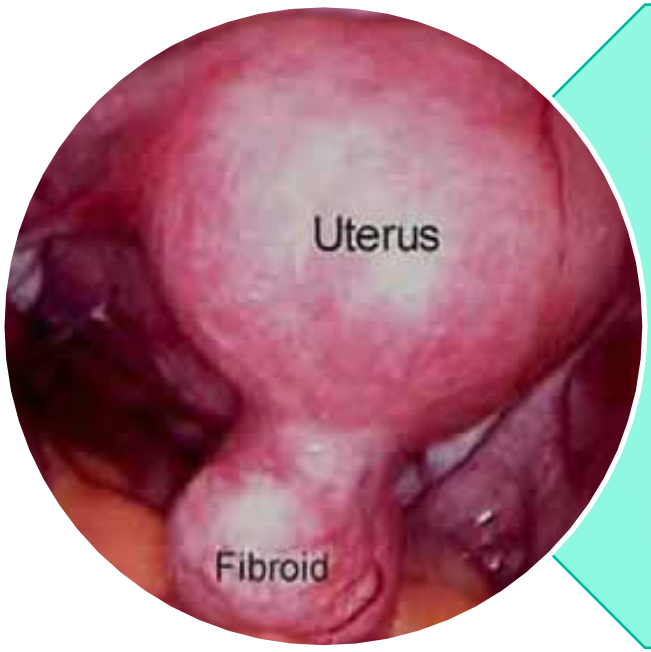
FIBROID

FIBROIDS



The commonest benign tumour of uterus

- Commonest benign solid tumour in female
- Arising from the myometrium or muscles of its vessel walls
- Peak age 35-45
- One in 4 women of reproductive age are found to have atleast one fibroid

AETIOLOGY

PREDOMINANTLY *ESTROGEN* DEPENDENT

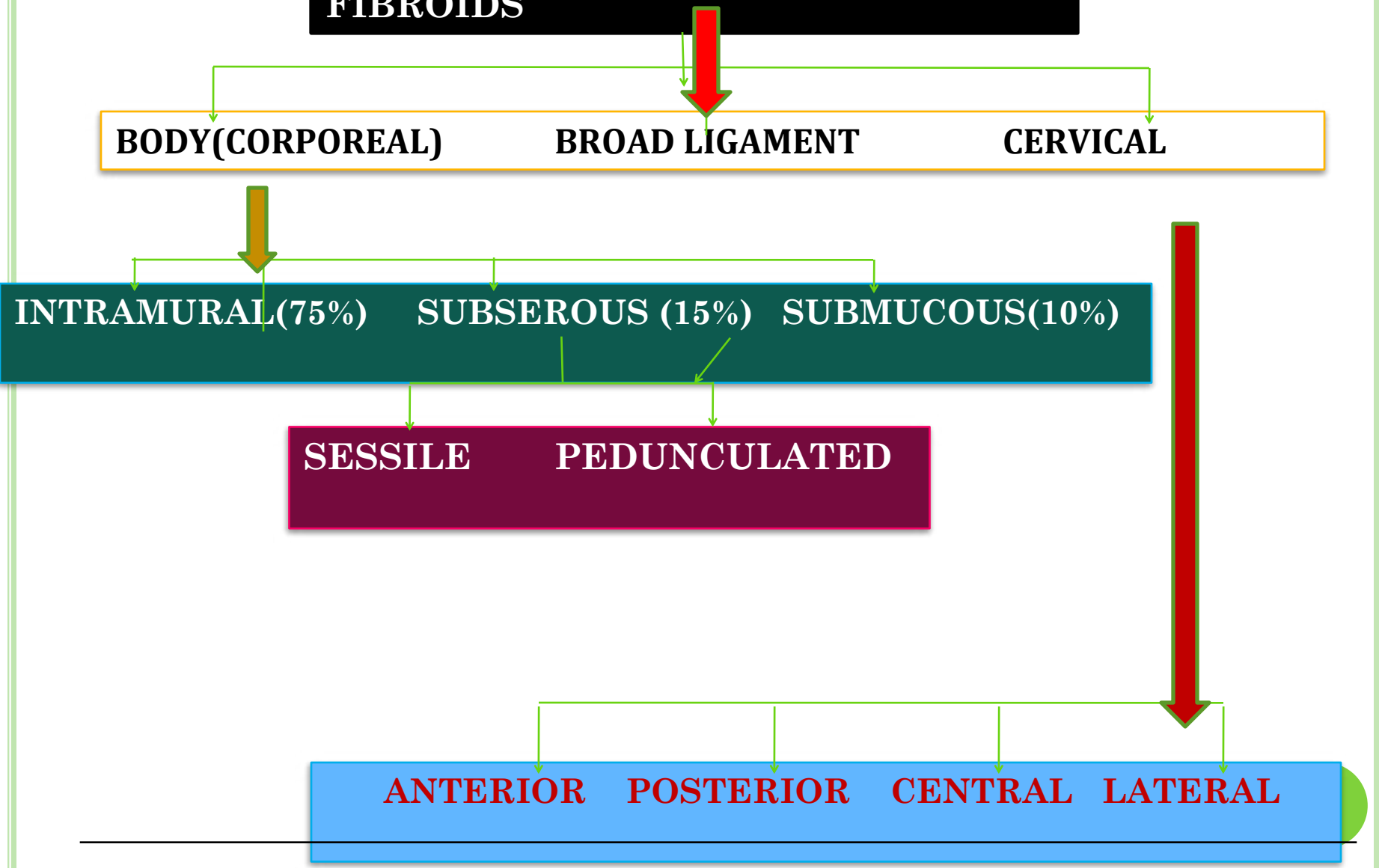
- ***EVIDENCES*:**
  - INCREASED GROWTH DURING PREGNANCY
  - RARE BEFORE MENARCHE
  - CEASE TO GROW FOLLOWING MENOPAUSE
  - MORE ESTROGEN RECEPTORS THAN ADJACENT MYOMETRIUM

- Bcl-2 ↑ in leiomyoma cells
- Growth Factors
  - Angiogenic fibroblast growth factor
  - Transforming growth factorß
  - Granulocyte macrophage colony stimulating factor
  - Insulin growth factor
  - Epidermal growth factor
- Cytogenic abnormalities – seen in 50% of fibroids Chr 6,7,12,14

RISK FACTORS

- NULLIPARITY
- OBESITY
- EARLY MENARCHE
- HYPERESTROGENISM
- ETHNICITY – AFROCARRIBEAN
- FAMILY HISTORY
- SMOKING

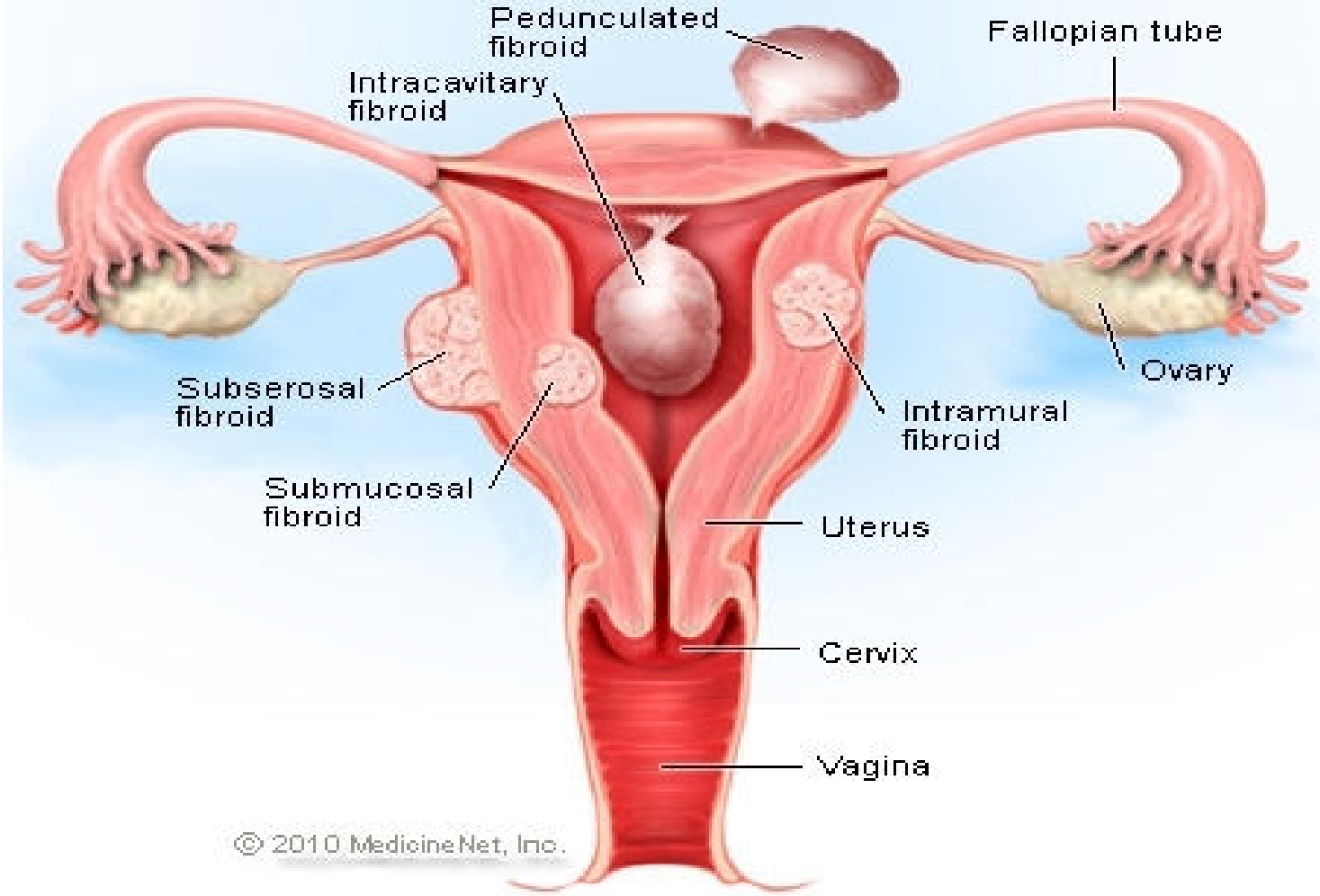
CLASSIFICATION OF UTERINE FIBROIDS



FIGO CLASSIFICATION

TYPE	DESCRIPTION
0	Submucous;intracavitary
1	Submucous;<50% intramural
2	Submucous ;>50% intramural
3	intramural;just contacts endometrium
4	intramural
5	subserous ;>50% intramural
6	subserous ;<50% intramural
7	subserous ;pedunculated
8	others with no myometrial invmt.

Uterine Fibroids



INTRAMURAL FIBROID

- Commonest
- Lies within the wall of Uterus
- Seperated from myometrium by a layer of connective tissue forming pseudocapsule
- Blood supply through this capsule
- Growth – outwards, inwards or remain as such

Subserous Fibroid

- May be sessile or pedunculated
- huge
- Pressure symptoms
- No menstrual symptoms
- Contains more fibrous tissue

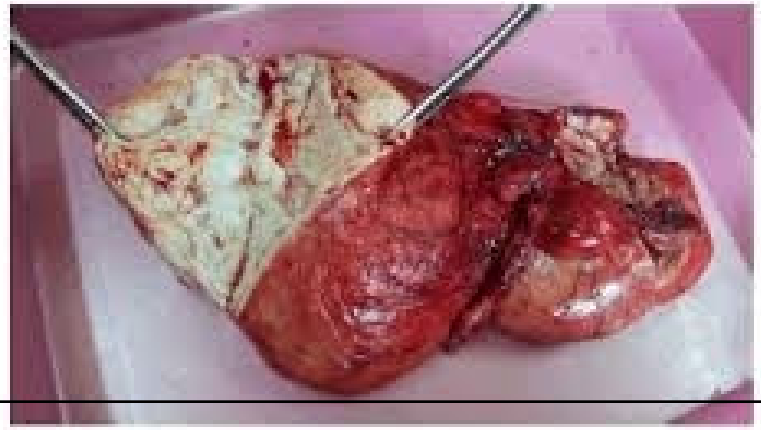


Figure 3 Cut section of subserosal fibroid

TUMOR GROWS OUTWARDS TO THE PERITONEAL SURFACE

↓

(further extrusion outwards with development of a pedicle)

PEDUNCULATED SUBSEROUS FIBROID

↓

(gets attached to vascular organ & cut off from uterine origin)

WANDERING /PARASITIC FIBROID

SUBMUCOUS

- Intramural grows inwards into the cavity
- Make the uterine cavity irregular & distorted
- Pedunculated fibroid can come out through cervix and present as polyp.
- maximum menstrual symptoms
- It may become infected → Ulcerated → menorrhagia, metrorrhagia
- Infertility, recurrent miscarriage
- sarcomatous change

CERVICAL FIBROID

- Rare
- Compression on urinary bladder ;urinary retention
- **"Lantern on the dome of St. Paul's"** – in case of central cx fibroid where uterus sits on the top of expanded cx
- Surg.challengable
- obstructed labour
- impossible to do LSCS

Broad Ligament Fibroids

Two types

- True: rare with no attachment to uterus
  - Originate from the smooth muscle fibre
  - Ureter & Uterine artery - medially
- False: subserous fibroid from lat uterine wall and grow in between broad ligament
- Ureter & Uterine artery -laterally

PATHOLOGY

- Single or multiple
- Firm and fibrous

CUT SURFACE

- Smooth , white whorled appearance with trabeculation
- Centre least vascular - degeneration

SECONDARY CHANGES IN FIBROIDS

DEGENERATION

- HYALINE DEGENERATION-65%
- CYSTIC DEGENERATION
- FATTY DEGENERATION
- CALCIFIC DEGENERATION-10%
- RED DEGENERATION

HYALINE DEGENERATION

- Commonest type
- Central portion more prone
- Soft and elastic feel
- Loss of whorled appearance
- Microscopy reveals hyaline changes

RED DEGENERATION

Carneous Degeneration

Occurs in large fibroid

During

- Pregnancy
- Puerperium

Cause

- Vascular
- Thrombosis of blood vessels → coagulative necrosis

RED DEGENERATION

TUMOR APPEARS DARK

CUT SURFACE SHOWS HEMORRHAGIC MEATY APPEARANCE

PAIN AND TENDERNESS

MICROSCOPY

- **EVIDENCE OF THROMBOSIS**
- **NECROSIS OF VESSELS**

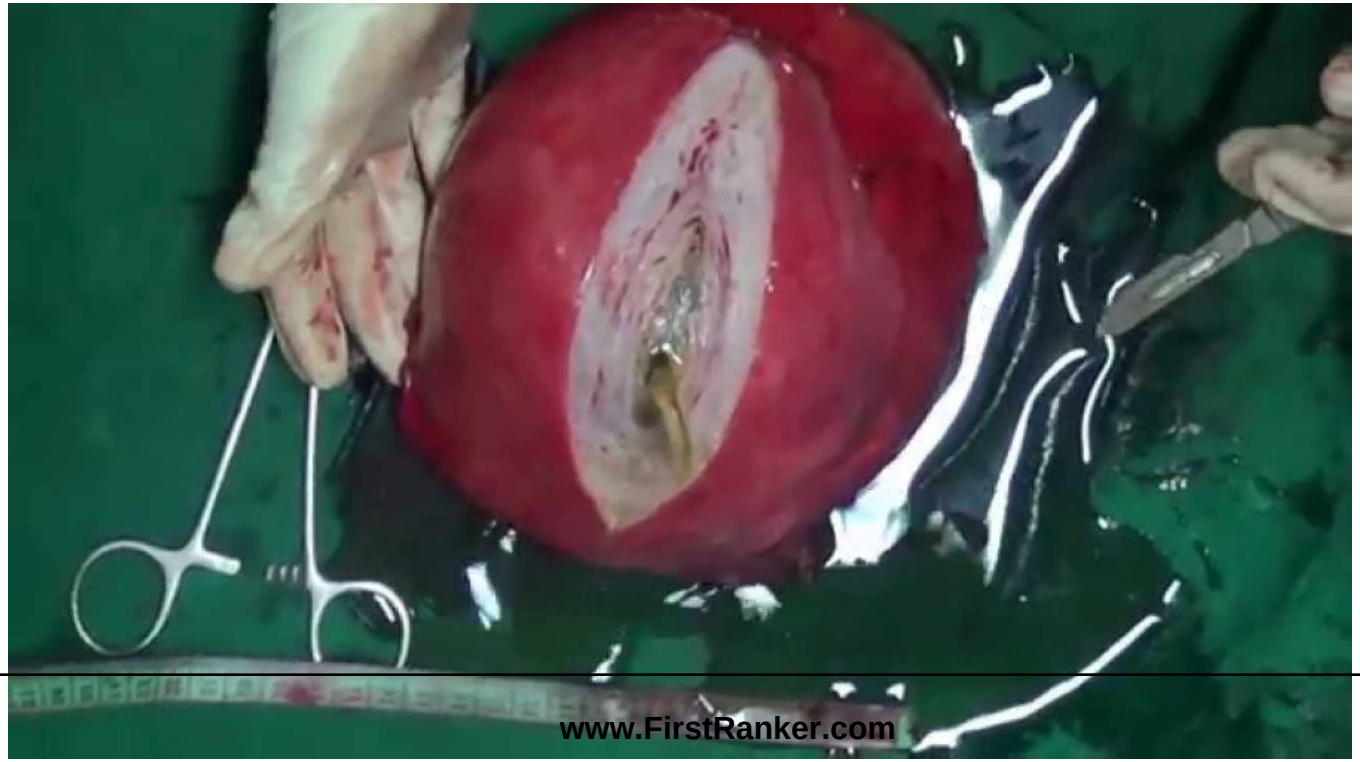
CALCIFIC DEGENERATION

- Due to circulatory impairment
- Common after menopause
- Occur in **subserous** fibroid with narrow pedicle
- Calcium carbonate or phosphate deposits
- WOMB STONE (CALCIFIED FIBROID)

CYSTIC DEGENERATION

Liquefaction of areas that have undergone hyaline change

Common in Intramural fibroids



UNUSUAL COMPLICATIONS

- **Sarcomatous change**
- **Leiomyomatosis**
- **Wandering fibroids**
- **Infection**
- **Torsion**
- **Pseudo meig syndrome**
- **Polycythemia**
- **Hypoglycemia**

SARCOMATOUS CHANGES

Not>0.1% cases

More in submucous & intramural

Rare<40yrs

Most common - leiomyosarcoma

- **FEATURES OF HIGH RISK**

1. RECURRENCE OF FIBROID POLYP
2. SUDDEN ENLARGEMENT OF FIBROID
3. POST MENOPAUSAL WOMEN —>PAIN,BLEEDING

- MACROSCOPY

irregular margin and variegted cut surface

Microscopy

High cellularity

Nuclear pleomorphism

Incresed mitoses

MITOSES PER 10 HPF

>10 leiomyosarcoma

<5 benign

5-10 STUMP

INFECTION

- Common in SUBMUCOUS fibroids & especially MYOMATOUS POLYPS projecting into vagina
- Covered by only a layer of endometrium that becomes thinned out and sloughs
- Blood stained purulent discharge
- Often following delivery or abortion
- → puerperal sepsis

LEIOMYOMATOSIS

- INTRAVENOUS LEIOMYOMATOSIS
- BENIGN METASTASISING
- DISSEMINATED PERITONEAL(Preg,OCP)

HYSTERECTOMY WITH OOPHRECTOMY,DEBULKING OF TUMORS AND GnRH AGONISTS

TORSION

Subserous pedunculated fibroid may undergo rotation at its site of attachment to the uterus

↓

Veins occluded & tumor engorged with blood

↓

Very severe a/c abdominal pain

PSEUDO MEIG SYNDROME

- Meig syndrome ⟹ ascites and pleural effusion -ovarian fibroma
- Pseudo meig ⟹ pelvic tumour
- Discordancy b|w arterial supply &venous supply of fibroid

POLYCYTHEMIA

- RARE
- Erythropoetin production by fibroid
- Pressure on ureter-alters erythropoetic fn of kidneys

CLINICAL FEATURES

- **SYMPTOMS**
  - Depends upon the site of the mass
  - More than 50% are asymptomatic

- **ABNORMAL UTERINE BLEEDING**
  - Menorrhagia
  - Metrorrhagia
  - Menometrorrhagia

Mechanism of Menorrhagia

- Increase in endometrial surface area
- Increased vascularity
- Interference with normal uterine contraction
- Endometrial ulceration and hemorrhage over submucous fibroid
- Compression of venous plexuses causing venostasis
- Associated endometrial hyperplasia and anovulation
- Increased growth factors

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- Pelvic discomfort
  - Low back pain – posterior fibroids
  - Sciatic nerve pain – broad ligament fibroid
- Urinary symptoms
  - Increased urinary frequency
  - Difficulty in initiating
  - Incomplete voiding
  - Bilateral ureteric compression - Hydronephrosis
- Other
  - Oedema of lower limbs,DVT
  - Difficulty in defeacation, dyspareunia, dyspnoea

- ABDOMINAL DISTENSION
- INFERTILITY
  - Submucous fibroid known to cause infertility
  - By mechanical means and by defective implantation
- RECURRENT MISCARRIAGE
  - Early and 2nd trimester miscarriage

CAUSES OF ACUTE PAIN IN FIBROIDS

- INFECTION
- RUPTURE
- RED DEGENERATION
- TORSION
- HAEMORRHAGE
- ACUTE RETENTION OF URINE IN CERVICAL FIBROID
- EXPULSION OF A SUBMUCOUS FIBROID
- SARCOMATOUS CHANGE

SIGNS

Abdominal Examination

- Pelvic mass with smooth or irregular surface
- Firm in consistency
- Lower border may not be palpable exception pedunculated subserous fibroid

Bimanual Examination

- In case of fibroid mass , uterus will not be felt separately
- Transmitted mobility

FIBROID AND PREGNANCY

Effects of Fibroids on Pregnancy

Pregnancy

- Early and late miscarriage
- 1st trimester bleeding
- Preterm Labour
- Placenta Praevia
- Malpresentation
- IUGR
- PROM

Labour

- Prolonged Labour
- Difficulty in delivery
- Increased chance of CS
- Chance of classical CS
- Increased bleeding at CS

After Delivery

- PPH
- Retained Placenta
- Puerperal Sepsis

EFFECT OF PREGNANCY ON FIBROID

- INCREASE IN SIZE
- RED DEGEN.
- TORSION
- INFECTION OF SUBMUCOUS FIBROID IN PUERPERIUM

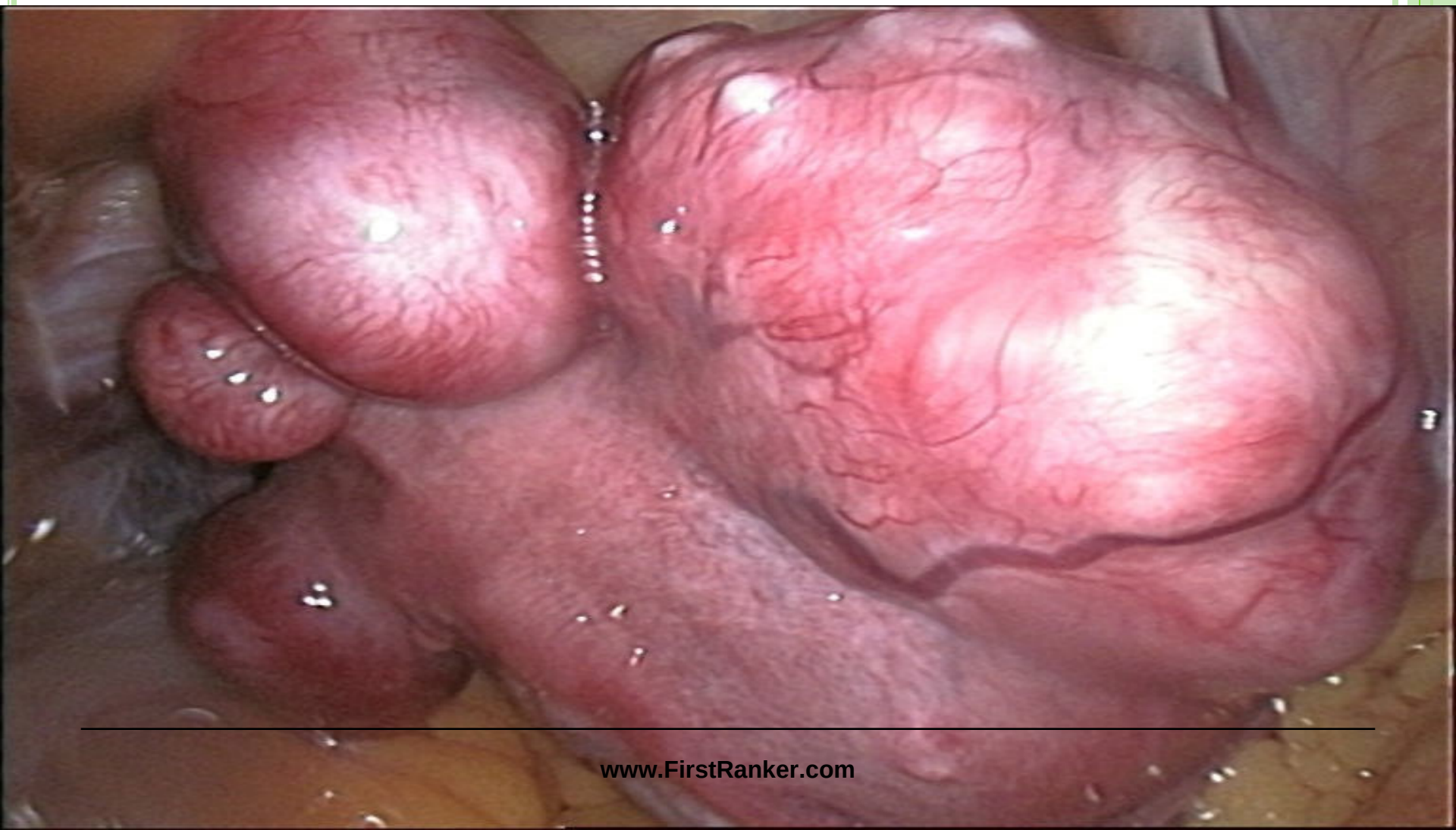
DIFFERENTIAL DIAGNOSIS

- Pregnancy
- Full Bladder
- Adenomyosis
- Pyometra
- Endometrial Ca and sarcoma
- Solid Ovarian Tumours
- Pelvic Infection and tuboovarian mass

INVESTIGATIONS

- Routine investigations
- PAP Smear
- USG - confirm Dx , hypoechoic,size,site,no.
  ovary
  ascites
  hydronephrosis
- Hysteroscopy -submucous fibroid

MANAGEMENT OF FIBROIDS



INDICATIONS FOR TREATMENT

- Infertility caused by cornual fibroid
- A fibroid >12 weeks size &a pedunculated fibroid
- An asymptomatic fibroid causing pressure on the ureter &pressure on the bladder
- Rapidly growing fibroid in a menopausal woman
- All symptomatic fibroids require treatment

MANAGEMENT

1. EXPECTANT MANAGEMENT
2. MEDICAL
3. SURGICAL
4. UTERINE ARTERY EMBOLISATION

Expectant Management

- Asymptomatic fibroid,provided the diagnosis is certain
- No evidence of ureteral compression
- Size <12 to 14 weeks
- Willing for follow-up
- Large fibroid –conservative management in women nearing menopause.
- Asymptomatic fibroid need not always be removed

MEDICAL MANAGEMENT

- Objectives-reduction in tumour size &relief of symptoms like menorrhagia
- Drugs -GnRH agonists
- -GnRH antagonists
- -Antiprogestins
- -danazol
- -others

GnRH agonists

- Reduce the tumour size by 50 to 80%
- Reduces vascularity preoperatively
- Amenorrhea –restores haemoglobin level
- Action-by gonadal suppression &hypo oestrogenism
- Tend to regain original size on discontinuation of drug

- Optimal duration prior to surgery-3 mnths
- Dose-goserelin 3.6 mg OR leuprolide 3.75 mg monthly s/c depot injection
- Or leuprolide single dose 11.5 mg 3monthly

ADVANTAGES

- Facilitates a laparoscopic/hysteroscopic myomectomy
- Facilitates a vaginal /laparoscopic hysterectomy
- Intra operative bleeding less
- Shrinkage of fibroid enable the use of a pfannensteil incision

PROBLEMS

- Hot flushes ,osteoporosis,vaginal dryness
- In 1% a/c degeneration & pain
- Fibroid capsule thin out making enucleation difficult& small fibroids invisible at surgery recur later

- Antiprogestins-RU486/mifepristone10-25 mg daily for 3 months causes amenorrhea &shrinkage of tumour
- Danazol-400-800mg daily for 3-6 months s/e-hirsuitism,weight gain
- GnRH antagonists cetrorelix/ganirelix
- Ulipristal (progestrone receptor modulator)
- Cabergoline (dopamine agonist)
- Others-gestrinone, &tamoxifen.

SURGICAL MANAGEMENT

- Myomectomy-indicated in an infertile woman /woman desirous of child bearing &wish to retain uterus
- Submucous &intramural fibroids best removed

PREREQUISITES

- Hemoglobin should be restored &arrange blood
- In infertility rule out other causes of infertility
- Consent for hysterectomy
- It should be performed in preovulatory menstrual cycle

To limit blood loss

- Timing the surgery
- Controlled hypotensive anaesthesia
- Vasopressin instillation into the serosa &myometrium overlying the myoma
- Using tourniquets at the internal os to compress the uterine vessels &at the infandibulopelvic ligament to occlude ovarian vessels

- Bonney s myomectomy clamp can be used to occlude uterine vessels
- Released at 20 min intervals

TYPES OF MYOMECTOMY

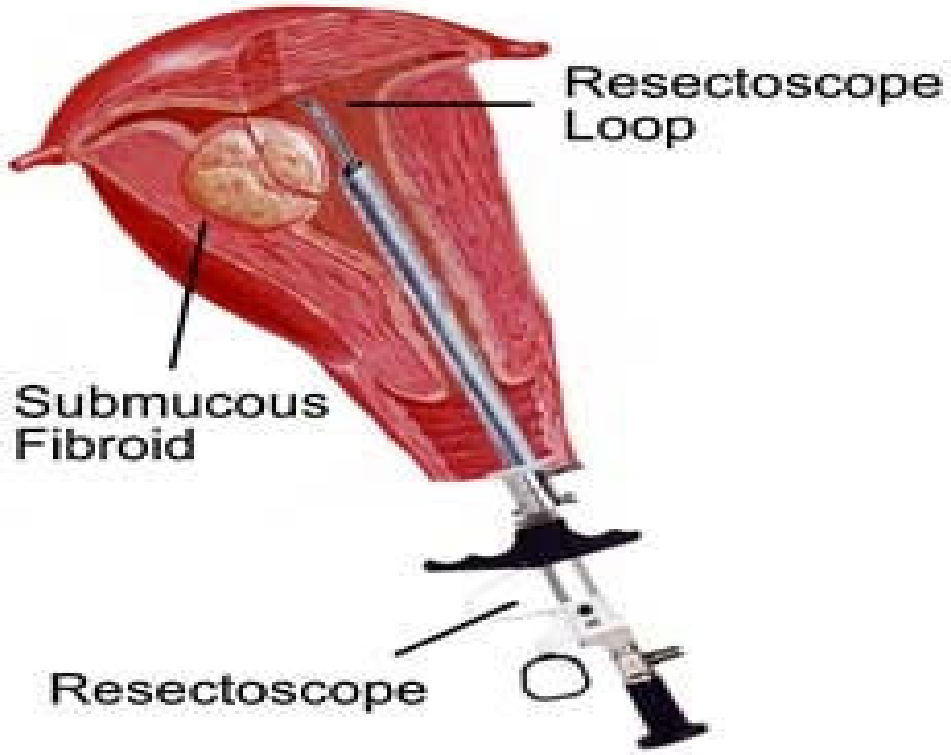
- OPEN MYOMECTOMY
- HYSTEROSCOPIC
- LAPAROSCOPIC
- VAGINAL

OPEN MYOMECTOMY

- Pfannenstiel or vertical paramedian incision
- Incise peritoneum
- Confirm feasibility
- Incision over anterior wall of uterus
- Control hemorrhage
- Capsule incised - enucleate
- Many fibroids can be removed through a minimal tunneling incision

HYSTEROSCOPIC MYOMECTOMY

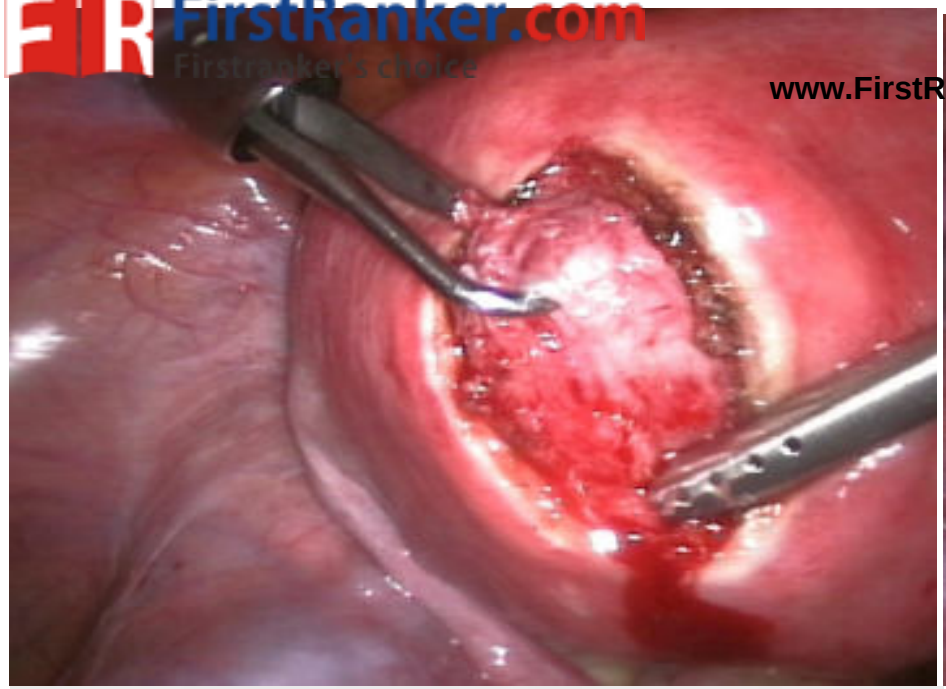
- Ideal for submucous fibriods
- Fibroids are excised by cautery, laser, resectoscope
- Under laparoscopic guidance
- Complications - cervical trauma , bleeding , adhesion

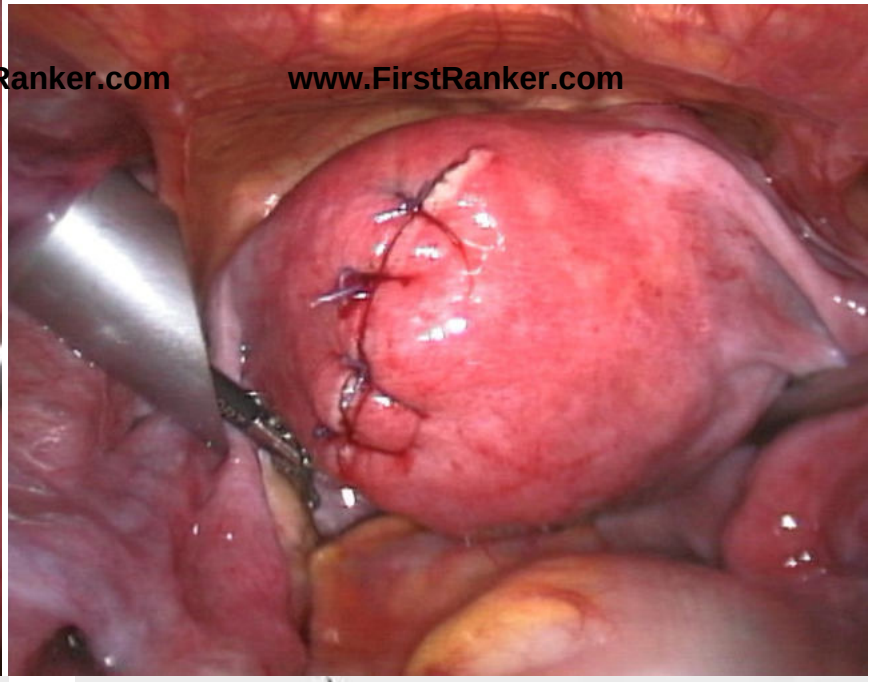


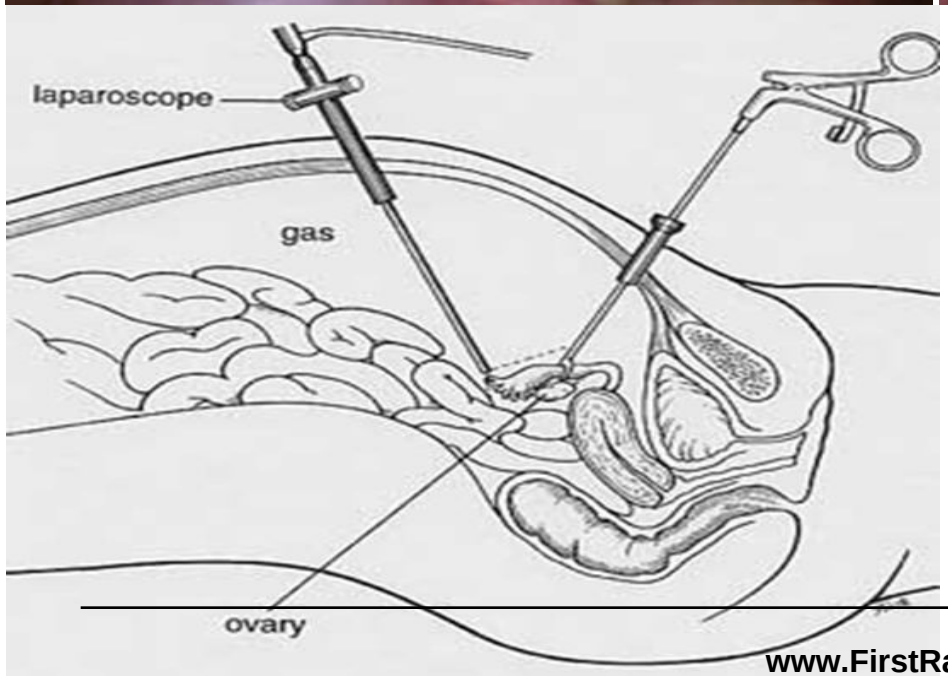
LAPAROSCOPIC MYOMECTOMY

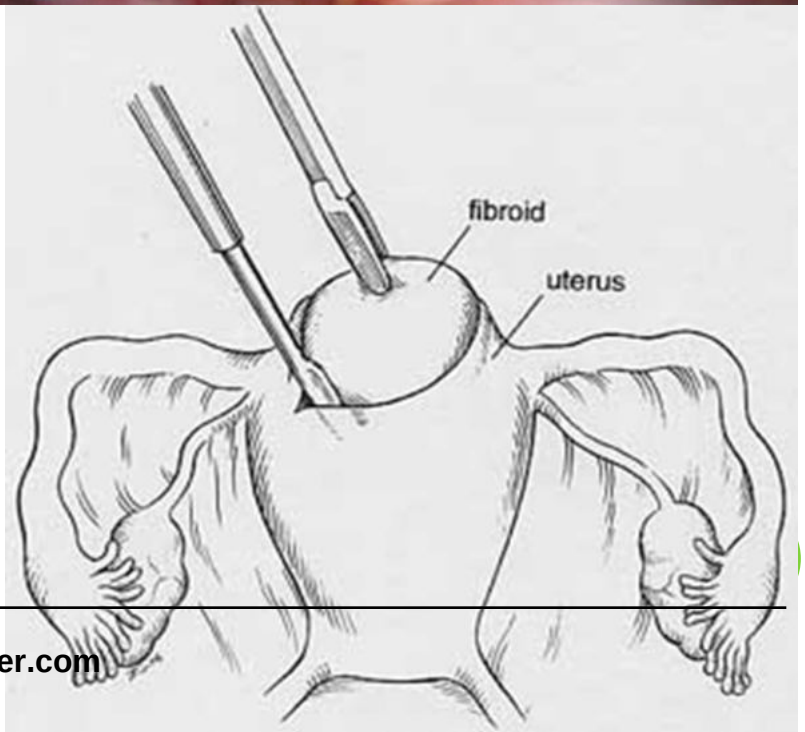
- Subserous &pedunculated fibroids
- Unipolar or bipolar cautery and laser
- Less hospital stay, less post operative pain & cosmetic
- Complication – scar rupture

VAGINAL MYOMECTOMY - Submucous fibroids
- cervical fibroid









COMPLICATIONS of MYOMECTOMY

Intraoperative-primary haemorrhage

-injury to ureters

-injury to bladder/rectum

Postoperative-myoma fever

- reactionary and secondary haemorrhage

- Adhesions
- Infection
- Future surgery difficult
- Recurrence of fibroids - 5-10%

HYSTERECTOMY

- Abdominal -large fibroids
- Vaginal - if uterus is mobile,size<14 wks,no previous surgeries,no pelvic pathology
- LAVH -avoids abdominal scar ,minimes pain,less hospital stay

  C/I -size>14 wks,broad ligament &cervical fibroid

Complications of hysterectomy

- Haemorrhage
- Trauma-bladder,ureter,bowel
- Sepsis
- Anaesthetic complications
- Paralytic ileus
- Dyspareunia
- c/c pelvic pain
- Residual ovarian syndrome& atrophy
- Vault prolapse
- Ovarian cancer

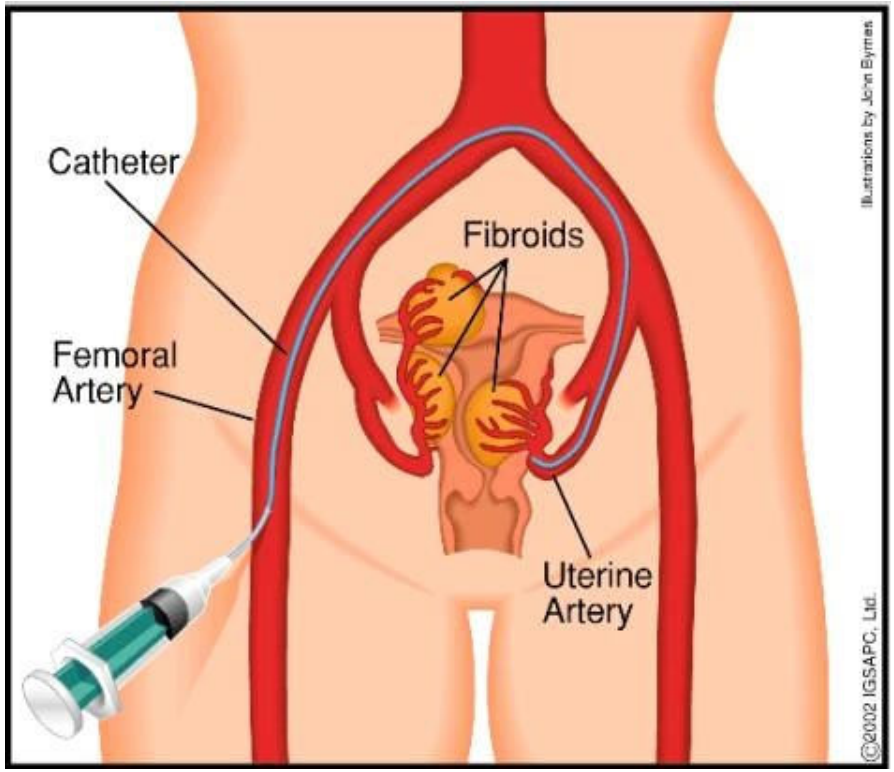
Uterine artery embolisation

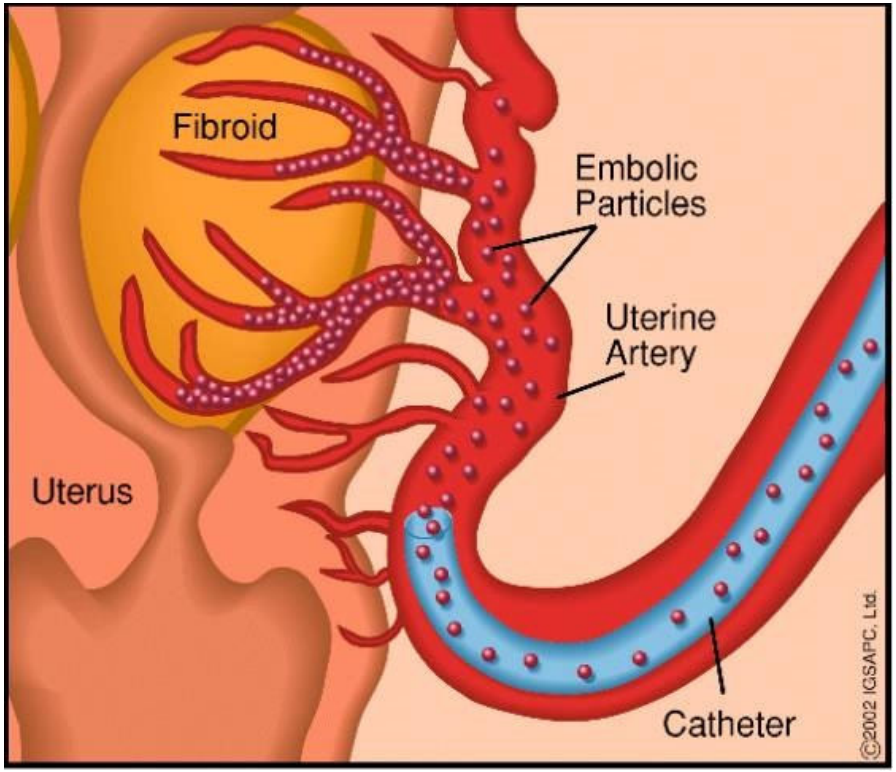
- Reduce vascularity &size of fibroid
- Contraindications- subserous &pedunculated
  large fibroid
  calcified fibroid
  inflammatory change

TECHNIQUE

- Local sedation
- Percutaneous femoral catheterisation - poly vinyl alcohol, gel foam particles, metal coils
- Discharged within 1-2 days
- Follow up – 6 months

UTERINE ARTERY EMBOLISATION





COMPLICATIONS

- Fever &infection
- Vaginal discharge &bleeding
- Severe pain
- Pulmonary embolism
- Ovarian failure
- Fertility reduced
- Allergic reaction

NEW TECHNIQUES

- MRI guided percutaneous laser ablation using high intensity focused ultrasound (HIFU)
- LAPAROSCOPIC MYOLYSIS-subserous fibroid

THANK YOU