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Original Research Article

## Management of single submucosal fibroid in unmarried females with uterine artery embolization

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### ABSTRACT

**Background:** Uterine fibroids (leiomyomas) are the most common benign neoplasm of the female pelvis. The location of fibroids, whether submucosal, subserosal, pedunculated subserosal, intramural, or endocavitary, is important because signs and symptoms may be determined by location. Uterine artery embolization (UAE) for many patients is an effective alternative treatment to surgical therapy for fibroid tumors. It is a minimally invasive procedure, which allows for rapid recovery and return to normal activities. Objective of this study was to know the efficacy of minimally invasive technique UAE for reducing symptoms in sub-mucous uterine leiomyoma in unmarried females.

**Methods:** This retrospective analysis was performed on 9 unmarried females with symptomatic single submucosal fibroid diagnosed on MRI with size range of 3.5 cms to 6.5 cms. They presented at Dayanand Medical College and Hospital, Ludhiana, Punjab in a period of 3 years from January 2016-December 2019. Inclusion criteria were unmarried females, single submucosal fibroid diagnosed on USG/MRI. Exclusion criteria was active infection, more than one fibroid in uterus, prior GnRH analogues treatment during the previous 3 months.

**Results:** All patients presented with heavy menstrual bleeding (HMB) and dysmenorrhea, lower abdomen pain was encountered in 3 patients and 2 patients had inter-menstrual bleeding. Recurrent, UTI was there in 1 patient and 1 patient had vaginal discharge. All fibroids belonged to stage 1 FIGO classification. UAE was done and patients were followed for 6 months. Symptomatic success was seen in 100% patients and 77.77% patients expelled the fibroid per vaginally.

**Conclusions:** UAE is alternative method of treatment for submucosal fibroids in unmarried females who do not want to undergo surgery. Proper case selection can give us good results and symptomatic relief.

**Keywords:** Dysmenorrhea, Fibroid, Heavy menstrual bleeding, Submucous, Unmarried, Uterine artery embolization

### INTRODUCTION

Uterine fibroids (leiomyomas) are the most common benign neoplasm of the female pelvis.<sup>1</sup> The location of fibroids, whether submucosal, subserosal, pedunculated subserosal, intramural, or endocavitary, is important because signs and symptoms may be determined by location.<sup>2-4</sup> Prevalence exceeds 80% among African American women and approaching 70% among Caucasian women. Approximately 50% of women with

fibroids experience symptoms which may include menorrhagia that may result in anaemia, bulk symptoms with bladder and bowel dysfunction, dysmenorrhea, and infertility.<sup>5</sup> Uterine artery embolization (UAE) for many patients is an effective alternative treatment to surgical therapy for fibroid tumors with current technology progressing toward less invasive therapies, the minimally invasive procedure of uterine artery embolization (UAE) is gaining popularity.<sup>6</sup> In the female genital tract, embolotherapy for control of hemorrhage from malignancy was

first reported in the late 1970s UAE for leiomyomas was first performed in the United States by Goodwin and colleagues in 1995.<sup>6-7</sup> Uterine artery embolization is a well-established therapy for uterine fibroids, with safety and efficacy demonstrated in several comparative randomized trials. It is a minimally invasive procedure, which allows for rapid recovery and return to normal activities.

Objectives of this study were to know the efficacy of minimally invasive technique UAE for reducing symptoms in sub-mucous uterine leiomyoma in unmarried females.

## METHODS

This retrospective analysis was performed on 9 unmarried females with symptomatic single submucosal fibroid diagnosed on MRI with size range of 3.5 cms to 6.5 cms. They presented at Dayanand Medical College and Hospital, Ludhiana, Punjab in a period of 3 years from January 2016 - December 2019.

### Inclusion criteria

- Unmarried females, single submucosal fibroid diagnosed on USG/MRI.

### Exclusion criteria

- Active infection, more than one fibroid in uterus, prior GnRH analogues treatment during the previous 3 months. While not contraindicated, there were some conditions including allergy to iodine, renal impairment, and coagulopathy, which required special cautions that were taken note of.

### Statistical analysis

Data were described in terms of range; frequencies (number of cases) and relative frequencies (percentages) as appropriate. All statistical calculations were done using SPSS (Statistical Package for the Social Science) SPSS 17 version statistical program for Microsoft Windows.

## RESULTS

All patients presented with heavy menstrual bleeding (HMB) and dysmenorrhea, lower abdomen pain was encountered in 3 patients and 2 patients had intermenstrual bleeding. Recurrent, UTI was there in 1 patient and 1 patient had vaginal discharge.

Detailed history, including her symptoms, age, prior fibroid therapies and assessment of patient's risks for the procedure was done. Counselling of women considering fertility following UAE was done.

All subjects underwent abdominal ultrasound examination and contrast enhanced pelvic MRI to determine exact size and location of the fibroid.

All fibroids belonged to stage 1 FIGO classification. According to size of fibroid, 7 patients had 3.5 cm × 5 cm, 1 patient had 5.5 cm × 5 cm and 1 patient had size of 6.5 cm × 6 cm

All the patients came to us because they had been advised surgery outside. All these patients had already taken some form of hormonal treatment.

Informed consent was obtained from each woman after all risks associated with the procedure were explained. The feeding vessel of the fibroid was embolized.

All women tolerated the procedure well.

All nine patients had symptomatic improvement, two patients had reduction in the size of fibroid and seven patients experienced expulsion of the submucosal fibroid (Table 1).

**Table 1: Outcome of UAE on submucosal fibroid.**

Result	Number of patients (n = 9)	%
Symptomatic improvement	9	100%
Reduction in fibroid size	2	22.22%
Expulsion of sumucosal fibroid	7	77.77%

**Table 2: Complications with UAE.**

Complications	Number of patients (n = 9)
Post embolization syndrome fever, malaise, pain abdomen, cramping	4
Watery vaginal discharge	3
Foul smelling vaginal discharge	1

Out of nine patients, four patients experienced post embolization syndrome which include low grade fever, pain, fatigue, nausea and vomiting and these symptoms peaked at around 48 hours after the procedure. Watery vaginal discharge was experienced by three patients and foul-smelling vaginal discharge in one patient. A five-day course of antibiotic was given in the latter case (Table 2).

After the UAE procedure, each woman remained in the hospital in bedrest for 48 hours and a majority was discharged after 2 days.

Patients were followed for 6 months.

## DISCUSSION

Symptomatic submucosal fibroids pose a real health problem to young females rendering them incapable to carry out day to day activities. It is also associated with heavy menstrual bleeding leading to anemia, dysmenorrhea, pelvic heaviness, discomfort. Before the advent of hysteroscopy and UAE, surgery used to be the mode of treatment in such patients. Large submucosal fibroids may need more than one sitting to complete the procedure of hysteroscopic resection of fibroid.

UAE is a single sitting procedure with good results making the patient relatively symptom free. UAE leads to interstitial edema followed by coagulative necrosis and hyaline degeneration within the fibroids. Hyaline degeneration represents a permanent end point in the history of fibroid.<sup>8-10</sup>

In our study, a fibroid size less than 5 cm responded well to UAE and were expelled vaginally in a period ranging between 6 weeks to 3 months. It was observed that size decreased in larger fibroids with size more than 5 cm but symptomatic improvement was seen in all the fibroids.

## CONCLUSION

In our study, all patients had symptomatic relief and spontaneous expulsion of fibroids were seen in 77.7% cases. Proper case selection can give us good results and this method can be opted as an alternative method for treatment of submucosal fibroids in unmarried women.

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