and anatomical assessment.

Four-panel sonographic composite showing fetal head/profile, abdominal circumference, femur length, and the four-chamber cardiac view. The yellow arrow identifies the fetal head/profile in panel A.

Repeat cesarean and intraoperative findings

After counseling on vaginal birth after cesarean section, the patient elected elective repeat cesarean delivery at 39 weeks in Omer Al Mukhtar General Hospital, Libya. The operative report stated that the uterus was freely mobile with no adhesions visible or macroscopically apparent recurrent mass when accessible surfaces and previous attachment area were inspected (Figures *8*-*9*). A live-born infant was delivered without reported surgical complications. No further tumor excision was required.

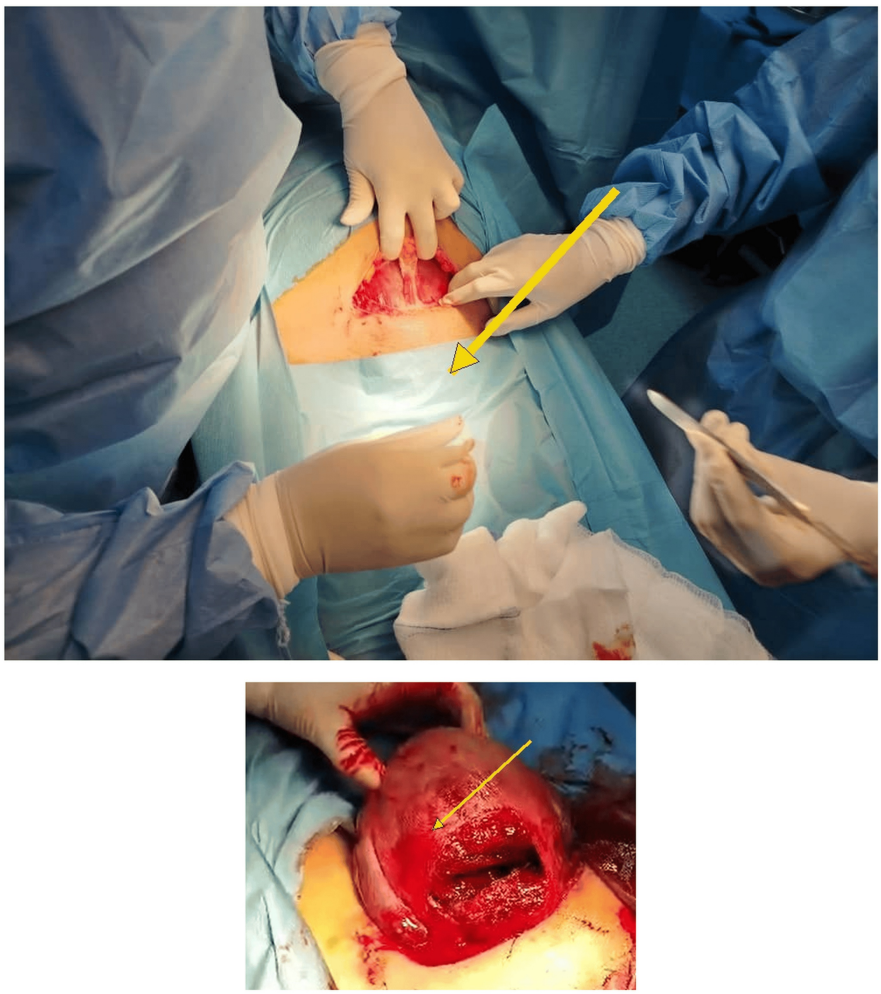


FIGURE 8: Intraoperative findings during repeat cesarean delivery.

Two photographs obtained at 39 weeks' gestation. The upper panel demonstrates an adhesion-free operative field, while the lower panel shows the uterine incision following fetal delivery. Yellow arrows highlight these findings, illustrating satisfactory uterine anatomy following fertility-sparing excision of a giant uterine smooth muscle tumor of uncertain malignant potential (STUMP).

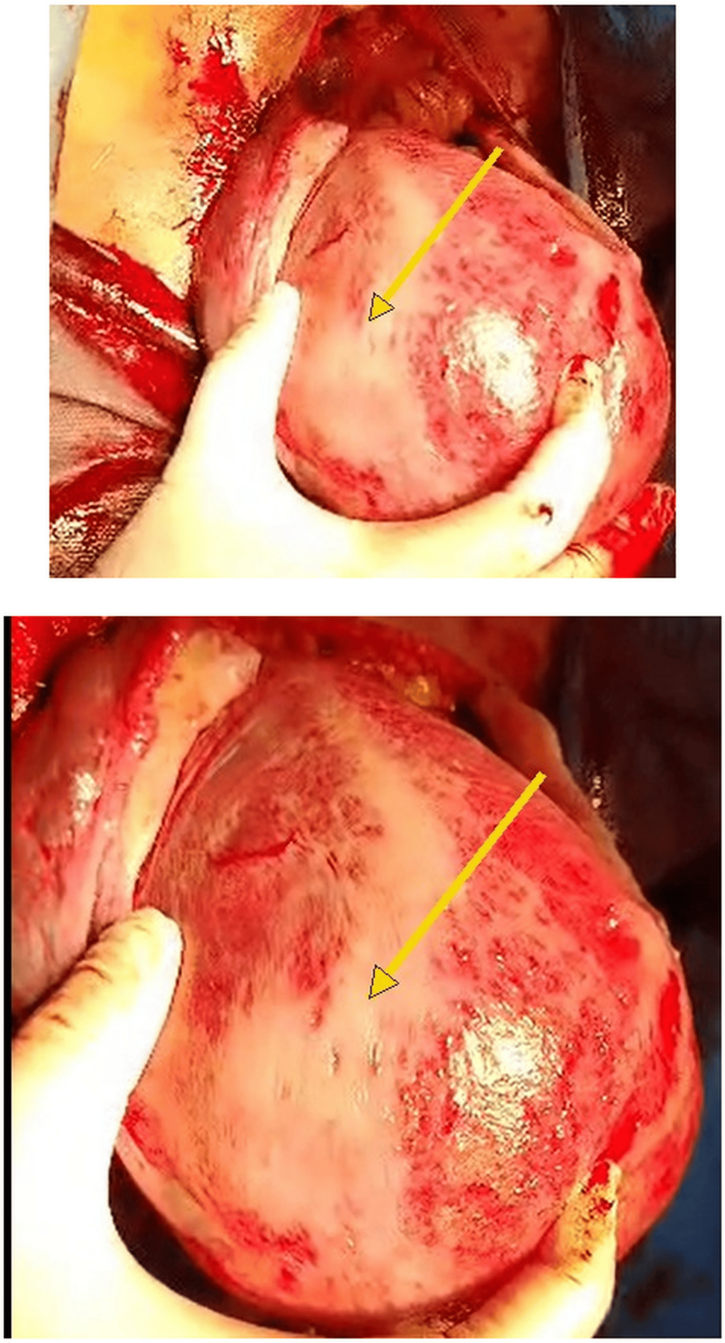


FIGURE 9: Posterior uterine surface and reported previous tumor attachment region at surgical inspection.

Two supplied operative photographs displaying exposed tissue surfaces, reportedly corresponding to the posterior uterine wall and prior tumor-pedicle area. The yellow arrows indicate the regions of interest. No macroscopically evident recurrence was reported at repeat surgery; these images cannot exclude microscopic or future recurrence.

Postoperative course and follow-up

The patient underwent fertility-sparing excision of a giant uterine STUMP during her first cesarean delivery at 24 years of age, with histopathological confirmation of the diagnosis. Spontaneous conception occurred within one year of the initial surgery, without assisted reproductive treatment. Serial ultrasound examinations throughout all three trimesters demonstrated reassuring fetal development without evidence of clinically apparent tumor recurrence. Elective repeat cesarean delivery was performed at 39 weeks,

revealing an adhesion-free operative field and no macroscopically visible recurrent tumor.

Postoperative assessments at two and six weeks were reassuring; however, this relatively short follow-up cannot exclude microscopic disease or delayed recurrence. Long-term STUMP surveillance will continue through regular clinical evaluations and pelvic imaging, with individualized gynecologic oncology follow-up to monitor for potential recurrence. Also, at six weeks, normal pelvic ultrasound and chest X-ray. Surveillance was recommended because of the uncertain recurrence potential of STUMP: assessment at three to six months postpartum and then every six months for five years.

Discussion

The present case shows long-term evidence of normal reproductive function after conservative resection of a giant uterine STUMP during cesarean delivery. Its main contribution is that, beyond the initial diagnosis and surgery described in our previous paper [8], it describes spontaneous conception, an uncomplicated antenatal course, successful term delivery, and direct intraoperative assessment of the uterus. That there was no macroscopically visible recurrent lesion at repeat cesarean section gives short-term clinical reassurance but cannot establish oncological remission.

Fertility preservation and reproductive outcomes

Fertility preservation in women with STUMP needs to be individualized based on reproductive potential, tumor characteristics, and uncertain long-term oncological risks (conservative excision leaves the possibility of future pregnancy but also concerns about local recurrence and subsequent surgery). Zhang et al. showed heterogeneity in clinical outcomes after diagnosis of STUMP, and individual postoperative management was needed [9]. A 2021 investigation of clinical and reproductive outcomes found successful childbirth after myomectomy; so uterine preservation in selected women is possible [10].

The reproductive outcome in this case is unique because spontaneous pregnancy occurred after excision of a large pedunculated uterine tumor (20 × 10 × 7 cm). The location and accessibility of the lesion allowed removal without hysterectomy so that the patient's fertility was not compromised. But successful pregnancy should not be used as evidence that size alone does not matter for fertility or oncological prognosis: extent of myometrial involvement, completeness of excision, and histopathological type remain important factors.

Further support for conservative management comes from a 2023 study of 46 women who underwent fertility-preserving procedures after STUMP diagnosis [11]. Twenty-two pregnancies occurred in 17 women (18 deliveries; 17 cesarean and one vaginal birth) [11]. These results show that meaningful reproductive outcomes can be achieved after uterine conservation, but retrospective study designs, heterogeneous surgical approaches, and small populations make these conclusions uncertain.

Histopathological uncertainty and risk stratification

The main problem in the management of STUMP is that conventional histopathology cannot predict which tumor will behave as such: cytological atypia, mitotic activity, and coagulative tumor cell necrosis are still diagnostic criteria, but overlap exists between borderline smooth muscle neoplasms. Borella et al. reported recurrence in 87 patients (20.7%), with 11 leiomyosarcomas diagnosed among recurrences in a multicenter retrospective cohort study. Tumor fragmentation, increased mitotic activity, and epithelioid morphology were associated with adverse outcomes, highlighting the importance of accurate histopathological evaluation and appropriate surgical techniques [12].

A later retrospective series showed that diagnostic agreement was not improved after pathological review (only 77.3% agreement among cases initially considered for STUMP classification) [13]. These observations emphasize the need for expert gynecological pathology review when diagnosis is relevant for fertility preservation and long-term surveillance. Immunohistochemistry may add information, but no single biomarker establishes the biological behaviour of every tumor.

Accurate histopathological assessment is essential for the diagnosis and management of uterine STUMP. In the present case, expert pathological review of the original histological material confirmed the diagnosis of STUMP. Microscopic examination demonstrated a spindle-cell smooth muscle neoplasm arranged in intersecting and whorled fascicles, with eosinophilic cytoplasm, elongated blunt-ended nuclei, focal cytological atypia, and occasional pleomorphic or hyperchromatic nuclei. The original pathological assessment reported one mitotic figure per 10 high-power fields. Although the diagnosis was confirmed, the unpredictable biological behavior of STUMP makes individual prognostic assessment challenging. Accordingly, continued clinical surveillance and long-term imaging follow-up remain essential, particularly following fertility-sparing surgery.

Antenatal surveillance and obstetric considerations

Pregnancy after fertility-sparing excision of a giant uterine tumor raises two related clinical issues: integrity of the uterus and detection of disease recurrence. Previous uterine surgery may have changed myometrial

architecture; obstetric implications depend on depth and location of original dissection (a pedunculated lesion attached to posterior uterine surface has a different anatomical risk profile than a deeply intramural tumor for which extensive myometrial reconstruction is needed).

In this case, antenatal ultrasound was reassuring, and no uterine or pelvic mass suspicious for recurrence was found. However, pregnancy-related anatomical and physiological changes may reduce the sensitivity of ultrasonography for small lesions. Ultrasound comparative studies have shown that benign leiomyomas, STUMPs, and leiomyosarcomas share imaging characteristics, so imaging alone cannot be used to characterize all uterine smooth muscle tumors [14]. More recent diagnostic research has looked at integrated clinical and ultrasound risk stratification models, but these are mainly designed for preoperative lesion assessment rather than surveillance after STUMP excision [15].

Patient's preference for elective repeat cesarean delivery after counseling was therefore clinically appropriate. However, the information does not show that previous STUMP excision required cesarean birth independently; delivery planning should take into account the previous scar from cesarean section, original tumour attachment site, depth of uterine dissection, and informed preferences of the patient.

Interpretation of repeat cesarean results

The main benefit of this case is that we were able to directly re-examine the uterus in a subsequent pregnancy macroscopically. Intraoperatively, the uterus was freely mobile without adhesions or recurrence of mass at the tumor attachment site as previously noted. This indicates good anatomical recovery after pedicle excision and provides clinically relevant information about whether repeat obstetric surgery can be done.

However, several caveats limit their oncological interpretation. Macroscopic assessment cannot exclude microscopic disease, and the absence of a lesion on one operation does not mean long-term recurrence-free survival. However, several limitations warrant cautious oncological interpretation of these findings. Macroscopic assessment cannot exclude microscopic residual disease, and the absence of a visible lesion at a single surgical examination does not establish long-term recurrence-free survival. Helvacioglu et al. reported variable postoperative outcomes in a case series of 25 patients, underscoring the need for sustained follow-up rather than reliance on early postoperative findings alone [16]. Other clinicopathological studies have shown that when evaluating patients with STUMP surgical findings, pathological review and immunohistochemical characteristics should all be considered [17].

More recent case reports have also shown the diagnostic heterogeneity of STUMP (it can be similar to conventional leiomyoma or other pelvic neoplasms too). El Hassouni et al. showed that it is difficult to diagnose before histology is available, and Jena et al. showed how different pathological interpretations may change subsequent management [18,19]. These observations reinforce the need for reassurance from intraoperative findings not to be confused with the absence of residual or recurrent disease.

Recurrence risk and long-term surveillance

The long-term biology of STUMP is the major unanswered question after fertility-preserving surgery. Many patients do well, but recurrence occurs after long intervals (sometimes as leiomyosarcoma), and local and pulmonary disease may occur. Atay et al. reported recurrence in six of 27 patients (22.2%), with local and pulmonary involvement and a median time to recurrence of 36 months [20].

Chan et al. reported three recurrences in 27 patients with follow-up (all leiomyosarcoma) with a mean interval of 7.6 years before recurrence [21]. These results are especially important because they show why an apparently disease-free period between pregnancies cannot be equated to cure. Recurrence rates vary widely according to pathology heterogeneity, patient selection, surgical techniques, follow-up duration and definitions of recurrence [4].

Surveillance should therefore not end with immediate postpartum. Individualized strategies incorporating clinical assessment, pelvic imaging, symptom review and specialist gynecological oncology review are needed. The frequency of imaging and duration of surveillance is unknown, but surveillance should be guided by the original pathology, surgical findings and clinical situation at that time (in this case reassuring ultrasound and operative findings were encouraging but follow-up beyond six weeks post op is required to assess longer-term outcomes).

Clinical relevance and limitations

The experience reported here is clinically relevant because giant uterine STUMP may be discovered unexpectedly during obstetric surgery when uterus preservation has to be balanced against the need for safe tumour removal. A giant STUMP case previously reported showed similar difficulty with preoperative diagnosis and management in young women [22]. More recent observational evidence has shown that individualized surgery and continued surveillance are needed even though early results appear favorable [23]. A 2026 case report also shows continuing diagnostic challenges of these rare tumors [24].

There are several limitations to this report. First, it is a single-patient study, so we cannot say whether conservative excision is safer than removal or whether recurrence risk can be quantified. Second, the original pathological material needs to be reconciled with previously published histological descriptions. Third, follow-up is not standardized, with no longitudinal oncological imaging protocol or histological reassessment of the original attachment site. Fourth, no longer postpartum surveillance precludes conclusions about sustained disease control.

The case, however, brings a unique longitudinal observation to the literature: spontaneous conception and term delivery after excision of a giant posterior uterine STUMP, and direct visual reassessment of the uterus at repeat cesarean section. These results confirm the reproductive feasibility of conservative treatment in some patients but underscore the need for pathological certainty, individualized obstetric planning, and extended oncological surveillance.

Conclusions

This case demonstrates that spontaneous conception and successful term pregnancy are possible after fertility-sparing excision of a giant uterine smooth muscle tumor of uncertain malignant potential (STUMP). At repeat cesarean delivery, the uterus was freely mobile, with no significant adhesions or macroscopically apparent tumor recurrence. These findings are encouraging but cannot exclude microscopic disease or recurrence after a longer interval. Individualized surgical and reproductive counseling, accurate histopathological assessment, multidisciplinary care, and prolonged clinical and imaging surveillance remain essential. Further studies are needed to define long-term reproductive outcomes, recurrence predictors, and optimal follow-up strategies following conservative management of uterine STUMP.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Awadalla Abdelwahid, Bashir Abdeen, Hajar Suliman, Aalaa Almuazel, Ibrahim Daoud, Malaz Taglwy, Rana Fath Elrhman, Gawahir Murad Abdelrahman Alzein, Alla Abdelgader, Nesreen Elrashid, Aseel Alswairky, Dalia Omar, Mayada Amir Nawaf, Fatima Habib Allah Salama, Hwida Omer Elsharief, Thabit Mohamed

Acquisition, analysis, or interpretation of data: Awadalla Abdelwahid, Bashir Abdeen, Hajar Suliman, Aalaa Almuazel, Ibrahim Daoud, Malaz Taglwy, Rana Fath Elrhman, Gawahir Murad Abdelrahman Alzein, Alla Abdelgader, Nesreen Elrashid, Aseel Alswairky, Dalia Omar, Mayada Amir Nawaf, Fatima Habib Allah Salama, Hwida Omer Elsharief, Thabit Mohamed

Drafting of the manuscript: Awadalla Abdelwahid, Bashir Abdeen, Hajar Suliman, Aalaa Almuazel, Ibrahim Daoud, Malaz Taglwy, Rana Fath Elrhman, Gawahir Murad Abdelrahman Alzein, Alla Abdelgader, Nesreen Elrashid, Aseel Alswairky, Dalia Omar, Mayada Amir Nawaf, Fatima Habib Allah Salama, Hwida Omer Elsharief, Thabit Mohamed

Critical review of the manuscript for important intellectual content: Awadalla Abdelwahid, Bashir Abdeen, Hajar Suliman, Aalaa Almuazel, Ibrahim Daoud, Malaz Taglwy, Rana Fath Elrhman, Gawahir Murad Abdelrahman Alzein, Alla Abdelgader, Nesreen Elrashid, Aseel Alswairky, Dalia Omar, Mayada Amir Nawaf, Fatima Habib Allah Salama, Hwida Omer Elsharief, Thabit Mohamed

Supervision: Awadalla Abdelwahid, Bashir Abdeen, Hajar Suliman, Aalaa Almuazel, Ibrahim Daoud, Malaz Taglwy, Rana Fath Elrhman, Gawahir Murad Abdelrahman Alzein, Alla Abdelgader, Nesreen Elrashid, Aseel Alswairky, Dalia Omar, Mayada Amir Nawaf, Fatima Habib Allah Salama, Hwida Omer Elsharief, Thabit Mohamed

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. Omer Al Mukhtar General Hospital Institutional Ethics Committee issued approval 305170, dated January 29, 2026. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References

1. Liu HT, Wong CN, Wong CN, Liu FS: Uterine smooth muscle tumor of uncertain malignant potential: a review of current knowledge. Taiwan J Obstet Gynecol. 2022, 61:935-40. 10.1016/j.tjog.2022.08.003
2. Tinelli A, D'Oria O, Civino E, et al.: Smooth muscle tumor of uncertain malignant potential (STUMP): a comprehensive multidisciplinary update. Medicina (Kaunas). 2023, 59:10.3390/medicina59081371
3. Bucuri CE, Ciortea R, Malutan AM, et al.: Smooth muscle tumor of uncertain malignant potential (STUMP): a systematic review of the literature in the last 20 years. Curr Oncol. 2024, 31:5242-54. 10.3390/curroncol31090388
4. Bogani G, Croce S, Scambia G, Froyman W, Raspagliesi F, Amant F: Fertility-sparing approach for uterine smooth muscle tumors of uncertain malignant potential. Int J Gynecol Cancer. 2025, 35:101822. 10.1016/j.ijgc.2025.101822
5. Leone Roberti Maggiore U, Fanfani F, Scambia G, et al.: Uterine smooth muscle tumours with uncertain malignant potential: reproductive and clinical outcomes in patients undergoing fertility-sparing management. Hum Reprod Open. 2025, 2025:hoaf009. 10.1093/hropen/hoaf009
6. Medhavi KK, Bose S, Konar L, Meena P: Fertility-sparing management of uterine smooth muscle tumour of uncertain malignant potential: a case report. J Hum Reprod Sci. 2025, 18:181-4. 10.4103/jhrs.jhrs_75_25
7. Tung-Mabry ME, Warring SK, Schoolmeester JK, Shahi M, VanBuren WM, Bakkum-Gamez JN: Fertility preservation in the setting of a new uterine smooth muscle tumor of uncertain malignant potential (STUMP) diagnosis. Gynecol Oncol Rep. 2025, 62:101975. 10.1016/j.gore.2025.101975
8. Abdeen B, Abdelwahid A, Suliman H, Elfadel NM, Elrasheed FE, Gurashi A: Smooth muscle tumor of uncertain malignant potential (STUMP) in pregnancy: a case report from Omar Al Mukhtar General Hospital, Libya. Clin Res Clin Trials. 2026, 15:312. 10.31579/2693-4779/312
9. Zhang C, Gao J, Lu S, Zhang Y, Zhu H: Uterine smooth muscle tumors of uncertain malignant potential (STUMP): a retrospective study in a single center. Eur J Obstet Gynecol Reprod Biol. 2021, 265:74-9. 10.1016/j.ejogrb.2021.08.010
10. Ning C, Zhang L, Zhao C, Chen X, Liu X, Gu C: Clinical and reproductive outcomes of uterine smooth muscle tumor of uncertain malignant potential: a single-center retrospective study. J Int Med Res. 2021, 49:3000605211008065. 10.1177/03000605211008065
11. Richtarova A, Boudova B, Dundr P, et al.: Uterine smooth muscle tumors with uncertain malignant potential: analysis following fertility-saving procedures. Int J Gynecol Cancer. 2023, 33:701-6. 10.1136/ijgc-2022-004038
12. Borella F, Cosma S, Ferraioli D, et al.: Clinical and histopathological predictors of recurrence in uterine smooth muscle tumor of uncertain malignant potential (STUMP): a multicenter retrospective cohort study of tertiary centers. Ann Surg Oncol. 2022, 29:8302-14. 10.1245/s10434-022-12353-y
13. Liu L, Xiao Z, Li Z, Zheng J, Xu X, Zhou H: Uterine smooth muscle tumors of uncertain malignant potential: a 13-year retrospective study. Front Oncol. 2024, 14:1458968. 10.3389/fonc.2024.1458968
14. Borella F, Mancarella M, Preti M, et al.: Uterine smooth muscle tumors: a multicenter, retrospective, comparative study of clinical and ultrasound features. Int J Gynecol Cancer. 2024, 34:244-50. 10.1136/ijgc-2023-004880
15. Ciccarone F, Biscione A, Robba E, et al.: A clinical ultrasound algorithm to identify uterine sarcoma and smooth muscle tumors of uncertain malignant potential in patients with myometrial lesions: the MYometrial Lesion UltrasouNd And mRi study. Am J Obstet Gynecol. 2025, 232:108.e1-108.e22. 10.1016/j.ajog.2024.07.027
16. Helvacioglu C, Eroğlu M, Yalçınkaya C, Topal CS, Akgul IA, Cimenli S, Kale İ: Smooth muscle tumor of uncertain malignant potential (STUMP): a case-based analysis. Ginekol Pol. 2024, 95:590-5. 10.5603/GP.a2023.0005
17. Akbarzadeh-Jahromi M, Todarbary N, Aslani FS, Najib F, Amirmoezi F: Uterine smooth muscle tumors of uncertain malignant potential: a retrospective evaluation of clinical pathology and immunohistochemistry features. Surg Exp Pathol. 2024, 7:10.1186/s42047-024-00145-5
18. El Hassouni F, Tligui S, Lakhdissi A, Rouas L, El Youssfi M: Uterine smooth muscle tumors of uncertain malignant potential (STUMP): A case report. Int J Surg Case Rep. 2024, 118:109607. 10.1016/j.ijscr.2024.109607
19. Jena S, Sinha NK, Mishra M, Singh V, Kumar Upadhyay A: Uterine smooth muscle tumor of undetermined malignant potential (STUMP): a diagnostic challenge. Cureus. 2024, 16:e73115. 10.7759/cureus.73115
20. Atay AO, Serin G, Akdemir A, Akman L, Terek MC, Zekioglu O, Cirpan T: Uterine smooth muscle tumors of uncertain malignant potential (STUMP): clinical course and follow-up outcomes after surgery. J Obstet Gynaecol Res. 2026, 52:e70251. 10.1111/jog.70251
21. Chan AH, Chan KK, Ip PP, Tse KY: Management and outcomes of uterine smooth muscle tumour of uncertain malignant potential (STUMP). Cancer Med. 2026, 15:e72096. 10.1002/cam4.72096
22. Incognito GG, D'Urso G, Incognito D, Lello C, Miceli A, Palumbo M: Management of a giant uterine smooth muscle tumor of uncertain malignant potential in a 32-year-old woman: case report and review of the literature. Minerva Obstet Gynecol. 2022, 74:466-70. 10.23736/S2724-606X.22.05126-0
23. Maciejewska O, Leśniak E, Jabłoński F, Bieńkiewicz J, Romanowicz H, Malinowski A, Wilczynski M: Clinical characteristics, surgical management, and outcomes of uterine smooth muscle tumours of uncertain malignant potential: a single-centre experience. Prz Menopauzalny. 2026, 25:19-23. 10.5114/pm.2026.161236
24. Chen X, Chen F, Ding Y, Xu W, Huo X, Meng X: Uterine smooth muscle tumor of uncertain malignant potential: a case report. Front Oncol. 2026, 16:1826552. 10.3389/fonc.2026.1826552