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A Case of Massive Uterine Bleeding due to Fibroid Expulsion after Uterine Artery Embolization: Control of Bleeding by Re-embolization

Abstract: A 35 year-old woman underwent uterine artery embolization (UAE) for uterine fibroid. Just the fibroid was expelled (seventy days after UAE), massive uterine bleeding occurred which was treated by super-selective uterine artery re-embolization. Three hours after the re-embolization, bleeding stopped and follow-ups showed complete elimination of menstrual, urinary and bulk-related symptoms. Massive hemorrhage after fibroid expulsion is probable and embolization of uterine arteries is a favorite alternative treatment for this condition.

Keywords: arterial embolization, uterine, expulsion, fibroid, vaginal bleeding

Introduction

Transcatheter uterine artery embolization (UAE) was first reported by Ravina in 1995 [1, 2] and is now emerging as a highly effective technique for treatment of uterine fibroids.[3]

The advantages of UAE as compared with hysterectomy or myomectomy are that UAE does not require general anesthesia, and does not entail the side effects of major surgical procedures and infertility and psychological problems due to hysterectomy.

The clinical success rate of UAE has been reported 80-94 % [2, 4-8] and follow-up 6 months ultrasonography has revealed an average reduction in fibroid size of about 40-70 %.[3, 9, 10]

UAE is usually performed under conscious sedation. The uterine arteries are catheterized through a femoral approach and generally embolized using 300-500 or 500-710 microne polyvinyl alcohol particles.

Our experience has revealed that a significant percentage of patients who have had the embolization procedure have had reduction in menorrhagia and also in the volume of their fibroid.

There have been very few reported complications while major complications are rare. Minor complications include vomiting, pain, infection, allergic reaction, and trauma at the site of puncture. Premature ovarian failure is a rare but possible long-term complication.

Expulsion of fibroids as a whole or in pieces can be seen after UAE [11] which is not a complication by itself, but is an unusual response of the uterus to degenerated fibroid.[11]

We report an unusual case of a woman who passed fibroid and immediately after expulsion, massive uterine bleeding occurred which was controlled by re-embolization of uterine arteries.

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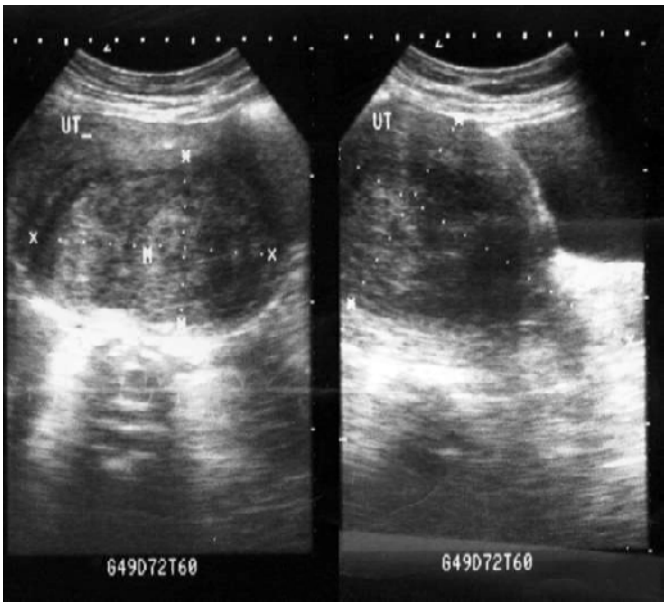
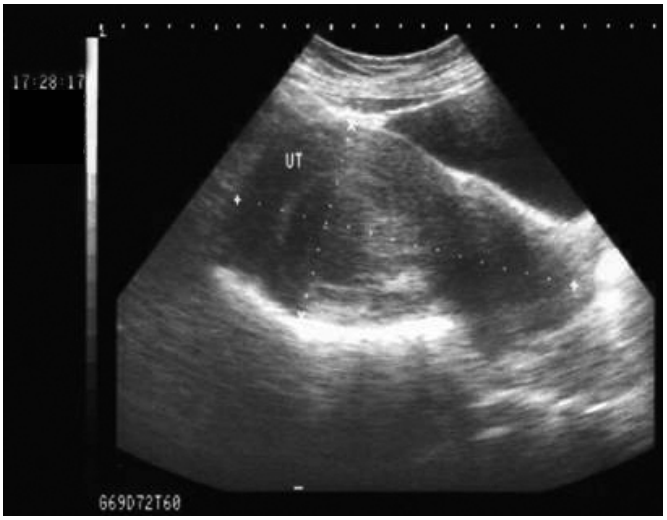


Figure 1: Preoperative trans-abdominal sonography showing large intra-mural fibroids.



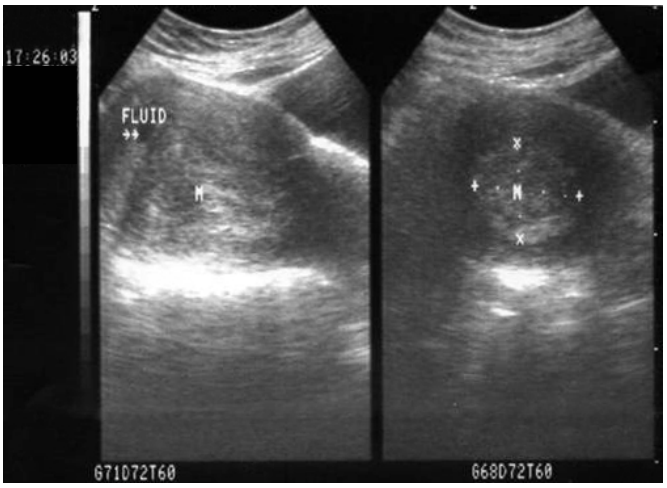


Figure 2: One-month post-embolization trans-abdominal sonography, showing intra-mural fibroid by increased echogenecity due to embolization procedure.

Case Report

A 35-year-old woman, gravid 5 para 2 abortion 3 live child 1, presented with irregular menorrhagia, pelvic pressure, and urinary symptoms of dysurea, polyurea and frequency. On physical examination, uterus was about 16 weeks of gestation in size. A pelvic ultrasound revealed a uterus measuring 137mm×110mm×84mm, with a single intramural mixed-echo fibroid without necrosis or hemorrhage, measuring 66mm×81mm×93mm, located in the posterior part of the uterine body. (Figure 1)

The hemoglobin level was 8 gr/dl. Under conscious sedation, after a right-sided transfemoral puncture, bilateral superselective uterine artery catheterization by 5F Cobra catheter was performed and 500-710 microne polyvinyl alcohol particles were injected into the vascular bed until blood flow to fibroid ceased and stagnation of the blood flow in both uterine arteries was achieved.

The procedure was technically successful and uneventful. The patient had pelvic pain in the first 24 hours after embolization, which was controlled with 50 mg of Petedine (20 mg intravenous and 30 mg intramuscular). The patient was discharged after ten hours; and for pain control Acetaminophen codeine and Ibuprofen were prescribed.

After procedure, the patient did well and returned to normal activities ten days after the procedure. She returned for follow-up 1 month later and reported complete resolution of her urinary and bulk-related symptoms. However, she still reported prolonged menstrual bleeding that had decreased mildly as compared to her previous state. The Post-embolization ultrasound in one month follow-up revealed a uterus measuring 130mm×107mm×80mm, with a transmural and partly submucosal fibroid that measured 84mm×94mm×72mm.(Figure2)Her hemoglobin was 9 gr/dl then.

Seventy days after the procedure, the patient developed mild to moderate contractive pelvic pain. Two days later, she noticed a large tissue in her vagina. Vaginal examination in the emergency room revealed a prolapsed white fibroid tissue with partial adhesion to the uterus which could not be removed. Under sterile conditions, some parts of the fibroid was removed but it was still partly connected to the uterus. Meanwhile we controlled the patient's medical condition and prescribed oral Cephalexin 2gr daily, Metronidazole 750 mg daily, as well as Acetaminophen codeine and Ibuprofen for pain control.

The day after, when the patient was prepared for hysteroscopy, the tissue spontaneously expelled. Immediately after expulsion, massive uterine bleeding occurred and vaginal examination in the emergency room revealed no rupture of uterus or cervix.

At this time, the patient's blood pressure was 95/50 with negative tilt test. Hemoglobin level was 8gr/dl. After infusion of 1000 ml of normal saline, her blood pressure rose to 110/70. Three units of iso-group packed-cell infused for the patient. Meanwhile, the patient was transferred for emergency angiography and embolization, to control the vaginal bleeding.

Under conscious sedation, re-embolization was performed. Angiogram revealed no evidence of extravasations. There was only some tumoral blush of the remnant fibroid with much lower intensity than the first angiogram. By 5F Cobra catheter superselective uterine catheterization was performed and gel foam particles injected into the junction of vertical and horizontal parts of the uterine arteries until blood flow ceased. (Figure 3)

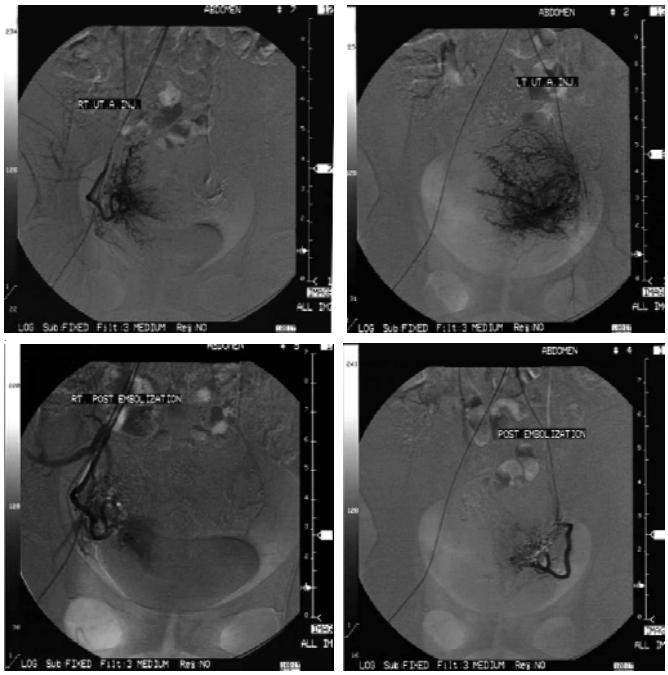


Figure 3: Pre and post-embolization angiogram of both uterine arteries.

Figure 4: Eighteen-months after embolization, trans-abdominal sonography showing normal uterus without any kind of mass lesion.

Vaginal bleeding stopped 3 hours after embolization and the day after, the patient was discharged in a good condition. Her hemoglobin was 10gr/dl.

The follow-up one month after re-embolization showed complete alleviation of menstrual, urinary and bulk-related symptoms; and ultrasound showed a normal uterine size and echogenicity with an echogenic fibroid measuring about 33mm × 24mm × 21mm (96% volume reduction).

At 18 months, the follow-up ultrasound revealed a normal sized uterus with no evidence of fibroids on ultrasound and a complete resolution of the symptoms. (Figure 4)

Discussion

Partial or complete transcervical expulsion of myomas after successful UAE has been reported. [12, 13] It has also been observed after laparoscopic coagulation of uterine arteries [14] and can occur as a result of GnRH – agonist therapy, too.[15]

Pollard reported a case of expulsion after UAE in which the myoma was so large that it could not be removed transvaginally, resulting in an abdominal hysterectomy.[12] Felemban et al also reported expulsion of a 90mm × 50mm ×30mm fibroma after UAE without severe uterine bleeding.[16]

In most cases, fibroids were expelled spontaneously within 3 months after the UAE without massive hemorrhage and in some cases partially expelled fibroids are easily removed by ligating the connecting stalk without any risk of severe bleeding. Our case represents a significantly different presentation, though, as massive uterine bleeding occurred after expulsion without any visible pathologic condition such as uterine or cervical rupture.

To the best of our knowledge, using re-embolization of uterine arteries for treatment of massive vaginal bleeding following fibroid expulsion has not been reported in the literature so far.

In conclusion, it is essential to warn women undergoing UAE about the possible risk of spontaneous expulsion of fibroids and consequently vaginal bleeding. In addition, a close follow–up is needed to prevent short–term complications such as hemodynamic disturbances and infection after fibroid expulsion. Appropriate antibiotic prophylaxis is important to prevent endometritis and sepsis.

Colleague (gynecologist) physicians must be aware of the uterine artery re-embolization for uterine bleeding after fibroid expulsion as an alternative treatment instead of hysterectomy.

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