

Uterine myoma: results after endovascular uterine arteries embolisation in the treatment of symptomatic leiomyoma

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Aims and objectives

To evaluate fibroid size using ultrasonography (US) and magnetic resonance imaging (MRI) after uterine arteries embolization (UAE) of leiomyoma.

Methods and materials

From 2008 to 2017 to May 1023 women with symptomatic leiomyoma were treated by bilateral transcatheter UAE. Angiography and embolization were performed using 5F Cobra and Roberts uterine catheters by 355-1000 μ m of PVA particles. The size of particles depended on uterine arteries diameter and anastomosis between uterine and ovary arteries.

Mean age 35,5 years (range - 20-52). 51% of patients had dominant fibroid's size more than 8cm and different location, multiple fibroids occurred in 71% cases.

All patients underwent US and MRI before and after UAE. Analysis of fibroids was done in 1month (M), 3M, 6M and 12M.

Size, volume and structure of dominant fibroid were evaluated by MRI. We calculated the volume of dominant fibroid by obtaining the largest measurements in antrio-posterior, longitudinal and transverse planes and applying the formula for prolate ellipse.

Images for this section:

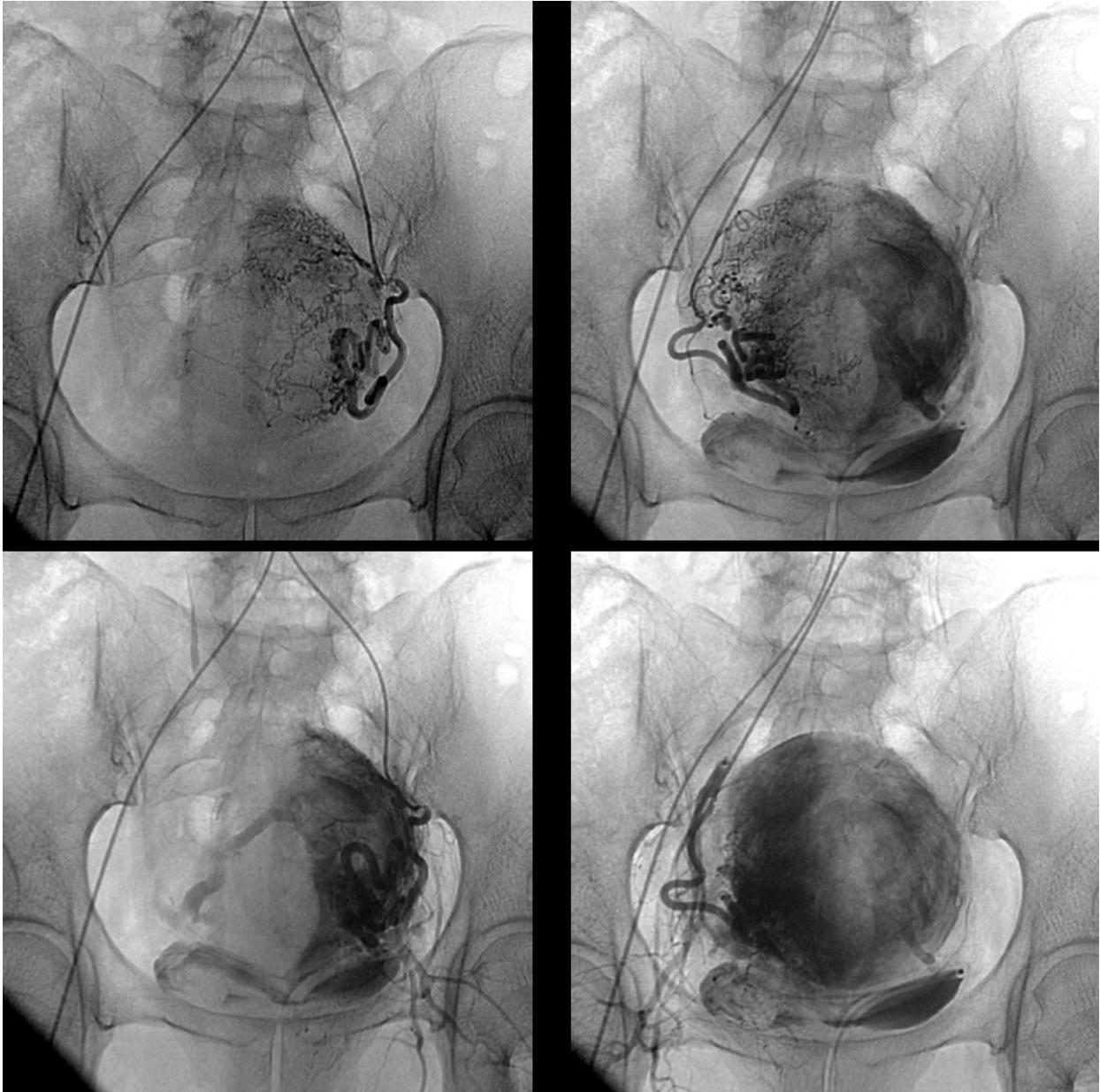


Fig. 1: Selective uterine arteriography before and after embolization

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Results

The moderate reduction of leiomyoma's size was observed in one month after UAE. Decrease of fibroid size determined by US - 18,4%, by MRI - 17,3%, in 1 month. Following reduction of fibroid's size was in 3 months by US - 40,7%, by MRI - 42,9%, in 6 months by US - 60,4%, by MRI - 61,8%, in 12 months by US - 72,5%, by MRI - 74,7%, in 24 months by US - 70,8%, by MRI - 72,2%. Doppler US-control showed blood flow decrease during first month after UAE, in 3 months blood flow data were restored in uterine arteries. We noticed also significant reduction or disappearance of clinical symptoms - pain, menorrhagia, pressure symptoms. The partial vascularization of leiomyoma detected in 24 months after UAE only in one case. It was confirmed by MRI with contrast enhancement and by selective angiography of uterine arteries. Ovarian arteries weren't involved in this case. It was a reason for reembolization of uterine arteries.

Images for this section:

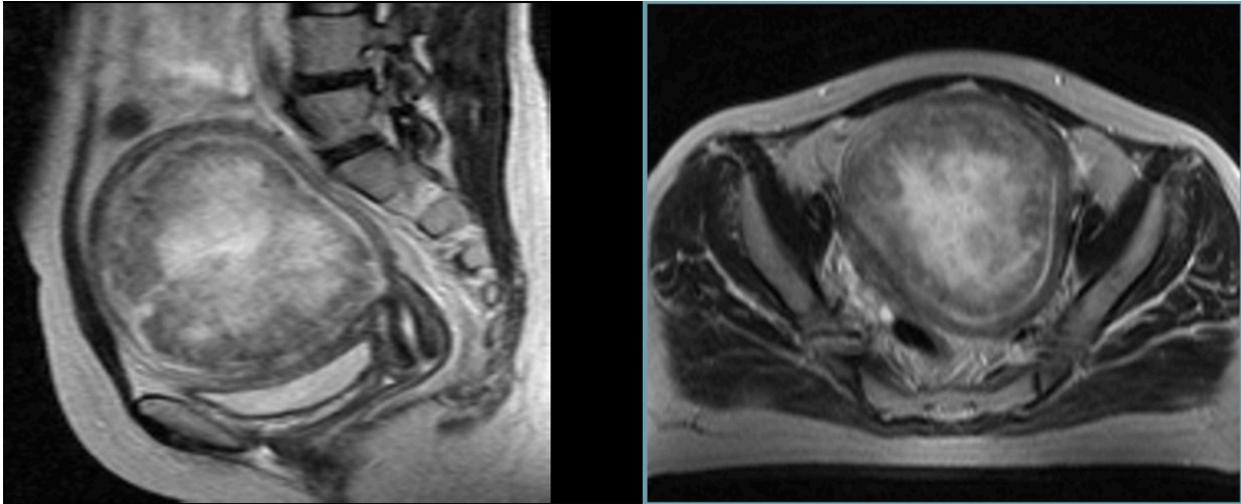


Fig. 2: Before UAE

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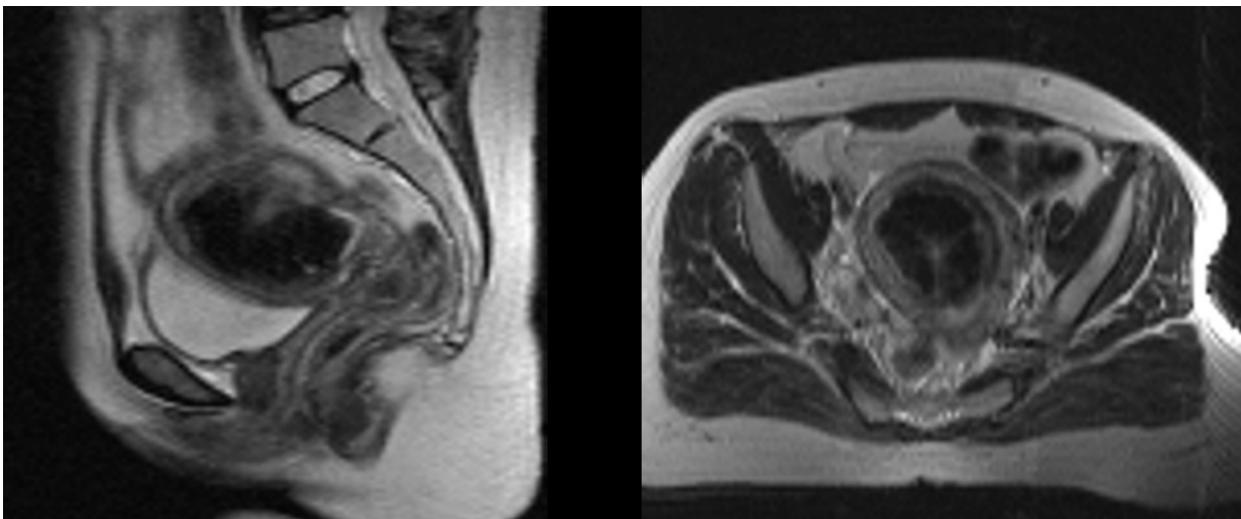


Fig. 3: 12 months after UAE

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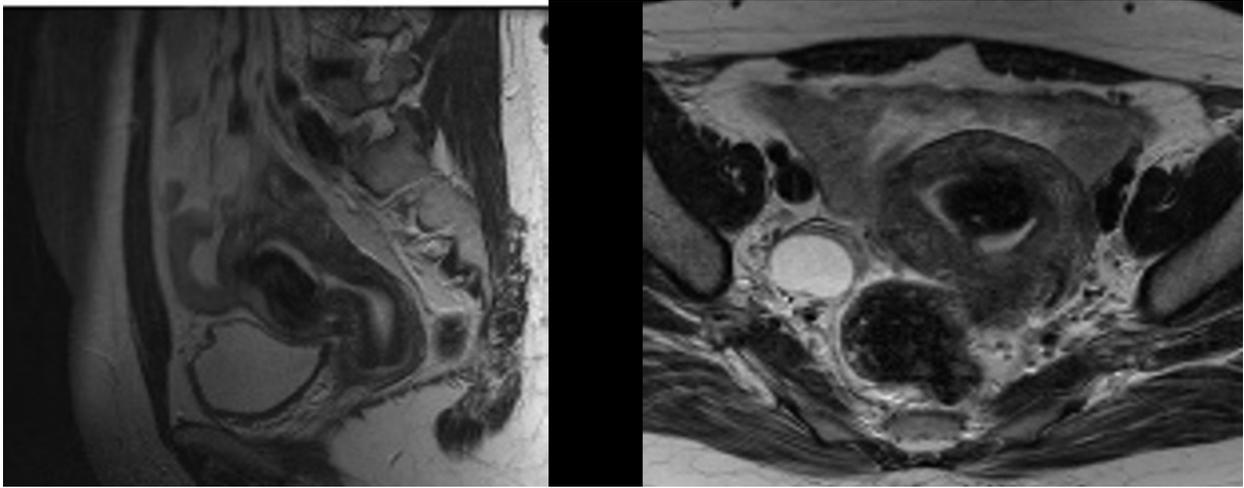


Fig. 4: 24 months after UAE

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Conclusion

UAE is an effective, minimal-invasive kind of leiomyoma's treatment. MRI and US are the modalities that can accurately estimate fibroid's changes and blood flow in uterine arteries. The tendency of fibroid's shrinkage after UAE is well-defined in period from 1M to 24M. After UAE the blood supply of myometrium is restored according to US Doppler data in the period from 1M to 3M.

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