Successful Pregnancy After Conservative Management of Endometrial Cancer in the Young: A Case Report

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ABSTRACT

Endometrial carcinoma is the third most frequent gynecologic malignancy in the Philippines, with its peak incidence in perimenopausal and postmenopausal women. Nevertheless, 2.1% to 14.4% of occurrences of endometrial carcinoma are in women of reproductive age. Established risk factors include nulliparity, anovulation, obesity, diabetes mellitus, infertility, and PCOS. In the last 30 years, an increasing number of cases of endometrial cancer in young women worldwide have been reported. There are no local research studies in the Philippines regarding long-term oncologic and fertility outcomes, recurrence rates, and proper conservative management in such a limited group of patients. This case adds to the increasing evidence for fertility-sparing treatment in Gynecologic Oncology.

This case report discusses a 26-year-old nulligravid who presented with abnormal uterine bleeding. Diagnostic hysteroscopy, surgical, polypectomy revealed a well-differentiated endometrioid adenocarcinoma in a background of endometrial hyperplasia with atypia, leading to a diagnosis of Stage IA Endometrioid Endometrial Carcinoma. She was started on Megestrol Acetate and was kept under close surveillance with Hysteroscopy and Endometrial biopsies every three months. After six months of progesterone therapy, remission was confirmed with benign histologic findings. A Reproductive Medicine specialist has also been on board in her management, given her longstanding desire to conceive, to which she eventually achieved pregnancy after one cycle of Letrozole. She delivered a term, birth, living boy via Low Segment Cesarean Section without fetomaternal complications. On postpartum, she was maintained on Levonorgestrel Intrauterine System to help maintain remission and was advised to complete her desired childbearing before considering a definitive hysterectomy.

This case shows that conservative hormonal therapy with fertility treatment may be an option to achieve successful oncologic and reproductive outcomes in carefully selected cases. It advocates the significance of a personal approach to care, strict monitoring, and interdisciplinary coordination. Further research is needed to establish standardized protocols for managing young women with endometrial cancer in low-resource settings.

Key words: Endometrial carcinoma, fertility preservation, young women, Megestrol Acetate, Letrozole, Levonorgestrel IUS, conservative management, Gynecologic Oncology.

Endometrial carcinoma is the most common gynecological cancer that mainly affects perimenopausal and postmenopausal women. Over 90% of cases are diagnosed after age 50, with a median age of 63, however, it occurs rarely among younger women of reproductive age representing 2.1% to 14.4% of cases, with roughly 5% affecting those 40 years or younger. The established risk factors for this condition include nulliparity, infertility and irregular menstruation together with diabetes and polycystic ovarian syndrome yet recent studies indicate an alarming increase of diagnoses in younger

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women who continue to be an insufficiently studied demographic. No local studies have been conducted on the factors influencing overall survival, recurrence, successful pregnancy outcomes, risk factors, and the management approach among women aged 30 or younger in the Philippines highlighting major data deficiency. Young women who aim to maintain fertility can benefit from non-surgical treatments that involve fertility-preserving medications such as oral progestins which demonstrate potential effectiveness and highlight the necessity for customized treatments that protect both cancer safety and reproductive ambitions. The case report demonstrates the need to incorporate fertility preservation methods when treating young patients who have endometrial cancer. From navigating the complexities of prenatal care and future fertility planning demand exact precision and expert coordination to manage cancer progression risks while maintaining maternal and reproductive health.

This is a case report of a 26-year-old female diagnosed with Stage IA, Grade 1 endometrioid endometrial cancer, who was treated conservatively and later achieved a healthy-term pregnancy. The authors searched in PubMed and Google Scholar based on key words such as endometrial cancer, fertility preservation, young women, and pregnancy outcomes, limiting the number of studies in the recent and review articles. The reason why this case was selected is due to its rarity and reproductive outcome that was successfully achieved using conservative therapy. This case challenges their expectations and compels them to look beyond the ordinary, by detailing this patient's journey from diagnosis through successful full term pregnancy, they aim to set one's sight to the promising potential of achieving pregnancy after conservative management of endometrial cancer. They would like to contribute to the existing discussion on fertility-sparing treatment in the management of endometrial cancer and highlight the importance of patient-centered treatment in improving both the oncologic and fertility outcomes[2].

General Objective

To present a case of a 26-year-old, Gravida 1 Para 1 (1001) with Stage IA Endometrioid Endometrial Carcinoma who underwent conservative fertility-sparing treatment, successfully delivered to a full-term infant, and to outline her perinatal, obstetrical outcomes and long-term fertility planning.

Specific Objectives:

- To identify the major risk factors for endometrial cancer in reproductive-aged women, particularly in the presence of comorbidities such as obesity and polycystic ovarian syndrome.
- To present the overall survival, recurrence risk and reproductive outcomes such as obstetric and perinatal complications in young women diagnosed with early-stage Endometrial Cancer treated conservatively.
- To review fertility-sparing treatments, follow-up surveillance to reproductive interventions used following treatment, and the role played by patient-focused multidisciplinary care and consideration of future fertility.

THE CASE

This is a case report of a 26-year-old, Gravida 1 Para 0 who delivered a term, birth, living boy, via Low Segment Cesarean Section (LSCS) I – Pfannenstiel under Combined Spinal and Epidural Anesthesia, Prolonged Second Stage of Labor Secondary to Failure in Fetal Head Descent Secondary to Cephalopelvic Disproportion – Midplane. Long before her successful pregnancy, the patient had a relevant gynecological history, she was diagnosed with Grade IA endometrioid endometrial carcinoma, which had been managed conservatively for fertility sparing and cleared prior to conception. Potential influences underlying this malignancy include her clinical profile of Class II obesity and ovulatory dysfunction that have contributed to her cancer diagnosis.

Her clinical course started six years ago when she came in for a routine annual check-up where she had complaints of irregular menstrual bleeding ranging from 30 to 60 days, gradual weight gain, and clinical manifestations of hyperandrogenism. Her past medical history was otherwise unremarkable, with obesity identified. Upon further evaluation at the institution, transvaginal ultrasound was done which revealed polycystic right ovary and a multi-follicular left ovary. She was diagnosed as having Polycystic Ovary Syndrome (PCOS) and was started with combined oral contraceptive pills (Cyproterone Acetate and Ethinyl Estradiol) for two months and Metformin adjunct for weight management for over one year. Her menstrual cycle eventually became regular but she was lost to follow-up. During this initial management, she

was referred to a Reproductive Medicine specialist for co-management and evaluation of her ovulatory dysfunction and infertility problem.

Four years prior to consultation, she came back with complaints of prolonged menstrual bleeding for nine days, consuming 3 to 4 pads per day, fully soaked with noted intermenstrual spotting for three days in between. Repeat transvaginal ultrasound revealed Adenomyosis on the posterior uterine wall, as well as a thick, heterogeneous endometrium with irregular cystic spaces. The color Doppler score was 3, with <50% myometrial infiltration. Cervical polyp was also identified protruding beyond the external cervical os, measuring 0.61cm x 0.44cm x 0.34cm, with a single feeding vessel at the anterior cervical lip and polycystic ovaries.

She was advised to undergo Hysteroscopy, Polypectomy with Endometrial Curettage. Gross pathology revealed an irregular tan-gray tissue fragments of endometrial polyps and cuttings. Histologic analysis revealed the presence of a well-differentiated endometrioid adenocarcinoma with complex atypical hyperplasia with back-to-back glandular formations, pleomorphic and hyperchromatic nuclei, prominent nucleoli, and pseudostratified columnar epithelium. She was referred to a Gynecologic Oncologist and was subsequently diagnosed as Endometrioid Endometrial Carcinoma Grade IA[1]. Considering the patient's age and her desire for fertility preservation, multidisciplinary discussion and thorough counselling was undertaken regarding the standard definitive treatment with total abdominal hysterectomy and bilateral salpingooophorectomy, as well as the alternative option of conservative management using progestin therapy, including the discussion of the risks, benefits, series of additional tests and imaging, and close monitoring throughout the course of management. A decision was made to initiate hormonal therapy. Fertility-sparing therapy, or non-surgical preservation of reproductive capability with oncologic safety, is an accepted treatment in well-selected women with early-stage (Grade 1, Stage IA) endometrioid adenocarcinoma without myometrial invasion. Other conservative treatments are oral progestins, intrauterine progestin devices like the Levonorgestrel-Releasing Intrauterine System (LNG-IUS), or combined modalities. She was treated with Megestrol Acetate, a systemic progestin, for a period of 6 months. Contrast-enhanced MRI of the abdomen and pelvis was also done revealed no enhancing uterine mass, cervical involvement, or lymphadenopathy, confirmed early-stage disease diagnosis. During this treatment, she underwent Hysteroscopy with targeted endometrial biopsy every three months. After the third month of therapy, histology revealed residual endometrial polyp fragments with evidence of regression features: columnar epithelium without neoplastic features, thick-walled vessels, and fibrous stroma. After the sixth month of her therapy, final biopsy revealed benign endometrial histology with no residual malignancy.

Once disease remission was established, she was referred back to a Reproductive Medicine specialist for fertility counseling. Infertility workup was done including semen analysis of her partner which revealed a normal result. Her Anti-Müllerian Hormone (AMH) was lower than the reference range for PCOS, which indicates reduced ovarian reserve. Hysterosalpingography was also done which revealed bilateral patent fallopian tubes (Figure 1). Ovulation induction was initiated with Letrozole, a non-steroidal aromatase inhibitor, commonly used in women with PCOS. Ovulation was monitored by serial ultrasound, and timed intercourse was recommended. One month from the first ovulatory cycle with Letrozole, the patient had symptoms of early pregnancy such as delayed menses, breast tenderness, and fatigue. Self pregnancy test was positive and Transvaginal ultrasound was done which revealed a viable intrauterine pregnancy at 6 weeks with good cardiac activity, normal ovaries with a right corpus luteum and a circumferential subchorionic hemorrhage noted.[2] Her prenatal laboratory test results were all normal except for an increased 75g Oral glucose tolerance test wherein she was diagnosed with Gestational Diabetes. Capillary blood glucose levels were closely monitored and were at normal levels throughout her pregnancy.

At 33 weeks' age of gestation, the patient presented to the emergency room with irregular uterine contractions and was managed conservatively with Micronized Progesterone, after which no recurrence was noted. She went into labor at 38 weeks and 2 days age of gestation (Figure 2) and delivered to term, birth, living boy, APGAR Score 9 and 9, Birthweight of 3,530 grams by Low Segment Cesarean Section due to Cephalopelvic disproportion-Midplane. There were no fetal or maternal complications noted[3]. The placenta (Figure 3) was sent for histopathologic examination, which revealed a mature singleton placenta weighing 550 grams with a three-vessel umbilical cord and chorioamniotic membrane. She was discharged on her post-operative Day 4 with a long-term fertility

plan of attempting to conceive one year post-delivery. Potential risk of disease recurrence, possible management options including possible definitive treatment were thoroughly discussed with the patient and her family with the necessity of regular check ups and serial evaluation[4]. Three months after delivery, Levonorgestrel-Releasing Intrauterine System (LNG-IUS) was placed as maintenance therapy. LNG-IUS releases localized, sustained progestin in the endometrial cavity, inhibiting hyperplasia and reducing recurrence risk with preservation of fertility. Its use is based on evidence of comparable efficacy to systemic progestins in remission maintenance and is the preferred choice in patients requesting deferral of definitive surgical intervention. A multidisciplinary approach to gynecologic oncology, endocrinology, and reproductive medicine was reaffirmed to maximize outcomes.

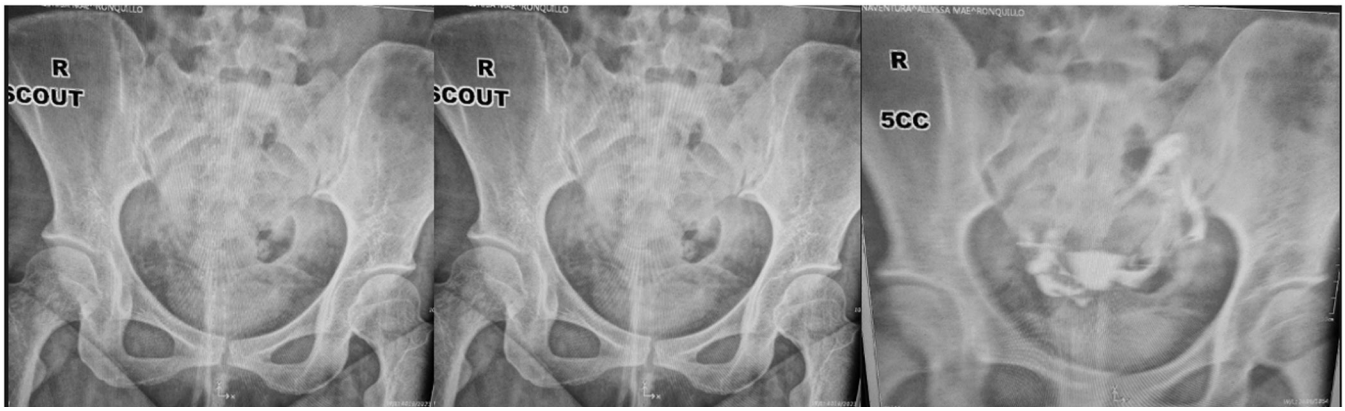

Figure 1. Intraoperative picture during hysterosalpingography (HSG) showing bilateral fallopian tubes.

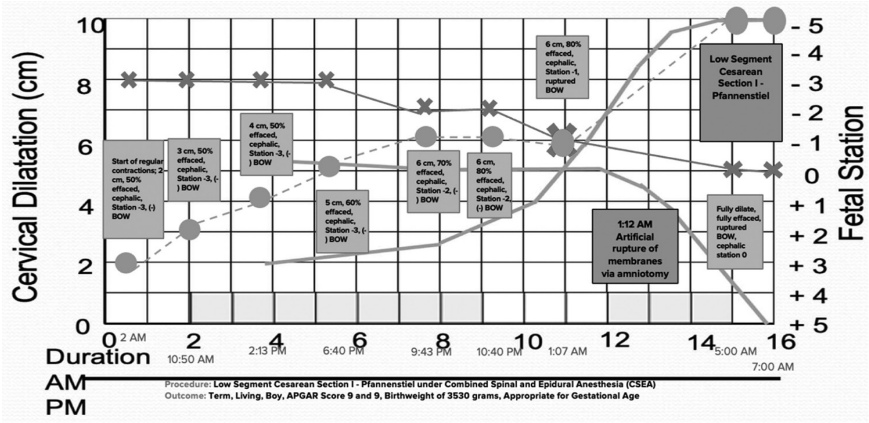

Figure 2. Labor curve of delivery.

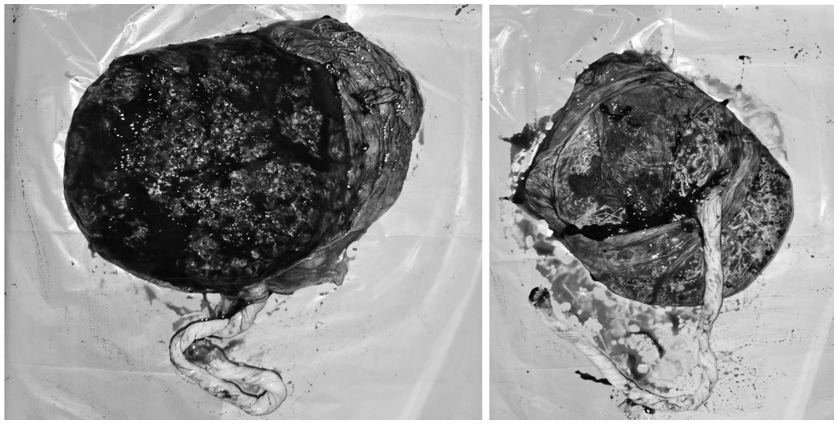

Figure 3. Gross picture of placenta after delivery.

DISCUSSION

Endometrial cancer is the most common gynecologic cancer in high- and middle-income areas of the world, and the third most common cancer of the female genital tract in the Philippines, after cervical and ovarian cancer. With over 417,000 new cases globally in 2020, mostly in postmenopausal women, approximately 40% of newly detected cancers diagnosed globally were reported in Asia. Just 5% happen before the age of 40, and only 2–14% happen during reproductive age. Compared to Western nations, the incidence is lower in the Asia-Pacific area. A rising trend in endometrial cancer was observed in 2020, with 4374 new cases in the Philippines. There are almost no local data on long-term fertility outcomes, recurrence rates, or the best approach to conservative management in reproductive-aged patients. There was only one similar local case with similar patient demographics that reported successful conservative management leading to conception, but that case only had follow-up until conception. On the other hand, this case report included ongoing monitoring that lasted until delivery, enabling ongoing evaluation of the obstetric and oncologic results. The safety and viability of continued fertility-sparing treatment during remission are supported by the important local data this prolonged follow-up provides. This case contributes to the paucity of Philippine literature on endometrial carcinoma and emphasizes the need for a national consensus on conservative management, follow-up procedures, and reproductive outcomes among young women with early-stage disease, given the rising incidence of the disease in the country and the dearth of local studies addressing fertility-preserving approaches.[5] Endometrial cancer though predominantly a disease of postmenopausal women, has shown increasing incidence in younger patients, particularly those with associated risk factors like obesity, hyperestrogenism, and polycystic ovarian syndrome (PCOS) as seen in the present case[6]. The possibility of endometrial cancer is usually investigated when a patient experiences abnormal uterine bleeding at the time of initial consultation. It is more easily identifiable in postmenopausal women primarily because postmenopausal bleeding as far as uterine pathology is concerned is an alarming symptom and makes it easier to promptly investigate and rule out malignancy. Further evaluation is recommended for premenopausal women who have irregular menstrual cycles or those with long or heavy vaginal bleeding as this may overlap with a broad range of benign gynecological issues and may not immediately trigger suspicion of endometrial cancer which can sometimes delay diagnosis. The exact mechanism driving endometrial cancer remains partially understood. In the absence of the classic risk factors, diagnosing endometrial cancer in young, premenopausal women remains challenging due to is atypical presentation.

As obesity has soared in global prevalence recently, more than half of all endometrial cancer cases are now attributable to excess weight. A meta-analysis conducted by the American Institute for Cancer Research combining 26 studies showed that for every 5 point increase in BMI, the risk for endometrial cancer increased by approximately 50%. Based on the obesity and hysterectomy rates by 2030, an incidence of 42.13 per 100,000 women is expected. The association appears to be linked with obesity-related mechanisms such as insulin resistance, hyperinsulinemia, hyperinflammation involving cytokines such as tumor necrosis factor-alpha (TNF-α). TNF-a plays a role in the pathophysiological process that may occur within the endometrium by enhancing local estrogen biosynthesis and directing estrogen metabolism into more hormonally active and carcinogenic metabolites and disturb hormonal balance.[7] Her obesity contributed to the underlying hormonal imbalance through peripheral aromatization in adipose tissue resulting to a sustained hyperestrogenic state. PCOS, a condition characterized by chronic anovulation and insulin resistance, often coexists with endometrial hyperplasia and cancer due to prolonged unopposed estrogen stimulation. Other non-traditional risk factors such as early menarche, late menopause, nulliparity or hormonal therapy exposure also increases incidence of endometrial cancer. In today's society, the increase in childbearing age has become a significant global social issue. Younger women prefer to have their first child at an older age, often due to personal factors such as pursing a higher education, career advancement and achieving economic independence. However, this shift can lead to undesirable consequences such as perinatal and obstetrical complications in the future and may be linked to several gynecological diseases. One of the key risk factors contributing to this rising risk in nulliparous women is the cumulative exposure to estrogen which is the one responsible in stimulating the endometrial lining during ovulatory menstrual cycles, in the absence of the counteracting and

protective effect of progesterone during pregnancy. The absence of pregnancy leads to an increased number of ovulatory menstrual cycles and subsequently, endometrial hyperplasia, a precursor to Endometrial Cancer. In a 2022 meta-analysis published in Cancer Epidemiology, Biomarkers and Prevention concluded that the risk of endometrial cancer is approximately 2 to 3 times higher in women with no children compared to those who have had children. Convergence of interrelated endocrine and metabolic factors in our patient depicts a clear cut example that can silently drive an early onset endometrial malignancy, this is evidenced by her long standing polycystic ovarian syndrome, a precursor that is highly regarded to cause endometrial hyperplasia. The interplay of coexisting risk factors in the patient in this case created a biologically fertile environment for endometrial carcinogenesis.

It was found that young patients possess more favorable features such as for those with well-differentiated tumors and absence or minimal myometrial invasion. Moreover, it was given that this age group tends to have a better immune response which may lead better recovery. While Total Hysterectomy and bilateral salpingo-oophorectomy (BSO) and/or pelvic and para-aortic lymph node assessment is the definitive treatment of Early-Stage Endometrial Cancer[8], it results in irreversible infertility, a devastating outcome for young women wishing to preserve their reproductive potential. Hence, For women with stage IA, grade 1 endometrioid cancer who have no evidence of myometrial invasion or disease spread outside the uterus on imaging—and who strongly wish to preserve their fertility—treatment with progestins can be considered as a fertility-sparing option. Several studies support that women under 45 with early-stage, low-grade endometrioid histology have a 5- and 10-year survival rate of 99.2% and 98%, respectively. With early diagnosis, these encouraging high survival rates combined with the demand for fertility preservation have created clinical attention towards hormonal and conservative management of a few cases.

Prior to undertaking fertility-sparing therapy, it is essential to first determine the tumor's pathological type and grade. Contrast-enhanced MRI, regarded as the gold standard and most accurate imaging for detecting myometrial involvement in endometrial cancer, as well as Transvaginal ultrasound helped guide the appropriate therapeutic planning of our patient[9]. MRI revealed no evidence of myometrial invasion which supported the decision to pursue conservative management. She was subsequently started on high-dose oral progestin therapy with Megestrol Acetate for six months with reassessment through Hysteroscopy and endometrial biopsy every 3 months with complete remission after 6 months of progesterone therapy. The ability to accurately monitor response through these means is critical in ensuring oncologic safety and timely transition to definitive management if needed[10].

Endometrial tumors most often exhibit hormone receptor expression and respond favorably to progesterone therapy. For women hoping to preserve their fertility, high-dose progestins, which have the strongest evidence of causing the regression of early, low-grade endometrioid disease, may be used as a conservative treatment—typically Medroxyprogesterone Acetate (400–600 mg daily) or Megestrol Acetate (160–320 mg daily). Therapy is usually continued for at least three months, with treatment response carefully monitored through dilatation and curettage or hysteroscopy. Gonadotropin Release hormone analogues and Levonorgestrel-releasing IUD 52mg which is effective for 5 years are also promising while Metformin can be added as an adjunct in obese patients to improve insulin sensitivity and weight loss. Some studies have shown that there was no comparison in terms of response rates among these types of progestins. However, a recent study showed evidence that megestrol acetate may be associated with a higher chance of achieving complete remission as opposed to medroxyprogesterone acetate, making it the more effective choice among oral progestins for inducing initial response from fertility-sparing therapy[12]. While these hormonal therapy options have hope for patients who want to conceive in the future with 80-90% of patients who had complete remission, choosing this management have associated risks. These risks include the insufficient response of treatment to eliminate the condition, risks of disease recurrence and risk of missing a more advanced disease. Despite this, patients managed with progestin therapy for endometrial cancer had a 73% pregnancy rate and 66% live birth rate in those actively seeking to conceive and achieved within 5 months post-treatment. Combined oral contraceptive pills are not recommended for endometrial protection in patients with endometrial cancer, as the estrogen component of COCs may exacerbate residual endometrial disease. They should not be used as a substitute for progestin therapy in fertility-sparing management.[13]

The literature has consistently shown high complete response rates in young patients with stage IA, grade 1 endometrioid endometrial cancer who undergo hormonal therapy ranging from 88% to 97%. Nevertheless, fertility-sparing treatments are not without limitations. Recurrence rates remain high, between 24% and 40.6%, with many cases recurring within three years post-remission[14]. One extensive study indicated that while 35% of patients entered remission, a substantial portion ultimately required definitive surgical management, and only 5% managed to achieve live birth. Although the option for conservative management exists, it must be offered judiciously and individualized based on tumor characteristics, patient comorbidities, and fertility intentions[13]. In the present case, the patient's response to Megestrol Acetate was favorable, but her management did not stop at achieving remission. Given that prolonged exposure to high levels of intrinsic progesterone may inhibit the recurrence or de novo development of endometrial cancer, one review recommended that women who want to become pregnant, should get pregnant as soon as complete remission has been reached because pregnancy was linked to a lower risk of recurrence.[14]

Following confirmation of complete remission by two consecutive biopsies, conception was immediately attempted. Current guidelines emphasized that conception must not be delayed once remission is confirmed, within 6 to 9 months to decrease the likelihood of recurrence, particularly in patients attempting natural conception. Assisted reproductive technologies (ART) may also be utilized to expedite delivery.[15] She completed one cycle of Letrozole, and eventually achieved conception. Letrozole, a third-generation aromatase inhibitor, is particularly effective in PCOS patients because it increases FSH levels without compromising endometrial receptivity, unlike Clomiphene Citrate. According to a meta-analysis of 10 randomized controlled trials, Letrozole is superior at inducing ovulation and achieving a clinical pregnancy compared to other agents, particularly in PCOS patients. In this patient, Letrozole was an effective ovulation inducer, leading to conception soon after remission was documented. The shorter half-life and lack of anti-estrogenic effects make Letrozole a preferred choice in post-treatment fertility restoration in patients with both PCOS and endometrial cancer[16]. Locally, there was one case with a nearly identical patient profile wherein she underwent conservative therapy with megestrol acetate 160 mg daily for three months, achieving complete histologic remission and successfully conceived after using clomiphene citrate to induce ovulation. However, the patient subsequently presented with vaginal bleeding with passage of meaty materials the following month, but eventually led to a successful pregnancy on her second attempt.[5]

For those women who have achieved complete remission, prenatal care is generally the same as that of any other expectant mother. Routine prenatal checks ups and monitoring remains the cornerstone for care, while oncologic follow-up is provided concurrently to maintain the safety of both the mother and fetus. During the course of her pregnancy, the patient encountered further clinical challenges including gestational diabetes mellitus (GDM) and threatened preterm labor, both of which could cause complications if left unmanaged. One study attests to higher risks of compromised pregnancy outcomes among endometrial cancer survivors, potentially because of previous hormonal therapy or concomitant metabolic disorder such as PCOS[17]. The patient in this case, was diagnosed with GDM, but was well controlled with diet and lifestyle modifications and strict glucose monitoring. She had a threatened preterm labor episode at 33 weeks of gestation, which was managed with initiation of Micronized Progesterone. In spite of these difficulties, she was able to carry the pregnancy to term and deliver a healthy baby boy, proving the potential for a good outcome in the obstetric setting, even from high-risk oncologic groups[18]. In addition to emphasizing the potential and effectiveness of treatment with fertility preservation in a specific group of patients with early-stage, low-grade endometrial cancer, this case identifies a necessity for close attention to individualization of care, to offer full counseling regarding the risk of recurrence of cancer and to follow such patients carefully. Rare cases of endometrial carcinoma being discovered or developing during pregnancy (also known as the "pregnant uterus harboring EC") have been reported; one such instance occurred in Japan, where a grade 3 component may have existed prior to pregnancy. Though such occurrences are extremely rare in practice, care must be taken because the hormone milieu during pregnancy, particularly the estrogens, may theoretically stimulate residual disease.[19]

After full delivery, the patient was maintained under strict surveillance to monitor for recurrence. Follow-up included regular imaging and endometrial biopsies, which align with current best practices. In selected patients meeting similar criteria, combining

hormonal therapy with close surveillance reduces the risk of progression and allows time for family-building[20]. While no standardized protocol for follow-up exists, most guidelines recommend evaluation every three to six months post-treatment for the first two years. While waiting for pregnancy, patient was advised to observe for any signs of abnormal uterine bleeding, pelvic pain or discharge. It is necessary to perform a pelvic examination to identify any abnormal findings. Some protocols may schedule transvaginal ultrasound every 3 to 6 months to assess endometrial thickness and detect significant recurrences or structural alterations. Changes in endometrial thickness are poorly correlated with histologic recurrence especially when progestin is used. However, depending only on transvaginal ultrasound without a biopsy is risky. Hysteroscopy and Endometrial biopsy should be done if the patient develops abnormal uterine bleeding and if ultrasound reveals abnormal or suspicious thickening supported by the ESGO-ESTRO-ESP management guidelines.[21] In this case, the patient's commitment and consistent adherence to a multidisciplinary plan with oncologists, fertility specialists, and endocrinologists were reasons to achieve the best results in the oncologic and reproductive fields.

Prior to discharge, a family meeting was held to discuss her future fertility plans. During this discussion, the potential risk of recurrence and the option of a hysterectomy was thoroughly explained. The patient expressed her intention to have one more child, ideally one year after her last pregnancy. Given her successful pregnancy following endometrial cancer treatment, several considerations guided her management: 1) her personal history of PCOS and obesity, at high risk for recurrence of Endometrial Cancer, 2) local and targeted progestin action of LNG-IUS with minimal systemic hormonal burden, and 3) the patient's desire to maintain future fertility without opting for ablative surgical treatment.

The Levonorgestrel-Releasing intrauterine system, or LNG-IUS, has been shown to be effective in inducing endometrial regression and is most commonly used alone or in combination with other hormonal drugs depending on patient factors with similar oncologic response. In addition to oral or injectable progestin hormonal therapy, intrauterine devices can also be used for short-term maintenance while delaying pregnancy. They provide high local progestin exposure with lower systemic effects, making them an option for maintenance for patients who cannot tolerate high-dose oral therapy or while waiting for their next pregnancy.[22] Despite the chance of childbearing provided by conservative treatment, patients need to be made aware of the risk of disease persistence or recurrence and the necessity for ultimate curative therapy. LNG-IUS was inserted 3 months post-operatively as a component of her long-term endometrial protection, taking advantage of its dual utility of preventing recurrence and offering contraception with an intact uterus. While the necessity of prophylactic hysterectomy post-family planning remains uncertain, it is recommended due to the high recurrence rate following fertility-sparing management. However, if further childbearing is desired, delaying hysterectomy may be reasonable until they complete family planning, but should receive maintenance therapy using low-dose cyclic progestin or a progestin-containing IUD as most recurrences remain confined to the endometrium and are treatable with surgery. Studies have also documented 2 or more successful pregnancies following fertility-sparing treatment[14]. While there is no mandatory interpregnancy interval for those who had a history of endometrial cancer, management must align obstetric recommendations with oncologic principles. According to Williams, optimal interval of 18 to 24 months, this would give the uterus adequate time to heal, and safer pregnancy outcomes to reduce the risk of uterine rupture and associated maternal outcomes. The timing relative to the subsequent deliveries of this patient considering that she has already underwent cesarean section and achieved remission following fertility-sparing therapy, a cesarean hysterectomy or a delayed postpartum hysterectomy may be the final course of treatment. Since there are no reliable studies that directly compare these methods, the choice should be made on an individual basis in accordance with the guidelines set forth by ESGO/ESHRE/ESGE and taking into account obstetric risk, uterine anatomy, comorbidities, surgical expertise, and oncologic factors. Following conservative treatment, case reports have shown successful cesarean hysterectomy with good results and no residual disease.[23,24] Although there is a greater chance of bleeding, adhesions, and obstetric complications, performing a hysterectomy at cesarean avoids a second major surgery and offers immediate, definitive therapy. In order to balance surgical and oncologic considerations, a multidisciplinary conversation with the patient is necessary.

A multidisciplinary team continues to play an important role in providing equitable decision-making where oncologic safety is balanced against reproductive potential. As the case illustrates, extended follow-up and individualized reproductive assistance are mandatory in the achievement of good outcomes[18]. Conservative treatment is effective for childbearing in a limited number of patients, but thorough counseling regarding recurrence risk and potential necessity for definitive treatment should be given[6]. Future directions in similar cases should focus on refining selection criteria for fertility-sparing therapy, developing standardized surveillance protocols, and integrating newer therapeutic agents like Levonorgestrel-releasing intrauterine devices (LNG-IUDs) or combining hormonal therapy with adjuncts like Metformin.

New research examining molecular biomarkers and gene profiles could further enhance our capacity to anticipate which patients will most profit from conservative management[6]. Furthermore, early incorporation of psychosocial support and reproductive counseling into care for these young patients, for both the emotional cancer burden and the expectation of motherhood, is mandatory. This case not only illustrates a positive intersection of care in cancer and reproductive medicine but also advocates the need for a move towards distinct, evidence-based guidelines of care of such specificities in young women with endometrial cancer.

CONCLUSION

This is a successful illustration of conservative, fertility-sparing therapy in a 26-year-old woman with Stage IA, Grade 1 endometrioid endometrial cancer. In the setting of risk factors of obesity and PCOS, the patient achieved complete remission with therapy with high-dose oral progestin and then subsequently conceived and delivered a full-term infant[25]. The integration of prudent imaging, precise histopathologic assessment, and formalized hormonal therapy was decisive in the achievement of good oncologic and reproductive outcomes.

The case emphasizes the importance of personalized treatment planning and the contribution of a multidisciplinary team to treating young patients with endometrial cancer. Oncologic safety was guaranteed by strict hysteroscopic surveillance and imaging, and reproductive demands were met by early referral to reproductive specialists and the utilization of ovulation induction agents. Postpartum insertion of a Levonorgestrel-Releasing Intrauterine System (LNG-IUS) was used both for contraception and maintenance therapy to decrease the risk of recurrence, as per international guidelines for long-term disease control[21].

It contributes to the growing literature that conservative management is a safe and effective option for well-selected young women with stage I endometrial cancer. It is highly dependent on judicious patient selection, aggressive follow-up, and complete counseling regarding recurrence risk and potential need for definitive surgical therapy following childbearing. The case supports the concept of supreme necessity to combine the fields of oncology, reproductive endocrinology, and maternal care because young women with endometrial cancer must have a chance to survive and flourish as well.

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