



Radiofrequency Ablation of Uterine Myomas Conditioning Bilateral Tubal Obstruction: A Case Report

Alarza R*, Marín ME, Engels V and Pérez Medina T

Departamento de Obstetricia y Ginecología, Hospital Universitario Puerta de Hierro Majadahonda, Madrid, Spain

*Corresponding Author: Alarza R, Departamento de Obstetricia y Ginecología, Hospital Universitario Puerta de Hierro Majadahonda, Madrid, Spain.

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Abstract

Introduction: Uterine myomas represent the most common benign gynecological disease in women but they are not symptomatic in all cases and their treatment should be individualized.

Case Report: A 38 year old woman attended to the emergency room due to abdominal pain and dizziness. A diagnosis of left ectopic pregnancy was made and a salpingectomy was performed. Two cornual myomas were also described in sonography. The right cornual myoma was a type 4 myoma according to Federation of Gynecology and Obstetrics classification and had a volume of 24 cm³. The left one was a type 4 cornual myoma with a volume of 49.76 cm³. HiFoSy (Histerosalpingo Foam Sonography) showed a T-shaped cavity and right tube obstruction. Vaginal radiofrequency ablation of both myomas was performed and 11 months after intervention the patient reported a positive pregnancy test. Sonography confirmed an intrauterine pregnancy.

Discussion: Medical treatment is not always effective in symptomatic fibroids, specially when there is compressive symptoms. Currently, patients ask for less invasive treatments so that they can preserve uterus. In this situation, radiofrequency ablation is becoming an effective technique with a small rate of re-intervention and good pregnancy outcomes.

Keywords: Myoma; Fertility; Radiofrequency Ablation; Pregnancy; Uterine Fibroid

Introduction

Uterine myomas represent the most common benign entity in women, but they are not symptomatic in all cases. There are many treatment options, both medical and surgical, that should be individualized for each patient.

In this case study, we report the presence of bilateral cornual uterine myomas conditioning tubal obstruction and how we managed them to improve reproductive outcomes.

Case Report

A 38 year old woman with 7 weeks of amenorrhea attended the emergency room due to abdominal pain and dizziness. It was her first pregnancy and she had no prior illnesses nor surgical history.

A diagnosis of left ectopic pregnancy was made with moderate signs of hemoperitoneum in sonography. Two cornual myomas were also described, one on the right side of 18x16x20 mm and another on the left side of 22x17x20 mm.

A laparoscopy was performed, confirming the presence of a left ectopic pregnancy and an ipsilateral salpingectomy was made. Due to the localization of both myomas, an assessment in consultation was recommended before attempting a new pregnancy.

In her first visit after surgery a new sonography was performed observing three uterine myomas: the first was a type 4 myoma according to International Federation of Gynecology and Obstetrics classification, with 24 cm³ volume (18x16x20 mm) and was located

close to the right uterine horn; another type 4 myoma with a 49.76 cm³ volume (22x17x20 mm) on the left uterine horn affecting the endometrium; and a small type 6 myoma in posterior uterine fundus.

The left cornual myoma was located in the trajectory of the intramural portion of the fallopian tube and may have contributed to the alteration of its function causing the ectopic pregnancy.

Hysteroscopy and HyFoSy (Hysterosalpingo Foam Sonography) were performed to assess uterine cavity and tubal patency.

Hysteroscopy showed a normal endocervical canal and two myomas. The first one was, at least, a type 3 myoma located on the left uterine horn and blocked the left ostium. The right ostium was observed and, below, there was another type 2-3 myoma that conditioned a T-shaped uterine cavity.

HyFoSy was made with 5cc of exem foam and a pediatric nasogastric tube for cervical canalization. A T-shaped cavity was observed due to both side myomas (Image 1). Right tube was not patent because of obstruction of the right horn myoma (Image 2). Left tube was not patent because of salpingectomy (Images 3,4). Both ovaries were normal.

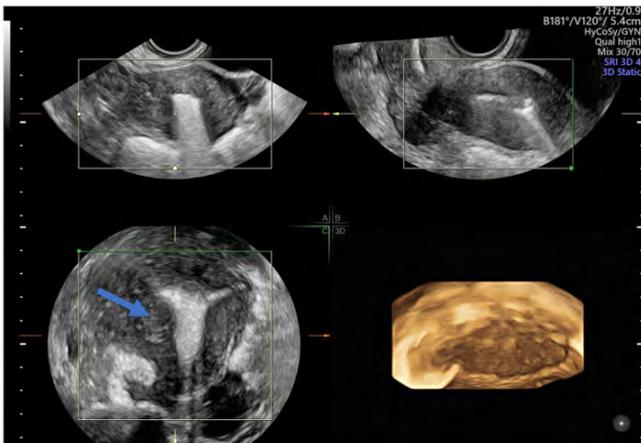


Image 1: Uterine cavity. A T-shaped cavity is observed due to both cornual myomas. The blue arrow points to the right cornual myoma.



Image 2: Right myoma. An obstruction of the right tube is observed.



Image 3: Left tubal obstruction after salpingectomy.



Image 4: Right ovary and left cornual myoma.

After these findings, the risk of a new ectopic pregnancy associated to tubal and uterine factor was explained to the patient as well as treatment options. Myomectomy *versus* radiofrequency ablation of both myomas were offered and in consensus with the patient radiofrequency ablation was finally chosen.

There are still medical centers which do not offer radiofrequency ablation in women who desire future pregnancy. However our center has reported several pregnancies with good perinatal outcomes, so our protocol treatment options in these women include radiofrequency ablation.

Anti-müllerian hormone was determined prior to procedure, with a result of 1.44ng/mL, to subsequently assess an assisted reproduction technique, if necessary.

Vaginal radiofrequency ablation of both cornual myomas was performed without incidences. After intervention, the patient consulted to the emergency room because of vaginal bleeding which was identified as menstruation.

One month after intervention, sonography reported a reduction of the size of both myomas: the one located on the right side measured 15x16x14 mm without Doppler color uptake and was hyperechoic; and the one located on the left side measured 20x22x20 mm with similar sonographic features.

Three months after intervention, the patient reported less menstrual bleeding and dysmenorrhea. Sonography showed a right cornual myoma of 11x11x13 mm and a left cornual myoma of 14x11x16. Given the reduction of the size of both myomas, a new HyFoSy was proposed to re-assess right tubal patency.

Prior to second look HyFoSy, 11 months after intervention, the patient reported a positive pregnancy test. An intrauterine pregnancy was confirmed by sonography, showing both myomas remaining stable.

During pregnancy both myomas remained stable. A small placental hematoma was observed between 12-24 weeks. Cesarean section was scheduled at 39+4 weeks because of breech presentation. A healthy neonate weighing 3210g was born. One month after cesarean section a placental polyp on in the right horn and was extirpated by hysteroscopy.

Discussion and Conclusion

Uterine fibroids cause heavy menstrual bleeding, dysmenorrhea, abdominal pain and infertility. They are also the first indication of hysterectomy. Currently, patients ask for less invasive treatments so that they can preserve uterus.

Medical treatment is not always effective and is not useful for compressive symptoms. Uterine artery embolization has demonstrated effectiveness in reducing symptoms and size of myomas but affects pregnancy outcomes.

In this situation, radiofrequency ablation is becoming a new and effective technique to control myomas' size and symptoms in suitable patients [1], with an acceptable rate of subsequent pregnancy without increasing obstetric complications.

Our patient presented little symptomatic myomas but they affected tubal function. Taking into account pregnancy desire, age and previous ectopic pregnancy we proposed a treatment that could allow short-term pregnancy avoiding severe adverse effects.

In a systematic review in 2021 [2] ablation techniques were compared with myomectomy in 4205 patients. There were no statistic differences between both groups in effectiveness, quality of life and symptoms. There also were not differences in rate of reintervention and pregnancy.

In terms of pregnancy rates after treatment there are not enough studies with a clear definition of them. Traditionally, radiofrequency ablation has not been used in women who desire future fertility; but there are more and more cases reported with good perinatal outcomes, as is our case [3].

A case series published by Berman., *et al.* [4] reported 30 pregnancies after laparoscopic radiofrequency ablation in 28 women with a mean age of 35 years old (most of them with 1-2 myomas type 1-6 according to the International Federation of Gynecology and Obstetrics classification). No preterm births, uterine rupture, abruptio placentae, placenta accrete nor intrauterine growth restriction were reported, just one case of placenta previa with moderate puerperal bleeding.

Radiofrequency ablation is a promising method to avoid invasive treatments that can delay pregnancy in suitable women. It does not cause uterine scars, so uterine rupture should not be increased [5] and it is not a vaginal delivery contraindication.

We should take into account that the effect of radiofrequency ablation takes several months but, unlike myomectomy, contraception is not contraindicated immediately.

Reintervention rate is similar to other uterus-preserving treatments [6,7] (myomectomy and uterine arteries embolization). In SONATA study [8] in 147 women a surgical reintervention rate of 0.7% in the first year, 5.5% at two years and 9.2% at three years was reported. Myomectomy reported a reintervention rate of 9% and uterine arteries embolization reported a reintervention rate of 17%.

Finally, radiofrequency ablation is also a promising treatment in adenomyosis. This pathology is getting more and more important in the last years because of its symptoms and its impact in fertility. A meta-analysis including 38 studies [9] and 15908 women showed an improvement in dysmenorrhea, heavy bleeding and pregnancy rates after receiving ablative techniques (High Focused Ultrasound, Percutaneous Microwave Ablation and Radiofrequency Ablation). Reintervention rate was 28.7% and pregnancy rate 35.8%.

HyFoSy has demonstrated a good sensitivity and specificity evaluating tubal patency [10] while it enables an accurate evaluation of endometrial cavity [11]. A small myoma can condition fertility and symptoms. We must also consider that radiofrequency ablation can change current treatment recommendations, specially in women who desire future fertility.

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