



Transcatheter Uterine Artery Embolisation as a Treatment for Uterine Adenomyosis: A Case Report

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Transcatheter Uterine Artery Embolisation as a Treatment for Uterine Adenomyosis: A Case Report

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Abstract

Background Transcatheter uterine artery embolisation (TUAE) was reported to be clinically effective in women with uterine adenomyoma (UA) and heavy menstrual bleeding. However, if symptoms remain after TUAE, hysterectomy is ultimately required. Therefore, TUAE has not been officially recognised as a UA treatment.

Methods We report effective TUAE treatment of a 47-year-old patient with UA accompanied by severe dysmenorrhoea and heavy menstrual bleeding. She had undergone insertion of a levonorgestrel-releasing intrauterine system to treat dysmenorrhoea and heavy menstrual bleeding 6 months prior. During the follow-up period, she complained of severe uterine bleeding and abdominal cramping and visited the emergency room.

Results The clinical symptoms improved after TUAE. Menstrual flow fell, and lower abdominal pain resolved 6 weeks after TUAE. No additional surgical or drug treatment was required; only brief manageable abdominal pain was reported

Conclusions. Although TUAE is suggested to be efficacious only in uterine leiomyoma, it can be considered as primary treatment for the improvement of UA symptoms in women who prefer to nonsurgical treatment or to preserve reproductive capacity. TUAE is a valuable treatment for UA patients.

Introduction

Of all uterine adenomyomas (UAs), 70-80% occur in women aged 40-50 years, and 5-25% in those aged < 39 years. (1) Although rare, UA sometimes occurs in postmenopausal women with congenitally hypoplastic uteri. (2) The symptoms vary, but UA patients commonly complain of heavy menstrual bleeding (40-50%), dysmenorrhoea (15-30%), dysfunctional uterine bleeding (10-12%), dyspareunia, and chronic pelvic pain. Although rare, primary infertility and increased problems during pregnancy are sometimes reported in women with UA.

UA symptoms are similar to those of uterine

leiomyoma (UL); the conditions are best distinguished histologically. Both cause similar endometriosis. Dienogest and ulipristal acetate are prescribed to treat endometriosis and UL, respectively. However, there is little evidence that either is effective in UA patients. Transcatheter uterine artery embolisation (TUAE) is often used to stop obstetrical or postoperative gynaecological bleeding. (3) Since TUAE was first implemented in the late 1970s, the procedure has been used to conservatively manage UL, and is now considered the primary treatment. (4) TUAE improves symptoms and reduces UL size in patients with uterine bleeding and dysmenorrhoea. (5) Recently, TUAE was reported to be clinically effective in women with UA and heavy menstrual bleeding. However, if symptoms remain after TUAE, hysterectomy is ultimately required. Therefore, TUAE has not been officially recognised as a UA treatment. Here, we report effective TUAE treatment of a 47-year-old patient with UA accompanied by severe dysmenorrhoea and heavy menstrual bleeding.

Case report

A woman aged 47 years complaining of heavy menstrual bleeding visited our gynaecological outpatient department and was diagnosed with UA. She had undergone insertion of a levonorgestrel-releasing intrauterine system (LNG-IUS) to treat dysmenorrhoea and heavy menstrual bleeding 6 months prior. During the follow-up period, she complained of severe uterine bleeding (three pads every 10 min) and abdominal cramping and visited the emergency room (ER). The heavy menstrual bleeding and dysmenorrhoea persisted for 7 days after menstruation began, and she required analgesics during every period. She was menstruating when she visited the ER. The uterus was palpable under the umbilicus, and the lower abdomen was tender; however, no rebound tenderness was noted. She was anaemic (8.9 g/dL haemoglobin, 25.5% haematocrit). The blood chemistry data, blood coagulation, and liver function test results were within the normal ranges. The CA125 level (a tumour marker) was elevated to 63.1 U/mL. The uterus was in anteversion on pelvic ultrasonography and was enlarged to 10.3 x 6.8 cm; the anterior uterine wall was remarkably thickened.

The LNG-IUS was not visible. The uterus was generally enlarged, and the anterior myometrium was thickened and heterogeneously enhanced on pelvic computed tomography (CT). Haematometra was suspected because high-density material was evident in the endometrial cavity; however, no remarkable endometrial mass was noted. Neither ovary exhibited any abnormal feature. (Illustration 1)

Illustration 1. Computed Tomography of the Pelvis.



The uterus is enlarged, and hematometra is apparent.

The LNG-IUS had failed, and the patient rejected hysterectomy; we thus performed TUA. A winding, enlarged intrauterine artery was evident on abdominal aortic angiography. Microcatheters were inserted into both uterine arteries, and polyvinyl alcohol (355-500 μ L) was slowly injected. Devascularisation was confirmed angiographically. She was discharged without any complications after 5 days of hospitalisation. One month later, an enhancing low-density lesion 6.8 x 4.7 x 7.6 cm in dimensions was found in the uterine fundus on CT follow-up. This included air bubbles, reflecting necrosis of the uterine myometrium. The high-density lesions in the endometrial cavity observed previously were now not evident. (Illustration 2)

Illustration 2. Computed Tomography of Post-Transcatheter Uterine Artery Embolisation of the Pelvis.



A new low-density lesion with air bubbles in the uterine fundus is suggestive of uterine necrosis 1 month after treatment.

Ultrasonography revealed eccentric echogenic spots in the uterine myometrium. (Illustration 3) The anaemia was corrected 3 months after TUA (11.7 g/dL haemoglobin, 34.5% haematocrit). The dysmenorrhoea improved significantly, and the extent of menstruation fell significantly. The patient remains under follow-up in our outpatient department.

Illustration 3. Transabdominal Ultrasonography of the Pelvis.



The adenomyosis resolved by 1 month after pelvic transcatheter uterine artery embolisation.

Discussion

UA is a form of endometriosis that differs from endometriosis externa and is sometimes termed endometriosis interna. UA is associated with various symptoms and lesions depending on tumour location in the ectopic endometrium. A final pathological

diagnosis is achieved after hysterectomy, but most cases are diagnosed via radiological imaging. Various UA manifestations are apparent on transvaginal ultrasonography. The most common are a hypoechoic shadow with an irregular boundary and/or shadows of various intensities. Magnetic resonance imaging is best for diagnosis of UL and UA. The T2-weighted images feature late signal intensity changes and enlargement of the boundary region in UA patients. Although women with UA are often asymptomatic, heavy menstrual bleeding, prolonged periods, dysmenorrhoea, and dyspareunia may develop. UA does not commonly cause infertility because it is diagnosed principally in women aged 40-60 years.

We report a patient with UA, who had delivered vaginally in her 20s. She visited our hospital complaining of dysmenorrhoea and heavy menstrual bleeding at 42 years of age (4 years ago); she was diagnosed with UA. However, UA is more common in women who are infertile and who gave birth at older ages. In fertile women, UA is associated with subsequent infertility, spontaneous uterine rupture during primiparity, preterm labour, preterm premature rupture of membranes, and postpartum haemorrhage. (6)

UA treatments include endometrial abrasion and hysterectomy. However, these treatments are best suited to patients who do not want or cannot have more children, and some women may refuse the surgery. Recently, adenomyomectomy (with uterine preservation) has been used to treat UA patients. However, haemostasis is problematic; heavy bleeding may develop. Also, the procedure is technically difficult if endometriosis is present. (7) The clinical efficacy of conservative management has not been addressed to date. TUAЕ usefully stops the profuse uterine bleeding sometimes associated with pregnancy, abortion, and birth. (8-11) Although uncommon, complications such as necrosis of the pelvic muscles have been reported. (12) TUAЕ has been used to preserve the uterus in women with uterine arteriovenous fistulae. (13, 14)

Since 1955, TUAЕ has commonly been used as a primary treatment for UL. Although the efficacy of TUAЕ in UA treatment is unclear, recent reports suggested that TUAЕ could be considered a primary treatment (thus avoiding hysterectomy). (15) Because TUAЕ is minimally invasive, it has a short recovery time, which accelerates the return to daily life, and it improves heavy menstrual bleeding, dysmenorrhoea, urinary frequency or urgency, chronic pelvic pain, and the volume of the uterus and uterine lining. TUAЕ is

associated with few complications and a high level of patient satisfaction (91-97%)(16)

In our present case, the clinical symptoms improved after TUAЕ. Menstrual flow fell, and lower abdominal pain resolved 6 weeks after TUAЕ. No additional surgical or drug treatment was required; only brief manageable abdominal pain was reported. In conclusion, TUAЕ is a valuable treatment for UA patients.

Abbreviation

TUAЕ: Transcatheter uterine artery embolization

UA: Uterine adenomyoma

UL: Uterine leiomyoma

LNG-IUS: Levonorgestrel-releasing intrauterine system

ER: Emergency room

CT: Computed tomography

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Conflicts of interest

All authors confirmed that there is no conflict of interest to disclose.

Contribution to Authorship

Temuulee Enkhbold: Conception and design, Interpretation of data, Drafting the article

Yoo-Jin Park: Conception and design, Revising article

Eun-Gyeong Lee: Conception and design, Revising article

Seung-Hee Lee: Conception and design, Revising article

Tae-Hee Kim: Conception and design, Final approval of the version to be published.

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