

CASE REPORT

Uterine artery embolization to control bleeding after myomectomy

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Background. Uterine artery embolization can be considered as an alternative to surgery in the treatment of uterine fibroids as well as a procedure to control ongoing bleeding after surgery.

Case. A 27-year-old woman was admitted to hospital with vaginal bleeding after myomectomy. On ultrasonography, an aberrant flow was detected. On angiography, the diameters of uterine arteries were increased and collaterals prominent. After polyvinyl alcohol injection, the prominent vasculature disappeared.

Conclusion. Embolization of uterine arteries should be considered as a treatment modality if a minimally invasive method is to be preferred for extraordinary conditions such as postoperative bleeding from aberrant vessels.

Key words: embolization; myomectomy; postoperative bleeding; uterine artery

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Selective uterine artery embolization is being performed as an emergency procedure to control uterine bleeding. In this procedure, a small angiographic catheter is guided into the uterine arteries and a stream of tiny particles such as polyvinyl alcohol is injected to decrease blood flow to the uterus. It is now considered a safe and highly effective nonsurgical treatment of women with symptomatic uterine fibroid tumors.

Case report

A 27-year-old woman, gravida 3, para 1, D & C 2, was admitted to our hospital with vaginal bleeding after myomectomy for her giant leiomyoma. Her history revealed heavy menstrual and intermenstrual bleeding. She had been on oral contraceptive pills before. She had no other operations or medical disease in her past history, other than the myomectomy 7 days ago, in which the giant fibroid complex of 12 cm diameter consisting of leiomyomas with intramural and subserous components and touching the endometrium was extirpated. The operation was uneventful. However, she suffered from a sort of vaginal bleeding that was in time considered normal and expected to cease. On the postoperative seventh day, she referred to our clinic with heavier vaginal bleeding exceeding 100 ml/day. On ultra-



Fig. 1. Pulse-wave doppler sonographic image depicting high blood flow at the myoma bed.

sonographic examination, an aberrant vessel at the myoma bed with Doppler flow was detected (Fig. 1). On angiographic examination, the diameters of the uterine arteries were found to be increased and collaterals more prominent (Fig. 2). On the left side, where the myoma was taken out, dispersion of distal parts of arteries was complex and in anarchy. The patient was consulted and the management options were discussed, and it was decided to perform bilateral uterine artery embolization (Fig. 3). Prophylactic antibiotics were administered. Immediately after polyvinyl alcohol injection, the prominent vasculature disappeared. The patient was hospitalized for further complications. A transvaginal ultrasound was performed on the second day to check whether the previous findings exist. Fortunately, no flow was detected at the myoma bed, and the patient was discharged on the second day. She is now doing well.

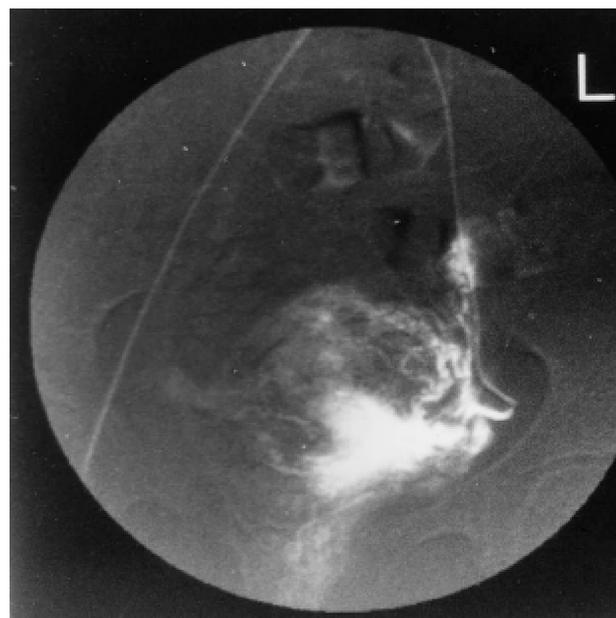


Fig. 2. Angiographic picture of the left uterine artery prior to embolization.

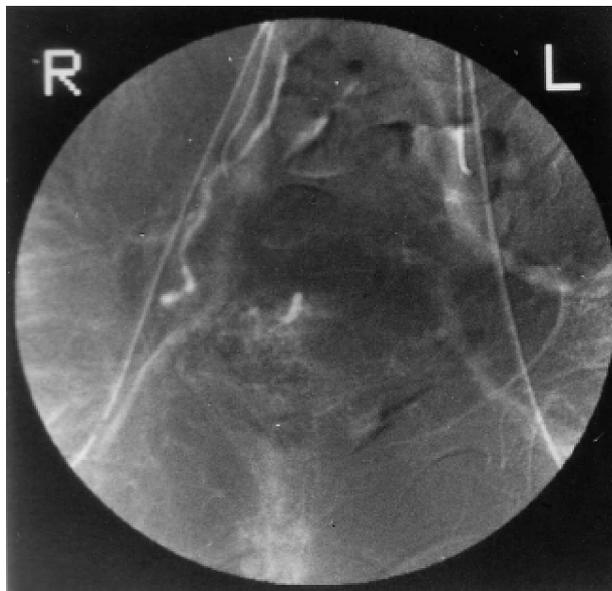


Fig. 3. Angiographic picture after embolization.

Discussion

Because of the risk of postoperative bleeding, every patient undergoing a gynecologic operation is monitored carefully during the first 24 hr after the operation. However, there are rare occasions of later bleeding problems, where conservative options to control bleeding are more favorable. Examples to conservative procedures are uterine artery embolization and very recently described transvaginal ligation of uterine arteries (1).

In the transvaginal uterine artery ligation technique, a circumferential incision is performed outside the transformation zone from anterior to the posterior cervix. The uterosacral ligaments are ligated with 0 Vicryl sutures; after that the cardinal ligaments in order to include the uterine arteries are ligated. Later, the cervical incision is approximated. The cessation of blood flow from the uterine arteries is demonstrated by the loss of Doppler waveforms. This technique can be applied as an outpatient procedure and seems to be a promising approach (1,2).

Embolization procedures for postsurgical hemorrhage have high success rates. Embolization has been used to treat obstetric hemorrhage, severe bleeding after hysterectomy, bleeding in gynecologic cancers, and symptomatic leiomyomata. It is preferred to hypogastric artery ligation

in many cases. It may be considered an alternative to hysterectomy, or myomectomy, in well-selected cases, especially if the patient has no desire of future fertility (3,4). In uterine fibroid tumors, besides being an alternative to surgery, embolization can be performed in cases of ongoing heavy bleeding despite myomectomy. Although promising results have been achieved in terms of successful pregnancies after uterine artery embolization, at the present time, however, it is not routinely recommended for women who desire future fertility (5,6).

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References

1. Harmanli OH, Khandelwal M. Transvaginal uterine artery ligation in a woman with uterine leiomyomas. *J Reprod Med* 2003; 48: 384–6.
2. Harman M, Zeteroglu S, Sengul M, Etlik O, Arslan H. Uterine Leiomyoma embolization: role of power doppler ultrasonography. *Tani Girisim Radyol* 2003; 9: 240–5.
3. Hurst BS, Stackhouse DJ, Matthews ML, Marshburn PB. Uterine artery embolization for symptomatic uterine myomas. *Fertil Steril* 2000; 74: 855–69.
4. Pelage JP, Le Dref O, Soyer P, Kardache M, Dahan H, Abitbol M et al. Fibroid-related menorrhagia: treatment with superselective embolization of the uterine arteries and midterm follow-up. *Radiology* 2000; 215: 428–31.
5. Ravina JH, Vigneron NC, Aymard A, Le Dref O, Merland JJ. Pregnancy after embolization of uterine myoma: report of 12 cases. *Fertil Steril* 2000; 73: 1241–3.
6. Poppe W, Van Assche FA, Wilms G, Favril A, Baert A. Pregnancy after transcatheter embolization of a uterine arteriovenous malformation. *Am J Obstet Gynecol* 1987; 156: 1179–80.

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