

Hysterectomy with embryo in utero in a patient with pulmonary thromboembolism: A case report

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Abstract

Background: En bloc hysterectomy is a controversial procedure with little updated literature. It is defined as the removal of the pregnant uterus with its gestational contents in situ, the indications for this surgery are neoplastic processes as the most frequent cause, septic processes, trophoblastic disease and hemorrhage secondary to abnormal placental insertion.

Clinical Case: 45-year-old patient with pregnancy of 8 weeks and 5 days, according to the date of the last menstrual period, with giant uterine myomatosis associated with pulmonary thromboembolism, who decides to voluntarily terminate the pregnancy and undergo en bloc hysterectomy.

Conclusions: En bloc hysterectomy is a rarely performed surgery at present, however, this surgical approach is a safe and effective option for voluntary termination of pregnancy and should not be discarded among the surgical treatment alternatives, always individualizing each patient.

Key Words: hysterectomy, pregnancy, leiomyomatosis, indicators of morbidity and mortality, pregnancy reduction.

Resumen

Antecedentes: la histerectomía en bloque es un procedimiento controvertido y con poca literatura actualizada. Se define como la extirpación del útero grávido con su contenido gestacional *in situ*, las indicaciones para la realización de esta cirugía son los procesos neoplásicos -como la causa más frecuente- procesos sépticos, enfermedad trofoblástica y hemorragia secundaria a inserción placentaria anómala.

Caso clínico: paciente de 45 años con embarazo de 8 semanas y 5 días, según la fecha de última regla, con miomatosis uterina gigante asociado con tromboembolismo pulmonar, quien decide la interrupción voluntaria del embarazo y realizarse la histerectomía en bloque.

Conclusiones: la histerectomía en bloque es una cirugía poco realizada en la actualidad, sin embargo, este abordaje quirúrgico es una opción segura y efectiva para la interrupción voluntaria del embarazo, y no se debe descartar entre las alternativas de tratamiento quirúrgico, siempre individualizando cada paciente.

Palabras claves: histerectomía, embarazo, leiomiomatosis, indicadores de morbimortalidad, reducción de embarazo.

Background

Etymologically, the term hysterectomy is formed from two Greek roots: isteros (uterus) and ectomy (removal) (1). Obstetric hysterectomy is defined as the partial or total resection of the uterus during pregnancy, delivery or puerperium (2), and en bloc hysterectomy is defined as the removal of the pregnant uterus with its gestational contents *in situ*, containing trophoblastic disease or a dead fetus (3).

The overall pooled incidence of obstetric hysterectomy is currently 1.1 per 1000 births (4), it is important to take into account that cesarean deliveries are becoming more frequent, so the incidence rates of this pathology vary depending on the country and could be increased (5).

Additionally, the indications described in the literature for performing this surgery en bloc are neoplastic processes as the most frequent cause, septic processes, trophoblastic disease and hemorrhage secondary to anomalous placental insertion (6). Other obstetric causes include placental pathology with 38.0 % followed by uterine atony (27.0 %) and uterine rupture (21.2 %) (3), with an overall maternal case fatality rate of 11.2/100 emergency

peripartum hysterectomies (4).

It has also been associated with serious complications such as increased blood loss requiring red blood cell transfusion, disseminated intravascular coagulation, surgical reoperation due to persistent bleeding, longer hospital stay, increased risk of visceral gastrointestinal and urinary tract injury, and infertility (7).

The objective is to report the case of a 45-year-old patient with a pregnancy of 8 weeks and 5 days with giant uterine myomatosis associated with pulmonary thromboembolism who decided to voluntarily terminate the pregnancy and decided to perform en bloc hysterectomy with little evidence of this pathology in the literature.

Clinical Case

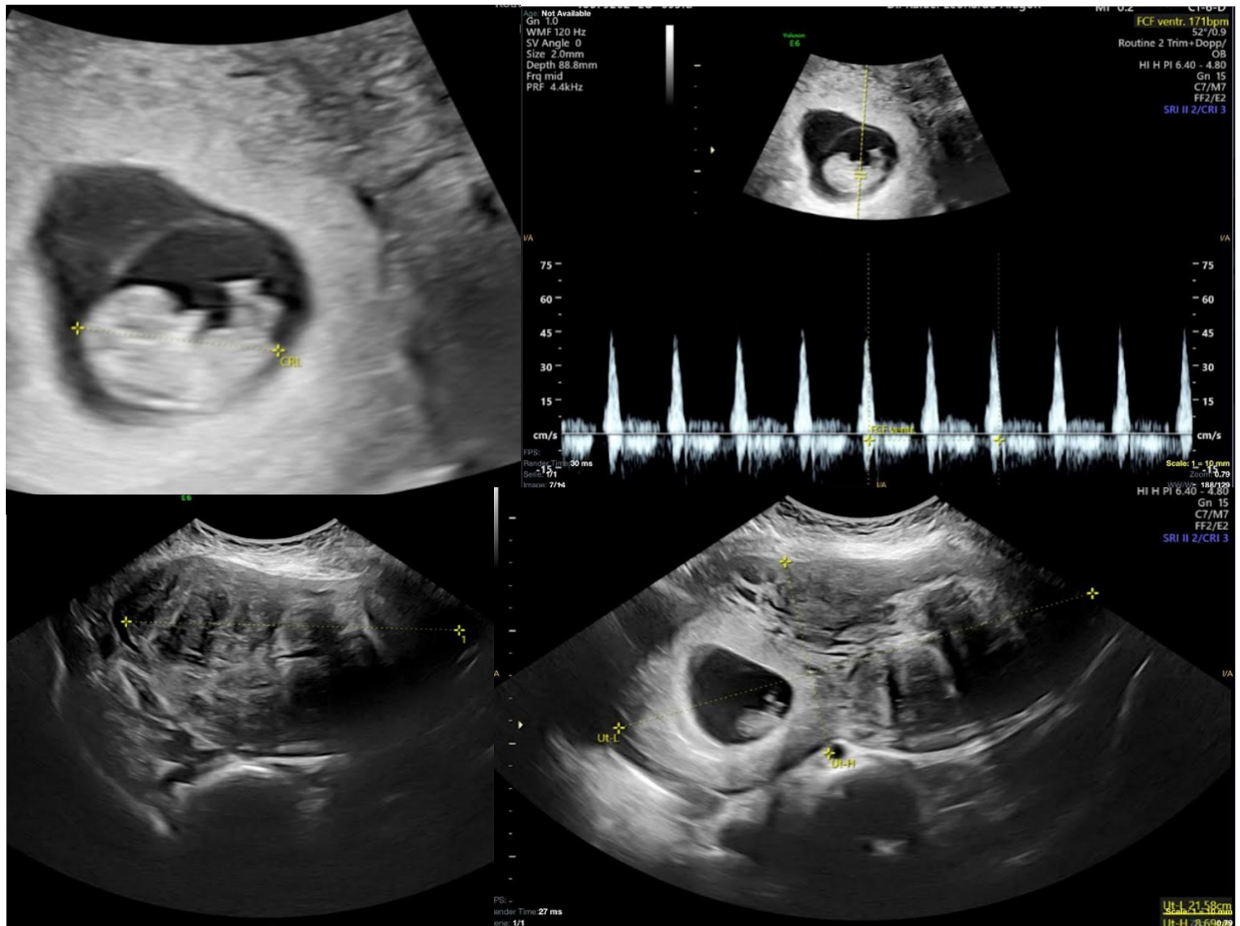
45-year-old patient from Chiquinquirá (Boyacá) with clinical picture of 8 days of evolution consisting of dyspnea of moderate efforts, associated with multiple emetic episodes, initially consults the Regional Hospital of Chiquinquirá, where early pregnancy of 8 weeks and 5 days is evidenced by ultrasound, the patient is found with polypnea, oxygen requirement by nasal cannula at 2 liters/minute, pre-hypertensive blood pressure, electrocardiogram with finding of S1Q3T3, left bundle branch hemiblock, with suspicion of pulmonary thromboembolism, for which she was referred to the Central Military Hospital, a fourth level institution in the city of Bogota that attends patients with military forces regimen.

Patient with pathological history of uterine myomatosis of 3 years of evolution, allergic to metoclopramide. Gynecological history includes three pregnancies, in 2002 early abortion of 8 weeks that required obstetric curettage, cesarean section in 2003 for fetus in pelvic presentation and current pregnancy not primipaternity, with no other history of importance.

On physical examination on admission, she presented blood pressure of 135/88 millimeters of mercury (mmhg), heart rate 93 beats per minute (bpm), oxygen saturation 92% with oxygen cannula at 2 liters/minute, abdomen with no signs of peritoneal irritation, uterine height 20 centimeters, Vaginal tact, cervix closed, long, hard and posterior, without vaginal bleeding, obstetric ultrasound was performed, reporting a pregnancy of 9 weeks and 6 days, embryo with embryocardia 173 bpm, with cephalocaudal length of 30 millimeters (mm), gestational sac of 50 mm and yolk sac 5.4 mm. Uterus with dimensions of 215 x 86 x 154 mm, with irregular contours with altered echogenicity, due to the presence of multiple fibroids, the largest

posterior Fig 3 of 55 x 53 x 70 x 70 mm, anterior Fig 4 of 78 x 45 x 62 x 62 mm, left lateral Fig 4 of 90 x 67 x 75 x 75, one fundic Fig 4 of 67 x 64 x 68 mm, ovaries not visualized, cervical length 50 mm (Figure 1), rest of clinical examination within normal limits for age.

Figure 1. Obstetric ultrasound.



Report of pregnancy according to the caudal cranial length of 9.6 weeks, with embryocardia present, with cephalocaudal length of 30 millimeters (mm). Associated with large uterine fibroids.

Institutional examinations were performed with electrocardiogram with heart rate 75 bpm, sinus rhythm, inverted T in leads DI, DII, DIII, and from V1 to V4, no pathological Q waves. Chest X-ray with no pulmonary parenchymal lesions, no signs of pleural effusion. Transthoracic echocardiogram with good biventricular systolic-diastolic function, left ventricular ejection fraction: 65%, right cavities normal size and shape and mild tricuspid insufficiency (low probability for pulmonary hypertension 37 mmhg). Venous Doppler of lower limbs negative for deep vein thrombosis. Troponin 0.097

nanograms/milliliter negative, Free T4: 1.21 nanograms/deciliter, thyroid stimulating hormone 0.6 milliunits/Liter, blood count leukocytes 8200, 65% neutrophils, hemoglobin 14.7 milligrams/deciliter (mg/dl), platelets 196.000 platelets/deciliter, creatinine 0.6 mg/dl urea nitrogen 8.9 mg/dl, with arterial gases pH 7.46 partial pressure of carbon dioxide (pCO₂) 23, arterial oxygen pressure (paO₂) 47, bicarbonate 16, Excess base -7, Oxygen saturation 86% with Fio₂ at 21%, Pao₂/Fio₂ 223 Lactate 0.86, with respiratory alkalemia and moderate lung dysfunction.

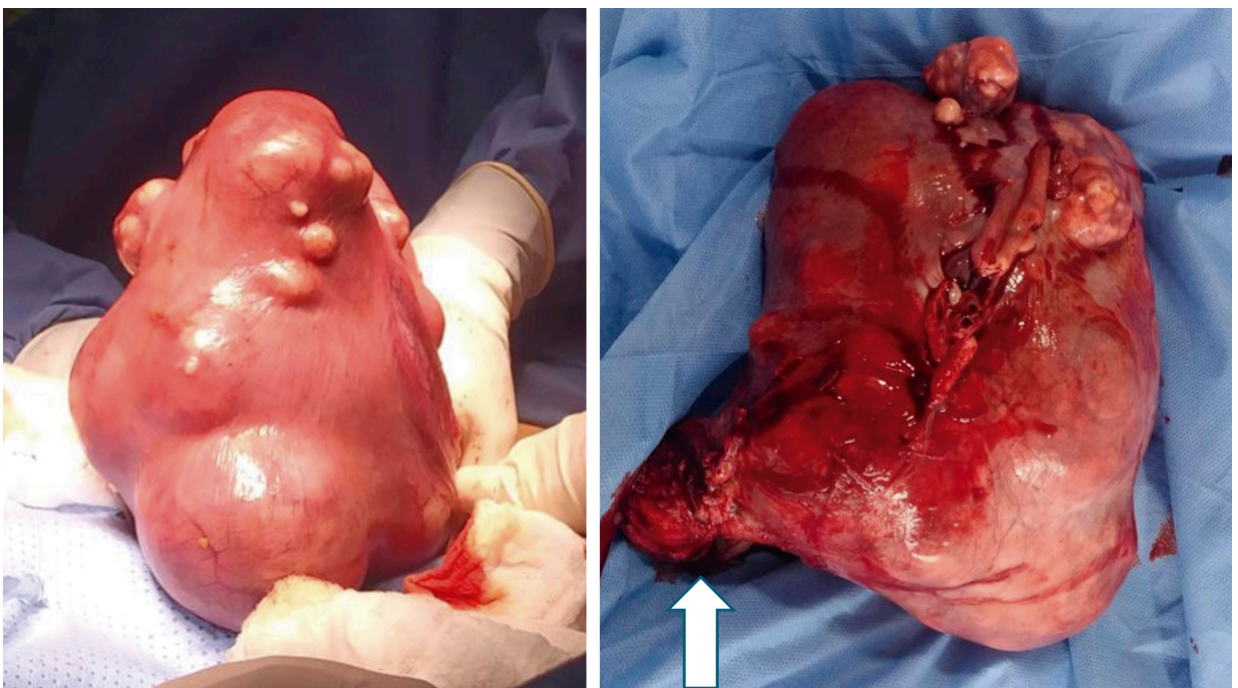
Patient with gestational risk, it was decided to perform pulmonary angiogram to rule out pulmonary thromboembolism and associated pathologies. It was reported central opacification defect involving the distal third of the right pulmonary artery branch, as well as posterior segmental branch of the right upper lobe, branch for the middle lobe and right lower lobar branch with partial extension to posterior segmental branch for the right lower lobe. There is no increase in the amount of pericardial fluid. No mediastinal masses or adenomegaly. Subpleural reticular densities in declivity segments of both lower lobes parenchymal bands and bilateral basal subsegmental atelectasis and in the lateral segment of the lobe. Therefore, anticoagulation with enoxaparin 70 milligrams/kilograms every 12 hours was started.

During the multidisciplinary management, she was evaluated by psychology, who reported that the patient mentioned unplanned pregnancy, with low emotional expectation associated with fear due to the existing risk with the current health situation. After discussing the risks, complications and benefits, the patient and her family decided to desist the pregnancy and perform a complete surgical procedure at this time. Therefore, the patient decides to voluntarily terminate the pregnancy, the medical team accompanies the process. Informed consent was signed and management with misoprostol prostaglandins was started according to the IFGO (International Federation of Gynecology and Obstetrics) scheme, and management with enoxaparin was suspended. Four doses of misoprostol were administered without cervical changes, completing 30 hours without anticoagulation, cervicometry was performed with cervical length of 5 cm, total length of the uterus at approximately 20 cm, due to the increased risk of thrombotic event at pulmonary level and new thromboembolic events, a medical meeting was held with the anesthesiology service, perinatology and gynecology who considered performing a block hysterectomy.

Surgical procedure was performed with findings of scar due to a his-

tory of cesarean section, fascia firmly attached to rectus abdominis muscles, diastasis of rectus abdominis, enlarged uterus, and deformed by the presence of multiple intramural and subserosal fibroids, distributed in all its segments, causing rotation of this, hysterectomy was performed with intrafascial technique, surgical piece weight of 2. 220 grams, making compression on pelvic structures, ascended bladder and firmly adhering to the anterior aspect of the uterus, edema of tissues at the level of parametrium and cervix, macroscopically normal annexes. Bleeding approximately 200 cc (Figure 2).

Figure 2. Surgical procedure



Uterus enlarged and deformed by the presence of multiple fibroids. The white arrow points to the cervix.

The patient was admitted to the intensive care unit in postoperative period for clinical monitoring, hemoglobin control at 9.7 mg/dl in decrease with respect to the previous 12.8 mg/dl, with no signs of low output and therefore did not require transfusion of blood products. 24 hours later she was transferred to the floor for continued observation; patient with adequate clinical evolution was discharged from the institution after 4 days.

Appointment for outpatient gynecology control at 20 days with pathology report with anterior and posterior endometrium with mild to moderate inflammation decidua, areas of necrosis without changes of vasculopathy,

multifocal adenomyosis, subserosal and intramural leiomyomatosis with areas of hyaline degeneration, presence of 4 cm embryo with findings of ovarian membranes, patient with appropriate clinical evolution, asymptomatic and adequate healing of the surgical wound in management with oral anticoagulant therapy.

Discussion

En bloc hysterectomy continues to be a controversial procedure, because there is insufficient updated literature to support its safety and superiority compared to other surgical procedures in cases of voluntary termination of pregnancy (8,9).

Criticism has been based on the lack of indication for major surgery when simpler and less dangerous procedures could be performed (10). Casas-Peña carried out a study with an incidence of obstetric hysterectomies of 5.9 per 1000 live newborns, with uterine atony being the most frequent indication (47.4%); possibly secondary to the increase in the rate of cesarean sections (3).

There are no studies in Colombia with incidence of en bloc hysterectomy. The reported cases of elective en bloc hysterectomy have been reported since 1975, where there is evidence of an increase in its use as a method of surgical sterilization (11).

Among the causes for the decision to perform this procedure, the highest prevalence is reported to be a history of failed surgical sterilization (13.2%), followed by maternal medical pathologies, including psychiatric pathologies, as reported in the study by Stumpf et al. (11), which account for 10.4% of the total causes; 3.2% for a history of suicide attempt, heroin consumption in 1.4%, fetal death, abortion, sexual abuse with a lower prevalence.

Other studies describe cervical oncologic pathology as another frequent cause of obstetric hysterectomy at the beginning of pregnancy, followed by ovarian neoplasia, which will depend on tumor staging (12); up to 6% of cases presenting adnexal masses during pregnancy turn out to be malignant tumors (13).

There are different complications and morbidity associated with hysterectomy, even though it is a relatively safe procedure, among which are associated psychosexual complications, greater cost and recovery time in comparison to less invasive procedures (9). Among other possible complications are increased bleeding and transfusion requirements in up to 33% of patients (11), risk of thromboembolism due to hypercoagulability associated

with pregnancy; these factors produce circulatory changes, characterized by Virchow's triad: damage to the vascular endothelium, hypercoagulation and decreased venous circulation (14). Additionally, uterine fibroids can generate thromboembolic events due to compression of the iliac veins or the inferior iliac vein, with vascular damage and decreased blood circulation velocity (15).

Postoperative infections associated with increased vascularization and alterations in the microbial flora of the female genital tract may also occur; the combination of these factors would result in higher morbidity and mortality rates (9,10). However, hysterectomy performed in the first 20 weeks of pregnancy leads to a morbidity rate that is comparable to that of hysterectomy of non-obstetric cause (9,11).

An important question to ask is what advantages en bloc hysterectomy may have compared to other surgical procedures in patients with a desire for definitive contraception. The possibility of a new pregnancy due to a failure in the contraceptive method, as evidenced in the study by Stumpf et al. (11) where 13% of the patients had a history of failed surgical sterilization, thus considering hysterectomy an absolute guarantee of no more pregnancies or additional surgical procedures related to contraceptive methods or gynecological pathologies, including irregular menstrual cycles (16).

Conclusions

However, this surgical approach is a safe and effective option for the voluntary termination of pregnancy, simultaneously with other gynecological medical pathologies and should not be discarded among the surgical treatment alternatives, always individualizing each patient. In addition, continuous training of the obstetrician is essential to reduce maternal morbidity and mortality.

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