

Conservative surgical or interventional management of fibromyoma

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Conservative surgery for fibroid was established by the great British gynaecologist Victor Bonney way back in 19th century. The most common purposes of the conservative surgeries for fibroid are to maintain the reproductive function and to maintain the regular menstrual cycle. Eighty to ninety percent women of 30-50 years have fibroids in their uterus. Of course, only 25-30% women have clinically relevant fibroids. Though fibroids are frequently associated with infertility, in 1-2.4% cases of infertile patients, fibroids are responsible as causative factor¹.

Different types of conservative surgical managements:

- a. Myomectomy: conventional - abdominal, vaginal, laparoscopic, robotic
- b. Uterine artery embolization
- c. Focussed ultrasonography
- d. Myolysis
- e. Clipping of uterine artery: abdominal, vaginal

A. Myomectomy

Limitations of myomectomy -

- Recurrence of fibroids: In 50% of cases in 5 years there is recurrence of fibroids following myomectomy. It is essential to mention about this during preoperative counseling. Of course there is ample time for completing the family before reintervention for the recurrence in most situations.
- Persistence of symptoms: There may be persistence or recurrence of some of the symptoms viz., menorrhagia, dysmenorrhoea etc. which may be due to causes other than myoma.

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- Uncontrolled bleeding during myomectomy: Though it is rare sometime such situation may lead to hysterectomy.
- Multiple, very big or difficult site of fibroid: Innumerable number, huge fibroid and cervical or broad ligament fibroid may lead to conversion of the procedure or complication.
- Malignancy: Though not very common this serious complication need to be discussed during counseling.
- Rupture of uterus in subsequent pregnancy: It varies from 1-10% which is to be noted seriously; whereas there is an overall incidence of rupture uterus in pregnancy in unscarred uterus as 1 in 1700 pregnancies²⁻⁴.

Preparation for myomectomy -

- Counseling: This is crucial. All the points discussed in limitations of myomectomy are to be emphasized.
- Arrangement of blood: In case it is required during surgery.
- Thorough investigation: It is mandatory to rule out other causes for - infertility, recurrent abortion, abnormal uterine bleeding (AUB).
- Consent of hysterectomy: In selected cases it is necessary.
- Malignancy to be ruled out: Hysteroscopy and endometrial biopsy to rule out endometria carcinoma in case of AUB and perimenopause.
- Colour doppler study with 3D or 4D ultrasonography of pelvic organs is necessary to predict malignant changes of fibroids.
- Time of operation: Proliferative phase after the menstruation is the best time to operate.

Table 1: Comparison of various surgical management of fibroid

| Comparison parameters | Hysterectomy | Myomectomy | Uterine artery embolization | Focused ultrasonography |
|--------------------------------|---|---------------------|--------------------------------|-------------------------------|
| Hospital stay | 2-5days | 0-3days | 1day | No |
| Histopathological confirmation | Yes | Yes | No | No |
| Fertility preservation | No | Yes | Potentially not | Yes |
| Dependency on number and size | No | Yes | No | Yes |
| Reintervention rate | 1.8-10.7% | 8.9-9% | 7-34.6% | - |
| Advantage | Patient satisfaction, Less complication | Fertility preserved | Major anaesthesia not required | No anaesthesia; OPD Procedure |

Principles of surgery -

- Incision to enucleate the fibroids is made carefully avoiding fallopian tube and using minimum number of incisions.
- Bonney's hood operation technique for posterior wall fibroid.
- Haemostasis obtained by careful closure of the cavities following removal of fibroids.
- Endometrial cavity opening is avoided if possible. In case of opening it is repaired in layers by interrupted delayed absorbable sutures.
- Adhesion prevention measures are to be followed. Oxidised regenerated cellulose or sepra film may be used.
- Round ligament plication is done in selected cases to maintain the anteversion of the uterus.
- Chromopertubation: In those patients who are also suffering from infertility this is to be considered.
- Drainage: It is not mandatory. But in selected cases should be considered.

How to minimise blood loss in Myomectomy?

- Vasopressin injection: 20 IU vasopressin in 200 ml normal saline is used to inject in and around the fibroids to minimise the oozing.
- Bonney's myomectomy clamp: Rarely used now a days.

- Rubber catheter: Useful method. May be used as alternative to vasopressin.
- Ovarian artery clamping: Rarely used.

How to avoid causing injury to the neighbouring structures?

- Catheter is to be placed in the urinary bladder.
- Structures are to be identified before incising.
- Preoperative ureteric catheterisation is necessary in difficult situations like broad ligament or cervical fibroids.
- Mobilisation of the fibroids and the uterus is to be done carefully in difficult situation.
- Mobilisation of the urinary bladder in post caesarean cases with anterior fibroid needs utmost care. Hydrodissection is useful.
- Dye like methylene blue may be used for urinary bladder in difficult cases of bladder adhesion.
- Ureter may be traced from the pelvic brim in selected cases of broad ligament fibroid.

B. Uterine artery embolisation (Figure – 1)

- It is an angiographic interventional procedure using PVA particles.
- Prior to the procedure a thorough gynaecological assessment to rule out the following is necessary – 1) Premalignant lesion, 2) Chlamydial infection, 3) Gonococcal infection, 4) Coagulation disorder.

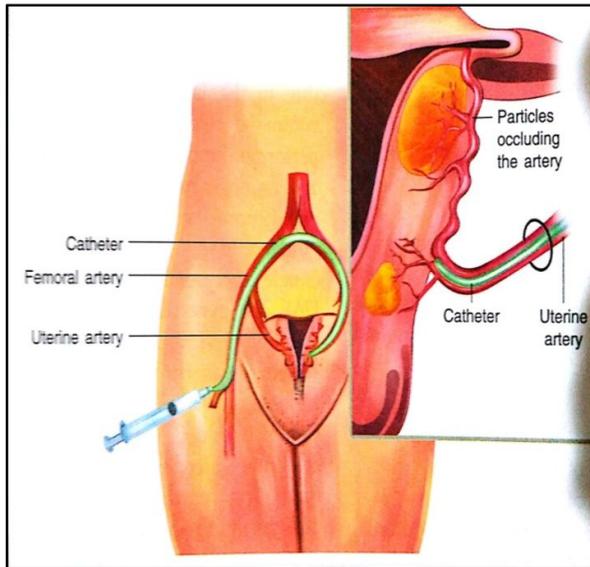


Figure 1: Uterine artery embolisation

Fibroid is reduced in size by 50% (0.2-89.1%)⁵. Of course it may lead to following complications: Post embolization syndrome (upto 25%) due to myoma necrosis, persistent fever, infection and pain.

C. MRGFUS (Magnetic Resonance Guided Focussed Ultrasound) or MR-HIFU (Magnetic Resonance Guided Focussed Ultrasound) -

- MRGFUS or MR-HIFU is focussed on the myoma to produce heat causing coagulative necrosis. In the session of 2-3 hours the patient lies prone in MRI unit with continuous drainage of bladder. This is approved by US FDA.
- It is advantageous in many ways viz. - Noninvasive, rapid recovery, well tolerated, superior symptom improvement, no rise in abortion rate, no rise of placental disorder⁶.
- Disadvantages of the procedure are as follows - Very expensive, effect decreases with time, 25% patients seek other treatment in next 5 years, not readily available.

D. Myolysis

- It is usually performed laparoscopically by inserting a radiofrequency needle in each myoma.
- Energy sources used for the purpose are: Cautery, diathermy, laser, cryotherapy.
- 12% patients need further treatment.
- Not used routinely.

E. Uterine Artery Occlusion

- Laparoscopically uterine arteries are occluded bilaterally at origin.
- 28% cases have recurrence in 4 years.
- It is not practiced commonly.
- Transvaginal uterine artery occlusion is done under doppler ultrasound guidance. Clamping is done for 6 hours.

Conclusion

Myomectomy is the mostly preferred procedure. Laparoscopic and open - both the procedures are equally effective. Morcellators are ideally to be avoided. If at all necessary may be used in an endobag. Hysteroscopic myomectomy is preferred in submucous myoma - bulging 50% or more. UAE is not preferred in young and those who want to preserve fertility. FUS is useful only in selected cases. Preoperative counseling is crucial. In subsequent pregnancy, good vigilance is required to observe the scar integrity.

Conflict of interest: None. **Disclaimer:** Nil.

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