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Fertility Restoration Following Myomectomy and Unilateral Oophorectomy for Large Fibroid and Ovarian Tumor: A Case Report

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Abstract **Case Report**

This case report details the effective surgical management of a 24-year-old woman presenting with a large intramural fibroid and an ovarian cystic tumor, with an emphasis on fertility preservation. The patient, experiencing clinical symptoms, underwent a myomectomy and unilateral oophorectomy after a thorough preoperative assessment. A Pfannenstiel incision was utilized under spinal anesthesia to ensure optimal surgical access and complete excision of the pathologies while preserving reproductive structures—postoperative care involved close monitoring and supportive therapies, with hormonal assessments confirming normal endocrine function, and treatment for adenomyosis, right hydrosalpinx, and pelvic fluid. In 2020, additional treatments addressed acyclic bleeding and a myoma. Follow-up imaging showed a normalized uterine cavity, and the patient's menstrual cycle resumed within three months. Remarkably, she achieved natural conception eight months after getting married and delivered a healthy, full-term infant. This case highlights the importance of meticulous surgical planning, precise execution, and comprehensive postoperative follow-up in achieving favorable fertility outcomes in complex gynecological cases.

Keywords: Myomectomy, Ovarian Cystic Tumor, Fertility Preservation, Gynecological Surgery, Postoperative Recovery.

BACKGROUND

Fertility-preserving surgery for women with large fibroids and ovarian tumors is a crucial and challenging aspect of gynecologic practice [1]. Uterine fibroids, common in reproductive-age women, can impair fertility by distorting anatomy, altering uterine contractility, and affecting endometrial receptivity [1]. When ovarian tumors co-occur, reproductive outcomes become more complex, particularly if surgery, such as unilateral oophorectomy, is required to remove potentially malignant pathology. This procedure reduces ovarian reserve, posing risks to future fertility [2–4]. For women desiring future fertility, managing these pathologies without compromising ovarian and uterine function is paramount.

Balancing the effective removal of pathology with preserving reproductive potential is important. While myomectomy is often preferred to preserve the uterus, adding unilateral oophorectomy due to exist an ovarian tumor can complicate surgical decisions. Although successful pregnancies following myomectomy are documented [5], cases involving both myomectomy and unilateral oophorectomy are less common [6]. This case report offers valuable insights into fertility restoration following extensive surgery, highlighting the importance of individualized planning and advanced surgical techniques in achieving favorable fertility outcomes.

Case Presentation and Clinical Findings

A 24-year-old unmarried woman presented with persistent abdominal pain, heavy menstrual bleeding, dysmenorrhea, irregular cycles, low back pain, and pelvic discomfort, affecting her quality of life. The patient was admitted to the Department of Obstetrics and Gynecology of BIHS General Hospital on September 04, 2019. She had no significant medical or surgical history, and her family history was unremarkable. Obstetric history was not applicable as she was unmarried and had no prior pregnancies.

A clinical examination and a preoperative ultrasound conducted on August 7, 2019, revealed a ***bulky, anteverted uterus*** with dimensions larger than normal (length 11.05 cm, height 5.04 cm, and width 7.10 cm). A large hypoechoic fibroid, measuring ***6.75 cm x***

8.75 cm, was identified in the posterior uterine wall, compressing the endometrium and causing inhomogeneity in the myometrium. Both ovaries appeared normal with regular follicular activity.

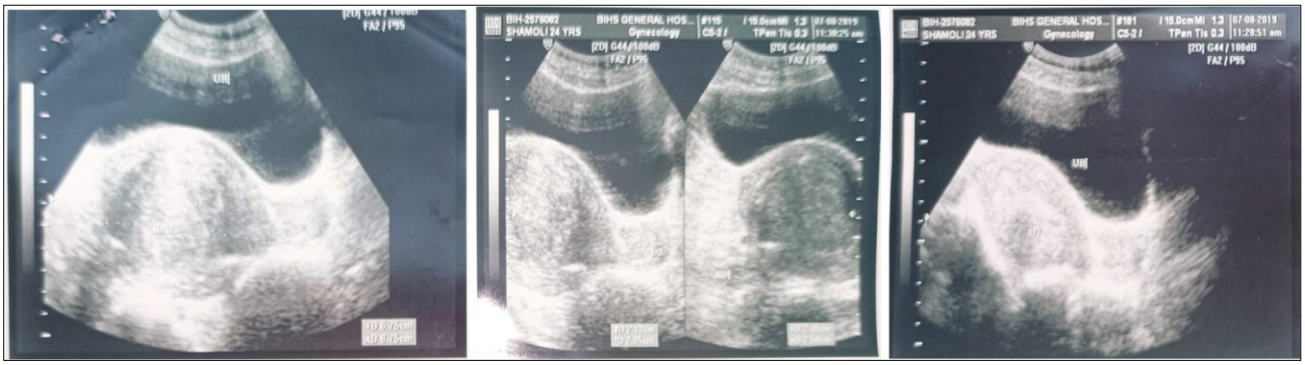

Figure 1: A large hypoechoic fibroid was found, measuring 6.75 cm x 8.75 cm in the posterior uterine wall

The patient was diagnosed with a bulky uterus caused by a large fibroid, which likely contributed to her symptoms. Considering her goals for fertility preservation, the medical team decided to perform a myomectomy aimed at alleviating symptoms and restoring reproductive potential.

Treatment and Surgical Intervention

After one day of observation, the medical team assessed that surgical intervention was essential to address the patient's large intramural fibroid. The procedure was conducted under spinal anesthesia with meticulous adherence to aseptic techniques.

Surgical Approach:

On September 5, 2019, a Pfannenstiel incision was performed to access the abdomen for a myomectomy, providing optimal surgical exposure while minimizing cosmetic impact. Upon entry, a large, thick-walled ovarian tumor was discovered in the left adnexa, attached to the ovarian base that had not been identified during the preoperative ultrasound, alongside a significant intramural fibroid. The medical team promptly consulted the patient's guardian in the operating room to obtain consent for an additional oophorectomy to remove the ovarian tumor and the associated fallopian tube. The tumor mass, along with the fallopian tube, was excised to ensure complete removal of the pathology. The intramural fibroid on the posterior uterine wall was also identified and successfully excised. Meticulous hemostasis was maintained throughout the procedure, and a drain tube was placed to monitor postoperative fluid collection.

Closure and Immediate Postoperative Care:

Following a thorough count of all surgical instruments and mops to ensure none were retained, the abdominal layers were closed systematically. The skin was closed intradermally using Dexon sutures for a more refined aesthetic outcome. The entire procedure was completed within 105 minutes, with the patient emerging hemodynamically stable. Postoperatively, she was initiated on intravenous fluids, broad-spectrum antibiotics, proton pump inhibitors, and nutritional supplements, with close monitoring in the general surgical ward to oversee recovery. Finally, the patient was released on September 11, 2019, along with advice to intake medicine regularly, plenty of water and nutritious foods and if any complication is found report it immediately.

Figure 2: Pathological Findings of Fibroid and Ovarian Tumor

Pathological Findings and Postoperative Evaluation:

Histopathological and cytopathological analyses revealed a pinkish, round intramural fibroid measuring 7.5 cm in diameter within the posterior uterine wall. Additionally, a brownish ovarian tumor measuring 11 cm in diameter with a thick wall (0.1 cm) was filled with mucoid fluid and confirmed as benign, with no evidence of malignancy in the excised tissue. The microscopic examination confirms a ***leiomyoma*** (benign uterine fibroid) with interlacing bundles of smooth muscle cells. It also identifies a ***mucinous cystadenoma*** (benign ovarian tumor) lined by columnar epithelium filled with mucin. The ***fallopian tube is unremarkable***, and ***no evidence of malignancy*** is detected.

Patient Follow-Up and Recovery

On October 23, 2019, the ultrasound findings indicated an enlarged, anteverted uterus with an inhomogeneous myometrium, suggesting possible adenomyosis. The right ovary showed an anechoic area consistent with potential right hydrosalpinx, and mild pelvic fluid collection may indicate inflammation or infection. The patient was treated with a broad-spectrum tetracycline antibiotic. On December 12, 2019, the patient was experiencing acyclic bleeding, which was treated with Noethisterone Acetate. In March 2020, the patient presented with extreme menstrual bleeding and dysmenorrhea, and a chocolate cyst was found in the right ovary. The patient was treated with Dienogest (2 mg) for two months to manage menstrual cycle disorders. Additionally, on September 15, 2020, ultrasound findings indicated a 1.0 x 0.8 cm myoma in the posterior wall, which was treated with Ulipristal Acetate for managing uterine fibroids.

Multiple follow-up ultrasounds were conducted on April 8, 2021; August 27, 2021; February 27, 2022; and October 15, 2022. No abnormalities were detected, aside from the absence of the left ovary due to its removal. Hormonal evaluations, including FSH, LH, estrogen, progesterone, AMH, thyroid hormones, and prolactin, all remained within normal ranges, indicating preserved reproductive function.

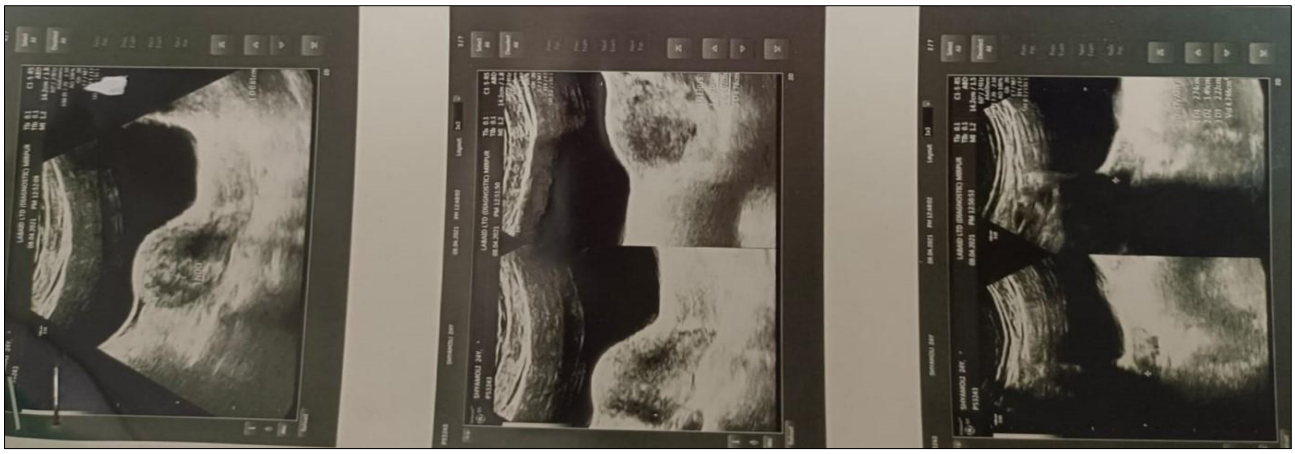

Figure 3: No Abnormalities found

The patient received reproductive counseling that included sexual health education, menstrual cycle education, healthy lifestyle maintenance, and nutrient supplementation. Three months post-surgery, her menstrual cycles normalized, suggesting restored fertility. She married on April 5, 2023, and eight months after getting married, the patient successfully conceived naturally; her last menstrual period was on December 28, 2023. The pregnancy progressed without complications, culminating in a full-term (37 weeks) live birth via cesarean section on September 18, 2024. The newborn was healthy, with normal size and weight.

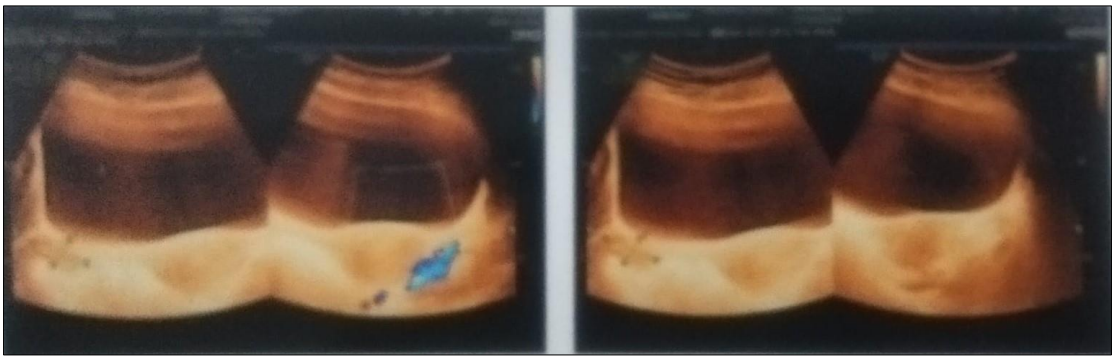

Figure 4: The pregnancy progressed without any complications

DISCUSSION

This case highlights the successful surgical management of a 24-year-old woman presenting with a large intramural fibroid and an ovarian cystic tumor, emphasizing the complexities involved in fertility-preserving interventions. Uterine fibroids, particularly those of significant size, are known to disrupt normal uterine function, leading to symptoms such as heavy menstrual bleeding, dysmenorrhea, and pelvic pain, all of which were reported by the patient [7, 8]. The decision to perform a myomectomy in such cases aligns with existing evidence that supports the removal of fibroids to improve fertility potential [5].

The surgical challenge was compounded by the presence of an ovarian tumor, necessitating unilateral oophorectomy. While removing one ovary can raise concerns regarding diminished ovarian reserve, studies indicate that reproductive outcomes can remain favorable with a preserved contralateral ovary [9]. In this case, thorough intraoperative evaluation and meticulous surgical techniques ensured complete excision of the pathology while maintaining hemostasis and minimizing damage to surrounding reproductive structures.

Postoperative care included vigilant monitoring and the administration of supportive therapies, contributing to an uncomplicated recovery. Hormonal evaluations confirmed normal levels, suggesting intact endocrine function, which is critical for fertility [10]. Follow-up imaging demonstrated a normalized uterine structure, confirming the success of the intervention in maintaining reproductive anatomy.

Restoration of normal menstrual cycles within three months and the patient's natural conception eight months post-surgery underscore the potential for fertility preservation despite extensive surgical intervention. The outcome, a full-term pregnancy resulting in the birth of a healthy infant, aligns with literature documenting successful pregnancies following myomectomy [11]. but adds to the limited cases where concurrent unilateral oophorectomy is involved [6].

The postoperative ultrasound showed mild fluid collection in the cul-de-sac, suggesting potential pelvic inflammation. This finding underscored the importance of vigilant follow-up to ensure resolution and prevent complications. Despite this, the patient's recovery proceeded smoothly without further intervention, contributing to a positive overall outcome.

This case underscores the importance of individualized treatment plans, highlighting that comprehensive preoperative assessment, precise surgical execution, and careful postoperative follow-up are pivotal in achieving positive reproductive outcomes in women with complex gynecologic conditions.

CONCLUSION

This case report demonstrates that fertility-preserving surgery involving myomectomy and unilateral oophorectomy can effectively manage large fibroids and ovarian tumor while maintaining reproductive potential. Meticulous surgical planning, precise execution, and thorough postoperative care were key to achieving a favorable outcome. The patient's restored menstrual cycle, natural conception, and successful full-term pregnancy highlight the importance of individualized treatment approaches in complex gynecological cases. This case contributes valuable insight into the possibility of positive reproductive outcomes following extensive yet conservative surgical interventions.

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