

Uterine Artery Embolization in Treatment of Fibroid Uterus: A Case Series

Malvika S Jain¹, Sirisha PSNRS²

ABSTRACT

Background: Uterine artery embolization (UAE) for the management of fibroid uterus is now a widely used modality for management of fibroid uterus. It has an advantage over the gold standard options of hysterectomy of being minimally invasive, uterus conserving, and has faster recovery. We here discuss our experience of the use of UAE for treatment of fibroid uterus in seven patients who had UAE between 2015 and 2020.

Materials and methods: Seven patients who had undergone uterine artery embolization for the treatment of fibroid uterus in our institute between 2015 and 2020 were selected and retrospectively inquired about their symptoms before the procedure and their outcome postprocedure was followed. Bilateral uterine arteries were embolized by interventional radiologist using polyvinyl alcohol (PVA) in all cases.

Result: Out of the seven women who underwent UAE, six presented with a spectrum of menstrual complaints in the form of heavy menstrual bleeding and/or dysmenorrhea. One patient had pressure symptoms. Out of the six women with menstrual complaints, on follow-up, five of the six patients had symptomatic relief of heavy menstrual bleeding, whereas four of the six were symptomatically relieved of dysmenorrhea. Four of the seven patients had postprocedure radiological imaging which showed a comparative (10–50%) reduction in the size of the fibroids. None of the patients had other complications such as persistent postembolization syndrome, infection, or vaginal discharge.

Conclusion: UAE as an alternative treatment modality for symptomatic fibroid uterus showed a good patient satisfaction with most of the patients being relieved of their symptoms in our study. However, long-term outcomes in the form of fertility issues, recurrence of symptoms, and need for reintervention could not be assessed in the study.

Clinical significance: UAE as a treatment modality was met with high-level patient satisfaction in our study group. There were minimal complications associated with the procedure. Longer follow-up will be required to comment on the effect of UAE on fertility outcome.

Keywords: Fibroid, UAE, Uterine artery embolization.

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INTRODUCTION

Uterine fibroids are a common benign pelvic tumor that affects a large population with an incidence of almost 70%.¹ They can be asymptomatic or present with symptoms such as excessive menstrual bleeding, pelvic pain, pelvic congestion symptoms, and rarely infertility. Surgical management (hysterectomy or myomectomy) still stands as the gold standard treatment but a number of other treatment options are available for fibroid uterus. Uterine artery embolization (UAE) is one of the newer modalities that can be used for its treatment. Considered as a minimally invasive, uterus conserving method for treatment of leiomyomas, UAE was first introduced for the treatment of fibroid uterus in the year 1995 by Ravina et al. It aims at embolizing the uterine arteries under radiological guidance using PVA or Gelfoam, hence effectively reducing the blood supply to the fibroid and causing symptomatic relief.

MATERIALS AND METHODS

Seven cases of uterine artery embolization done for the management of fibroid uterus in our hospital, and their outcome were retrospectively observed. All seven patients were nulliparous and had radiologically proven diagnosis of fibroid uterus. Patients for the procedure were chosen after gynecologist and radiologist opinion, a thorough counseling and informed consent for the procedure. Bilateral uterine arteries were embolized using polyvinyl alcohol under monitored anesthesia care and preoperative antibiotic coverage.

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CASE DESCRIPTIONS

Case 1

A 23-year-old nulliparous female presented with chief complaints of pain during menstrual cycles not associated with heavy menstrual bleeding for the past 6 months. MRI abdomen done showed two large intramural fibroids largest measuring 10 × 10 cm and 6 × 6 cm (Fig. 1). Interventional radiology opinion was sought, and patient was taken up for bilateral uterine artery embolization after getting an informed consent. Postoperatively, patient was managed for the first 24 hours in the ICU for adequate pain management and fentanyl infusion and patches used. Postoperatively, patient had fever on POD2 which was symptomatically managed. Postoperative period was uneventful, and patient was discharged on Day 3

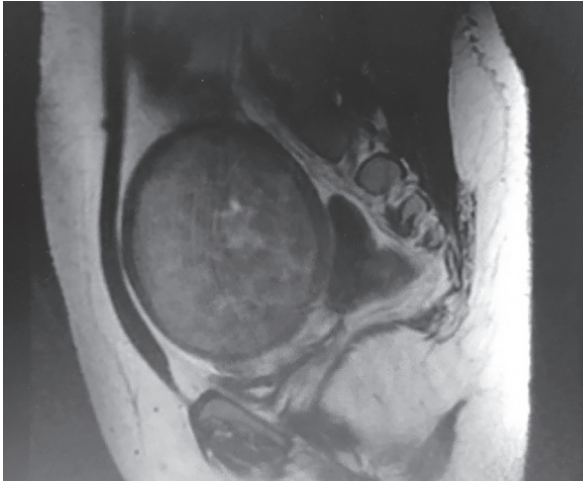


Fig. 1: MRI image—abdomen

after procedure. Following embolization, patient had resumed her regular menstrual cycle 1 month postprocedure and had symptomatic relief of dysmenorrhea. Repeat scan done 3 months after the procedure showed decrease in 10% of fibroid size.

Case 2

A 42-year-old nulliparous female came to the outpatient unit with complaints of heavy menstrual bleeding with dysmenorrhea for the past 5 years. MRI pelvis done showed multiple fibroid uterus—subserosal and intramural largest measuring 6 × 8 cm in size (Fig. 2). Patient was given treatment options and decided for uterine artery embolization. Postoperative period uneventful patient shifted to the ward, adequate analgesia was provided, and patient was discharged on POD2. On a follow-up—one year after the procedure—patient had resumed regular menstrual cycles with symptomatic relief of heavy menstrual flow. Complaints of dysmenorrhea have subjectively decreased.

Case 3

A 23-year-old nulliparous woman with complaints of menorrhagia with MRI showing multiple fibroid uterus underwent UAE after getting informed consent. Postoperative period was uneventful, and patient was shifted to ward. Patient was discharged on POD3. After UAE, patient had resumed her regular menstrual cycles after 2 months of procedure and had symptomatic relief of menorrhagia. No postoperative imaging was done.

Case 4

Thirty-six-year-old married for 5 years, known case of primary infertility, came with complaints of heavy menstrual bleeding and dysmenorrhea. MRI abdomen done showed four intramural fibroids in the uterus—largest measuring 5 × 5 cm. Interventional radiologist opinion was sought, and patient underwent bilateral UAE. Postoperative period was uneventful, and patient was shifted to ward. Patient was discharged on POD3. On follow-up, patient had resumed normal menstrual cycle one month postprocedure and had symptomatic relief of dysmenorrhea and heavy menstrual flow. No follow-up scan was done.

Case 5

A 34-year-old nulliparous woman presented with chief complaints of heavy menstrual blood flow with regular menstrual cycles and complaints of dysmenorrhea. Ultrasound done showed a 6 × 6 cm

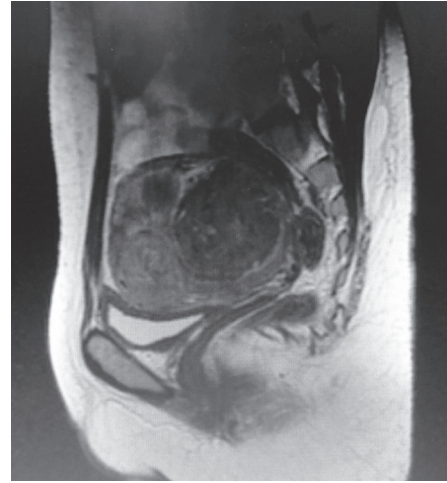


Fig. 2: MRI image—pelvis

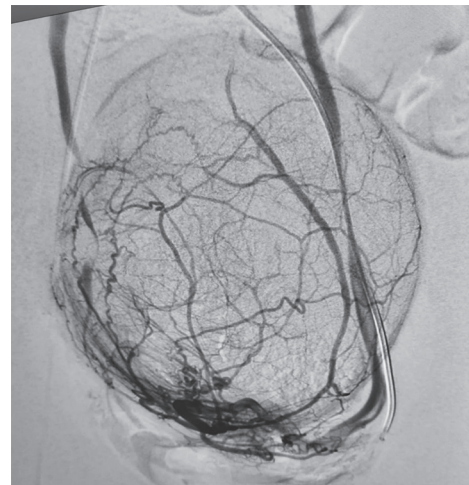


Fig. 3: Before embolization

intramural fibroid and 4 × 4 cm submucous fibroid. Bilateral UAE was done. Postprocedure, adequate analgesia and bupivacaine infusion were given and patient was managed in the ward. After the procedure, patient had resumption of regular menstrual cycles after 2 months, and there was relative relief of dysmenorrhea, but no decrease in heavy menstrual blood flow. Follow-up scan done at the end of 1 year showed decrease in the size of fibroid to half of its preprocedure size (Fig. 3).

Case 6

A 23-year-old nulliparous woman came with complaints of lower abdomen distention and pressure symptoms with no other menstrual complaints. MRI done showed an enlarged uterus of 21 × 18 cm with multiple intramural and subserosal fibroids. Patient was given three cycles of GnRH therapy, with no decrease in the size of the fibroids, and patient was decided for uterine artery embolization (Fig. 4). Postoperative period was uneventful, and patient was managed in the ward, discharged on Day 3 of the procedure. Patient had resumption of regular menstrual cycles. Follow-up MRI done after 1 year of procedure showed no reduction in the size of the uterus.

Case 7

A 33-year-old nulliparous patient presented with complaints of dysmenorrhea and menorrhagia. MRI done showed multiple fibroid

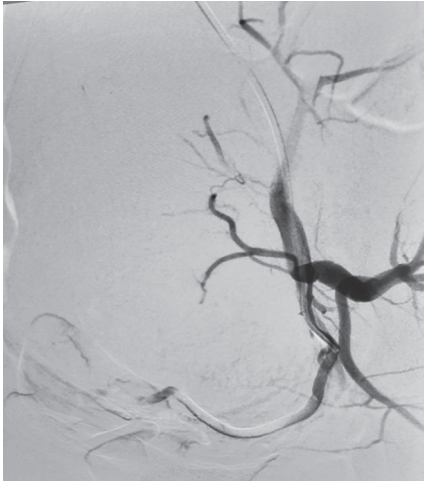


Fig. 4: After embolization

uterus largest measuring 10 × 7 cm in size subserosal fibroid. Patient was taken up for UAE. Postoperative period was uneventful, and patient was shifted to ward and discharged on POD2. She had resumption of regular menstrual cycles 1 month after the procedure with symptomatic relief of symptoms. Follow-up MRI done after 1 year showed relative decrease in size of all fibroids.

DISCUSSION

In this case series, six of the seven patients presented with menstrual complaints. We found that uterine artery embolization provided significant symptomatic improvement in five of the six patients, and decrease in fibroid volume and size was additional benefits gained from the procedure without any significant side effects.

The mean age of the patients in our study was 30 years. Six of the seven patients had presented with menstrual complaints which included a spectrum of heavy menstrual bleeding along with dysmenorrhea, and one of them had lower abdomen fullness and distention. Four of the seven patients required postprocedure ICU care for analgesia and morphine infusion. Average number of days of stay in the hospital was 3 days. One patient had fever postoperatively which was symptomatically managed. None of the patients had any postprocedure complications in the form of postembolization syndrome or vaginal discharge or infection. On a follow-up, patients resumed menstrual cycles on an average 2 months postprocedure. Five of the six patients had symptomatic relief in heavy menstrual bleeding, whereas four of the six patients had symptomatic relief of dysmenorrhea. One patient who had persistent complaints of heavy menstrual bleeding had a submucous fibroid. Follow-up scan done in four patients 1 year after the procedure showed significant reduction in size of the fibroid for three patients and no reduction in the size of the fibroid for one patient.

UAE has advantages in comparison with the gold standard hysterectomy or myomectomy: uterine sparing, faster recovery, and cost-effective. UAE is associated with lesser perioperative complications in comparison with myomectomy.² Absolute contraindications to UAE include gynecological malignancies, active pelvic inflammatory diseases, and pregnancy.

The most common immediate postoperative complication includes pain, which lasts for 24–48 hours postprocedure. Various methods have been used for this pain management—morphine or fentanyl infusion, NSAIDs, and superior hypogastric nerve blockage.³

Once the acute pain settles down, patients can be managed with oral NSAIDs and oral narcotics if needed. Other complications include nonpurulent vaginal discharge, infection, fever, and postembolization syndrome. The risk of fertility reduction caused by UAE is still not been proved; none of the patients in the study group could be assessed for this risk. Young women wishing to conceive postprocedure should be thoroughly counseled about the lack of adequate evidence to comment on the fertility outcomes post-UAE. However, multiple studies have shown successful pregnancies after UAE.^{4,5} Risk of infection was reduced by prophylactic preprocedure dose of IV antibiotic (ceftriaxone). Long-term complication attributed to UAE includes decrease in ovarian reserve; however, this risk is age-dependent with higher risk of failure in women older than 40 years (45%) and less than 1% in women less than 40 years.⁶ None of the patients in our series had any complaints amenorrhea postprocedure. Long-term complications such as recurrence of symptoms and need for reintervention could not be assessed.

CONCLUSION

The use of uterine artery embolization in the treatment of symptomatic fibroid uterus in young women or women wanting uterus conserving procedure has gained momentum recently. Patient selection is the key for UAE. The decision to proceed with UAE for management of fibroid should include a clear description of the procedure and the possible minor and major complications. In our series of cases, the overall satisfaction post-UAE was good, with most patients having relief of their symptoms. Longer follow-up of patients to find the effect of UAE on fertility outcomes and recurrence of symptoms are needed.

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REFERENCES

1. Cramer SF, Patel A. The frequency of uterine leiomyomas. *Am J Clin Pathol* 1990;94(4):435–438. DOI: 10.1093/ajcp/94.4.435.
2. Manyonda I, Belli AM, Lumsden MA, Moss J, McKinnon W, Middleton LJ, et al.; FEMME Collaborative Group. Uterine-artery embolization or myomectomy for uterine fibroids. *N Engl J Med* 2020;383(5):440–451. DOI: 10.1056/NEJMoA1914735.
3. Spencer EB, Stratil P, Mizones H. Clinical and periprocedural pain management for uterine artery embolization. *Semin Intervent Radiol* 2013;30(4):354–363. DOI: 10.1055/s-0033-1359729.
4. Mara M, Maskova J, Fucikova Z, Kuzel D, Belsan T, Sosna O. Midterm clinical and first reproductive results of a randomized controlled trial comparing uterine fibroid embolization and myomectomy. *Cardiovasc Intervent Radiol* 2008;31(1):73–85. DOI: 10.1007/s00270-007-9195-2.
5. Walker WJ, McDowell SJ. Pregnancy after uterine artery embolization for leiomyomata: a series of 56 completed pregnancies. *Am J Obstet Gynecol* 2006;195(5):1266–1271. DOI: 10.1016/j.ajog.2006.04.011.
6. Dutton S, Hirst A, McPherson K, Nicholson T, Maresh M. A UK multicentre retrospective cohort study comparing hysterectomy and uterine artery embolisation for the treatment of symptomatic uterine fibroids (HOPEFUL study): main results on medium-term safety and efficacy. *BJOG* 2007;114(11):1340–1351. DOI: 10.1111/j.1471-0528.2007.01526.x.